

# 1999

## Percent of Responses by Item Category for the Science Items

### MAIN SURVEY

Third International Mathematics and Science Study Repeat

# TIMSS



TIMSS International Study Center  
BOSTON COLLEGE  
Chestnut Hill, MA USA

December 5, 2000

Science: Life Science  
 Label: Organ NOT in abdomen ( S012001 - A07 )  
 Item Type = MC Key = E

| COUNTRY            | N    | A    | B    | C    | D    | E    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 4019 | 1.6  | 3.6  | 3.5  | 9.2  | 81.2 | 0.9                    | 81.2 | 0.5     | 0.0            | 0.4  | 84.4              | 77.9             |
| Belgium (Flemish)  | 5256 | 0.6  | 3.5  | 0.7  | 10.6 | 84.1 | 0.4                    | 84.1 | 0.2     | 0.0            | 0.2  | 84.3              | 83.8             |
| Bulgaria           | 3272 | 1.0  | 2.9  | 1.7  | 5.0  | 76.3 | 13.0                   | 76.3 | 12.2    | 0.1            | 0.7  | 77.8              | 74.8             |
| Canada             | 8740 | 1.9  | 6.1  | 3.8  | 16.6 | 70.8 | 0.7                    | 70.8 | 0.3     | 0.1            | 0.4  | 74.6              | 66.9             |
| Chile              | 5861 | 2.2  | 8.6  | 3.6  | 18.1 | 64.5 | 3.1                    | 64.5 | 0.0     | 0.5            | 2.6  | 65.3              | 63.7             |
| Chinese Taipei     | 5772 | 0.7  | 1.0  | 0.7  | 5.4  | 91.9 | 0.3                    | 91.9 | 0.2     | 0.0            | 0.1  | 93.8              | 90.0             |
| Cyprus             | 3113 | 0.9  | 4.2  | 2.4  | 21.9 | 69.3 | 1.2                    | 69.3 | 0.9     | 0.0            | 0.4  | 74.1              | 64.8             |
| Czech Republic     | 3450 | 0.3  | 7.7  | 0.1  | 8.3  | 81.9 | 1.7                    | 81.9 | 1.2     | 0.0            | 0.5  | 85.4              | 78.1             |
| England            | 2946 | 1.8  | 4.5  | 3.5  | 14.1 | 73.9 | 2.2                    | 73.9 | 1.6     | 0.0            | 0.6  | 74.7              | 73.1             |
| Finland            | 2916 | 0.8  | 7.7  | 1.3  | 20.3 | 65.6 | 4.3                    | 65.6 | 0.0     | 0.0            | 4.3  | 68.3              | 62.9             |
| Hong Kong, SAR     | 5176 | 0.8  | 0.9  | 0.8  | 19.8 | 77.1 | 0.5                    | 77.1 | 0.1     | 0.0            | 0.5  | 78.7              | 75.6             |
| Hungary            | 3178 | 0.2  | 2.0  | 0.5  | 11.6 | 82.7 | 3.0                    | 82.7 | 2.6     | 0.1            | 0.3  | 85.6              | 79.8             |
| Indonesia          | 5845 | 6.5  | 7.6  | 2.2  | 34.2 | 49.0 | 0.5                    | 49.0 | 0.0     | 0.0            | 0.5  | 53.8              | 44.1             |
| Iran, Islamic Rep. | 5289 | 9.8  | 3.8  | 3.6  | 22.9 | 58.7 | 1.2                    | 58.7 | 0.0     | 0.1            | 1.1  | 62.7              | 55.9             |
| Israel             | 4191 | 1.7  | 3.9  | 2.2  | 26.5 | 62.8 | 2.8                    | 62.8 | 0.9     | 0.5            | 1.3  | 71.9              | 53.5             |
| Italy              | 3328 | 1.6  | 12.5 | 2.3  | 29.6 | 53.0 | 1.0                    | 53.0 | 0.0     | 0.2            | 0.9  | 51.8              | 54.4             |
| Japan              | 4735 | 1.0  | 3.2  | 0.7  | 29.7 | 64.8 | 0.6                    | 64.8 | 0.5     | 0.1            | 0.0  | 67.5              | 62.2             |
| Jordan             | 5041 | 3.8  | 4.0  | 3.9  | 34.2 | 53.2 | 0.8                    | 53.2 | 0.3     | 0.0            | 0.5  | 62.5              | 45.0             |
| Korea, Rep. of     | 6112 | 1.3  | 5.6  | 1.3  | 38.6 | 53.0 | 0.2                    | 53.0 | 0.1     | 0.0            | 0.1  | 51.9              | 54.2             |
| Latvia (LSS)       | 2870 | 0.6  | 4.8  | 1.1  | 16.7 | 75.9 | 0.9                    | 75.9 | 0.6     | 0.0            | 0.3  | 80.7              | 71.0             |
| Lithuania          | 2359 | 2.0  | 6.1  | 1.8  | 15.6 | 73.4 | 1.0                    | 73.4 | 0.0     | 0.0            | 1.0  | 79.2              | 67.3             |
| Macedonia, Rep. of | 4022 | 1.4  | 3.6  | 2.2  | 6.5  | 82.8 | 3.5                    | 82.8 | 2.5     | 0.1            | 1.0  | 85.4              | 80.2             |
| Malaysia           | 5577 | 5.7  | 6.8  | 5.7  | 53.9 | 27.3 | 0.6                    | 27.3 | 0.0     | 0.0            | 0.6  | 27.5              | 27.1             |
| Moldova            | 3710 | 1.8  | 7.4  | 2.0  | 11.2 | 74.4 | 3.1                    | 74.4 | 2.5     | 0.2            | 0.4  | 76.3              | 72.3             |
| Morocco            | 5385 | 5.9  | 10.6 | 9.6  | 38.0 | 31.4 | 4.4                    | 31.4 | 1.9     | 0.2            | 2.3  | 31.4              | 31.4             |
| Netherlands        | 2957 | 1.0  | 2.9  | 1.2  | 13.5 | 81.0 | 0.4                    | 81.0 | 0.0     | 0.0            | 0.4  | 83.7              | 78.1             |
| New Zealand        | 3602 | 2.4  | 5.6  | 5.4  | 14.0 | 71.7 | 0.9                    | 71.7 | 0.4     | 0.0            | 0.5  | 73.4              | 70.0             |
| Philippines        | 6598 | 11.9 | 13.6 | 12.0 | 18.0 | 43.7 | 0.8                    | 43.7 | 0.0     | 0.1            | 0.7  | 47.8              | 38.9             |
| Romania            | 3423 | 1.3  | 5.0  | 3.6  | 11.3 | 73.5 | 5.2                    | 73.5 | 4.7     | 0.0            | 0.5  | 75.2              | 71.8             |
| Russian Federation | 4332 | 1.4  | 4.7  | 4.0  | 9.3  | 78.6 | 2.0                    | 78.6 | 1.0     | 0.1            | 0.8  | 80.0              | 77.1             |
| Singapore          | 4966 | 2.2  | 2.6  | 3.6  | 20.2 | 71.0 | 0.4                    | 71.0 | 0.2     | 0.0            | 0.2  | 72.3              | 69.9             |
| Slovak Republic    | 3491 | 0.2  | 6.8  | 0.8  | 7.3  | 83.7 | 1.1                    | 83.7 | 0.7     | 0.0            | 0.3  | 88.1              | 79.3             |
| Slovenia           | 3104 | 0.8  | 7.1  | 0.8  | 7.2  | 82.0 | 2.1                    | 82.0 | 1.8     | 0.0            | 0.3  | 85.1              | 78.6             |
| South Africa       | 8124 | 18.1 | 14.5 | 18.4 | 15.5 | 31.0 | 2.5                    | 31.0 | 0.9     | 0.5            | 1.1  | 33.1              | 28.7             |
| Thailand           | 5732 | 0.8  | 1.7  | 2.1  | 7.7  | 87.6 | 0.2                    | 87.6 | 0.0     | 0.1            | 0.0  | 90.9              | 83.8             |
| Tunisia            | 5041 | 1.4  | 3.2  | 3.6  | 32.0 | 51.0 | 8.8                    | 51.0 | 7.4     | 0.2            | 1.3  | 53.5              | 48.5             |
| Turkey             | 7837 | 1.7  | 2.5  | 1.4  | 14.2 | 79.8 | 0.4                    | 79.8 | 0.0     | 0.0            | 0.4  | 87.0              | 74.5             |
| United States      | 8985 | 2.4  | 5.1  | 4.2  | 11.6 | 76.2 | 0.5                    | 76.2 | 0.0     | 0.1            | 0.4  | 80.0              | 72.5             |
| International Avg. | .    | 2.7  | 5.5  | 3.2  | 18.4 | 68.2 | 2.0                    | 68.2 | 1.2     | 0.1            | 0.7  | 71.0              | 65.3             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Physics  
 Label: Stored energy in two springs ( S012002 - A08 )  
 Item Type = MC Key = B

| COUNTRY            | N    | A    | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 4019 | 7.3  | 76.6 | 5.7  | 10.2 | 0.2                    | 76.6 | 0.0     | 0.0            | 0.1  | 78.0              | 75.1             |
| Belgium (Flemish)  | 5256 | 5.8  | 72.9 | 5.6  | 15.3 | 0.3                    | 72.9 | 0.1     | 0.0            | 0.2  | 73.7              | 72.2             |
| Bulgaria           | 3272 | 9.8  | 61.9 | 13.7 | 13.4 | 1.3                    | 61.9 | 0.2     | 0.1            | 1.0  | 60.0              | 63.6             |
| Canada             | 8730 | 5.3  | 78.2 | 5.3  | 10.9 | 0.2                    | 78.2 | 0.0     | 0.1            | 0.2  | 78.7              | 77.7             |
| Chile              | 5861 | 9.7  | 56.3 | 9.6  | 22.6 | 1.7                    | 56.3 | 0.0     | 0.6            | 1.1  | 53.6              | 59.2             |
| Chinese Taipei     | 5772 | 12.9 | 58.6 | 17.0 | 11.5 | 0.1                    | 58.6 | 0.0     | 0.0            | 0.1  | 55.1              | 62.1             |
| Cyprus             | 3112 | 10.2 | 60.3 | 7.9  | 21.2 | 0.4                    | 60.3 | 0.1     | 0.0            | 0.3  | 55.9              | 64.5             |
| Czech Republic     | 3449 | 7.5  | 67.3 | 6.9  | 17.4 | 0.9                    | 67.3 | 0.1     | 0.0            | 0.8  | 67.0              | 67.6             |
| England            | 2946 | 8.8  | 80.4 | 3.6  | 7.1  | 0.2                    | 80.4 | 0.0     | 0.0            | 0.1  | 78.6              | 82.0             |
| Finland            | 2916 | 6.0  | 71.0 | 4.9  | 17.4 | 0.7                    | 71.0 | 0.0     | 0.0            | 0.7  | 72.3              | 69.6             |
| Hong Kong, SAR     | 5176 | 11.6 | 60.6 | 7.4  | 20.0 | 0.3                    | 60.6 | 0.1     | 0.0            | 0.2  | 59.6              | 61.6             |
| Hungary            | 3178 | 2.4  | 74.4 | 4.8  | 17.5 | 0.9                    | 74.4 | 0.4     | 0.1            | 0.3  | 76.9              | 71.9             |
| Indonesia          | 5832 | 14.5 | 61.7 | 5.4  | 17.7 | 0.7                    | 61.7 | 0.0     | 0.0            | 0.7  | 57.0              | 66.6             |
| Iran, Islamic Rep. | 5289 | 12.0 | 54.2 | 7.1  | 25.3 | 1.4                    | 54.2 | 0.0     | 0.1            | 1.2  | 50.0              | 57.1             |
| Israel             | 4191 | 10.0 | 65.8 | 8.8  | 14.0 | 1.4                    | 65.8 | 0.1     | 0.5            | 0.8  | 65.0              | 66.7             |
| Italy              | 3328 | 7.8  | 70.3 | 3.6  | 17.5 | 0.7                    | 70.3 | 0.0     | 0.2            | 0.6  | 69.1              | 71.6             |
| Japan              | 4735 | 6.1  | 78.5 | 5.1  | 10.2 | 0.1                    | 78.5 | 0.0     | 0.1            | 0.0  | 77.7              | 79.4             |
| Jordan             | 5041 | 11.1 | 62.6 | 5.2  | 20.6 | 0.5                    | 62.6 | 0.3     | 0.0            | 0.2  | 63.3              | 62.0             |
| Korea, Rep. of     | 6112 | 11.2 | 80.3 | 6.0  | 2.6  | 0.0                    | 80.3 | 0.0     | 0.0            | 0.0  | 77.6              | 82.9             |
| Latvia (LSS)       | 2870 | 10.0 | 56.0 | 6.5  | 26.9 | 0.6                    | 56.0 | 0.2     | 0.0            | 0.3  | 57.4              | 54.6             |
| Lithuania          | 2359 | 6.5  | 65.4 | 4.7  | 22.7 | 0.8                    | 65.4 | 0.0     | 0.1            | 0.7  | 70.2              | 60.2             |
| Macedonia, Rep. of | 4022 | 7.4  | 54.2 | 6.2  | 30.3 | 1.9                    | 54.2 | 0.3     | 0.1            | 1.6  | 51.9              | 56.4             |
| Malaysia           | 5577 | 14.5 | 69.3 | 4.7  | 10.7 | 0.7                    | 69.3 | 0.0     | 0.0            | 0.7  | 68.8              | 70.0             |
| Moldova            | 3711 | 13.0 | 36.5 | 5.7  | 43.3 | 1.5                    | 36.5 | 0.3     | 0.2            | 1.0  | 34.4              | 38.9             |
| Morocco            | 5388 | 22.4 | 27.6 | 14.4 | 31.7 | 3.8                    | 27.6 | 0.7     | 0.2            | 2.9  | 25.0              | 29.4             |
| Netherlands        | 2957 | 8.1  | 78.4 | 5.8  | 7.3  | 0.3                    | 78.4 | 0.0     | 0.0            | 0.3  | 78.5              | 78.4             |
| New Zealand        | 3603 | 8.6  | 75.1 | 5.4  | 10.4 | 0.5                    | 75.1 | 0.2     | 0.0            | 0.2  | 76.1              | 74.3             |
| Philippines        | 6599 | 25.3 | 52.7 | 10.5 | 11.1 | 0.3                    | 52.7 | 0.0     | 0.1            | 0.2  | 49.7              | 56.1             |
| Romania            | 3423 | 8.8  | 45.0 | 6.6  | 38.8 | 0.9                    | 45.0 | 0.4     | 0.0            | 0.4  | 46.1              | 44.0             |
| Russian Federation | 4331 | 3.4  | 68.9 | 3.1  | 23.9 | 0.6                    | 68.9 | 0.2     | 0.2            | 0.2  | 70.8              | 66.9             |
| Singapore          | 4966 | 5.1  | 79.5 | 3.1  | 12.2 | 0.2                    | 79.5 | 0.0     | 0.0            | 0.1  | 79.8              | 79.2             |
| Slovak Republic    | 3491 | 23.3 | 52.1 | 6.1  | 17.2 | 1.3                    | 52.1 | 0.1     | 0.0            | 1.2  | 52.8              | 51.3             |
| Slovenia           | 3104 | 10.2 | 76.0 | 5.3  | 8.1  | 0.4                    | 76.0 | 0.1     | 0.0            | 0.3  | 74.4              | 77.6             |
| South Africa       | 8124 | 26.2 | 41.6 | 16.8 | 14.0 | 1.4                    | 41.6 | 0.4     | 0.6            | 0.4  | 37.2              | 46.6             |
| Thailand           | 5732 | 9.2  | 72.5 | 3.9  | 14.2 | 0.2                    | 72.5 | 0.0     | 0.1            | 0.1  | 72.2              | 72.9             |
| Tunisia            | 5045 | 12.1 | 35.2 | 6.1  | 43.7 | 2.9                    | 35.2 | 1.8     | 0.2            | 0.9  | 31.4              | 39.1             |
| Turkey             | 7837 | 10.9 | 60.9 | 7.4  | 20.1 | 0.7                    | 60.9 | 0.0     | 0.0            | 0.7  | 58.5              | 62.5             |
| United States      | 8985 | 7.7  | 80.6 | 5.0  | 6.4  | 0.3                    | 80.6 | 0.0     | 0.1            | 0.2  | 78.9              | 82.3             |
| International Avg. | .    | 10.6 | 63.7 | 6.9  | 18.0 | 0.8                    | 63.7 | 0.2     | 0.1            | 0.6  | 62.7              | 64.6             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Chemistry  
 Label: Fanning a wood fire ( S012003 - A09 )  
 Item Type = MC Key = B

| COUNTRY            | N    | A    | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 4019 | 1.8  | 86.2 | 1.4  | 10.1 | 0.4                    | 86.2 | 0.0     | 0.0            | 0.4  | 83.7              | 88.9             |
| Belgium (Flemish)  | 5256 | 3.4  | 85.2 | 1.4  | 9.3  | 0.7                    | 85.2 | 0.0     | 0.0            | 0.7  | 83.5              | 87.0             |
| Bulgaria           | 3272 | 2.1  | 91.1 | 2.3  | 3.8  | 0.8                    | 91.1 | 0.2     | 0.1            | 0.4  | 90.6              | 91.5             |
| Canada             | 8730 | 1.8  | 86.9 | 1.5  | 9.5  | 0.4                    | 86.9 | 0.0     | 0.1            | 0.3  | 85.4              | 88.5             |
| Chile              | 5861 | 11.9 | 57.4 | 2.3  | 26.4 | 1.9                    | 57.4 | 0.0     | 0.8            | 1.1  | 52.8              | 62.1             |
| Chinese Taipei     | 5772 | 4.6  | 87.9 | 1.0  | 6.4  | 0.1                    | 87.9 | 0.0     | 0.0            | 0.1  | 85.7              | 90.1             |
| Cyprus             | 3113 | 7.5  | 75.5 | 3.8  | 12.5 | 0.6                    | 75.5 | 0.1     | 0.0            | 0.5  | 73.4              | 77.5             |
| Czech Republic     | 3449 | 3.6  | 83.9 | 2.4  | 9.6  | 0.4                    | 83.9 | 0.1     | 0.0            | 0.3  | 79.3              | 88.9             |
| England            | 2946 | 1.6  | 86.5 | 1.3  | 10.2 | 0.3                    | 86.5 | 0.0     | 0.0            | 0.3  | 82.5              | 90.4             |
| Finland            | 2916 | 2.9  | 90.7 | 1.2  | 4.9  | 0.4                    | 90.7 | 0.0     | 0.0            | 0.4  | 90.6              | 90.7             |
| Hong Kong, SAR     | 5176 | 4.0  | 88.5 | 1.3  | 5.9  | 0.3                    | 88.5 | 0.0     | 0.0            | 0.3  | 87.0              | 89.9             |
| Hungary            | 3178 | 0.8  | 92.6 | 0.5  | 5.1  | 0.9                    | 92.6 | 0.4     | 0.1            | 0.4  | 91.1              | 94.1             |
| Indonesia          | 5832 | 12.0 | 59.5 | 5.1  | 22.7 | 0.8                    | 59.5 | 0.0     | 0.0            | 0.7  | 58.0              | 61.0             |
| Iran, Islamic Rep. | 5289 | 5.1  | 82.8 | 2.4  | 8.3  | 1.4                    | 82.8 | 0.0     | 0.1            | 1.3  | 77.5              | 86.5             |
| Israel             | 4191 | 7.5  | 73.0 | 3.1  | 14.5 | 1.8                    | 73.0 | 0.1     | 0.6            | 1.2  | 73.0              | 73.1             |
| Italy              | 3328 | 5.0  | 82.6 | 2.4  | 9.3  | 0.7                    | 82.6 | 0.0     | 0.2            | 0.5  | 81.8              | 83.5             |
| Japan              | 4735 | 1.0  | 93.8 | 0.7  | 4.4  | 0.2                    | 93.8 | 0.1     | 0.1            | 0.0  | 93.7              | 93.9             |
| Jordan             | 5041 | 6.3  | 70.0 | 6.9  | 15.9 | 0.9                    | 70.0 | 0.1     | 0.0            | 0.8  | 70.8              | 69.3             |
| Korea, Rep. of     | 6112 | 1.4  | 81.2 | 1.5  | 15.9 | 0.1                    | 81.2 | 0.0     | 0.0            | 0.0  | 80.2              | 82.2             |
| Latvia (LSS)       | 2870 | 4.5  | 78.2 | 3.6  | 12.8 | 0.8                    | 78.2 | 0.3     | 0.0            | 0.4  | 74.0              | 82.7             |
| Lithuania          | 2359 | 5.5  | 64.7 | 2.6  | 26.1 | 1.1                    | 64.7 | 0.0     | 0.1            | 0.9  | 62.8              | 66.7             |
| Macedonia, Rep. of | 4022 | 7.9  | 70.4 | 5.6  | 13.8 | 2.3                    | 70.4 | 0.2     | 0.2            | 1.9  | 69.1              | 71.7             |
| Malaysia           | 5577 | 4.1  | 76.2 | 1.5  | 17.6 | 0.6                    | 76.2 | 0.0     | 0.0            | 0.6  | 75.8              | 76.7             |
| Moldova            | 3711 | 22.0 | 62.6 | 2.9  | 11.3 | 1.2                    | 62.6 | 0.4     | 0.2            | 0.5  | 62.7              | 62.5             |
| Morocco            | 5389 | 15.5 | 41.0 | 11.1 | 28.7 | 3.7                    | 41.0 | 0.7     | 0.5            | 2.5  | 40.3              | 41.5             |
| Netherlands        | 2957 | 1.8  | 87.0 | 3.3  | 7.5  | 0.3                    | 87.0 | 0.0     | 0.0            | 0.3  | 86.2              | 87.9             |
| New Zealand        | 3603 | 2.5  | 84.0 | 2.1  | 11.0 | 0.5                    | 84.0 | 0.1     | 0.0            | 0.4  | 82.5              | 85.5             |
| Philippines        | 6599 | 14.4 | 45.8 | 13.3 | 26.1 | 0.5                    | 45.8 | 0.0     | 0.1            | 0.4  | 44.6              | 47.1             |
| Romania            | 3423 | 5.9  | 74.1 | 5.7  | 12.8 | 1.6                    | 74.1 | 1.0     | 0.0            | 0.6  | 73.2              | 75.1             |
| Russian Federation | 4331 | 2.6  | 86.7 | 1.2  | 8.4  | 1.1                    | 86.7 | 0.2     | 0.2            | 0.7  | 85.2              | 88.4             |
| Singapore          | 4966 | 2.9  | 80.6 | 2.8  | 13.5 | 0.2                    | 80.6 | 0.0     | 0.0            | 0.2  | 77.4              | 83.6             |
| Slovak Republic    | 3491 | 1.7  | 85.1 | 2.9  | 9.7  | 0.6                    | 85.1 | 0.1     | 0.1            | 0.4  | 83.0              | 87.3             |
| Slovenia           | 3104 | 2.5  | 79.4 | 2.2  | 15.4 | 0.5                    | 79.4 | 0.1     | 0.0            | 0.4  | 78.1              | 80.8             |
| South Africa       | 8123 | 24.7 | 38.2 | 13.4 | 21.6 | 2.1                    | 38.2 | 0.3     | 0.6            | 1.1  | 37.7              | 38.9             |
| Thailand           | 5732 | 8.2  | 51.5 | 4.4  | 35.6 | 0.3                    | 51.5 | 0.0     | 0.1            | 0.2  | 49.1              | 54.3             |
| Tunisia            | 5045 | 4.7  | 61.3 | 5.3  | 20.6 | 8.1                    | 61.3 | 6.4     | 0.3            | 1.4  | 57.1              | 65.6             |
| Turkey             | 7837 | 10.9 | 51.9 | 5.3  | 30.8 | 1.1                    | 51.9 | 0.0     | 0.0            | 1.0  | 49.7              | 53.6             |
| United States      | 8985 | 2.8  | 80.2 | 2.2  | 14.2 | 0.7                    | 80.2 | 0.0     | 0.1            | 0.6  | 77.0              | 83.3             |
| International Avg. | .    | 6.0  | 75.1 | 3.5  | 14.3 | 1.1                    | 75.1 | 0.3     | 0.1            | 0.6  | 73.3              | 76.9             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Physics  
 Label: Seeing person in a dark room ( S012004 - A10 )  
 Item Type = MC Key = A

| COUNTRY            | N    | A    | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 4019 | 78.4 | 8.4  | 5.5  | 7.3  | 0.5                    | 78.4 | 0.0     | 0.0            | 0.4  | 77.4              | 79.3             |
| Belgium (Flemish)  | 5256 | 70.7 | 9.0  | 5.1  | 14.1 | 0.9                    | 70.7 | 0.2     | 0.0            | 0.7  | 67.8              | 73.6             |
| Bulgaria           | 3272 | 60.9 | 17.1 | 10.5 | 8.8  | 2.7                    | 60.9 | 0.5     | 0.1            | 2.1  | 58.9              | 63.2             |
| Canada             | 8730 | 76.2 | 9.8  | 7.0  | 6.7  | 0.3                    | 76.2 | 0.0     | 0.1            | 0.2  | 75.4              | 77.0             |
| Chile              | 5861 | 65.8 | 10.1 | 12.8 | 8.4  | 2.9                    | 65.8 | 0.0     | 0.9            | 2.0  | 64.9              | 66.6             |
| Chinese Taipei     | 5772 | 79.4 | 3.9  | 13.0 | 3.4  | 0.2                    | 79.4 | 0.0     | 0.0            | 0.2  | 77.2              | 81.7             |
| Cyprus             | 3112 | 66.0 | 13.3 | 12.9 | 7.1  | 0.8                    | 66.0 | 0.1     | 0.0            | 0.7  | 65.4              | 66.5             |
| Czech Republic     | 3450 | 71.1 | 6.9  | 11.0 | 9.8  | 1.2                    | 71.1 | 0.1     | 0.0            | 1.1  | 69.9              | 72.4             |
| England            | 2946 | 81.9 | 7.1  | 4.2  | 6.7  | 0.1                    | 81.9 | 0.0     | 0.0            | 0.1  | 79.8              | 83.8             |
| Finland            | 2916 | 54.9 | 15.8 | 22.9 | 5.6  | 0.8                    | 54.9 | 0.0     | 0.0            | 0.8  | 50.5              | 59.3             |
| Hong Kong, SAR     | 5176 | 72.9 | 4.2  | 18.0 | 4.4  | 0.5                    | 72.9 | 0.1     | 0.0            | 0.4  | 70.8              | 75.0             |
| Hungary            | 3178 | 65.7 | 7.9  | 16.3 | 8.4  | 1.7                    | 65.7 | 0.4     | 0.1            | 1.1  | 65.6              | 65.8             |
| Indonesia          | 5833 | 64.8 | 6.8  | 21.7 | 5.8  | 0.9                    | 64.8 | 0.0     | 0.0            | 0.9  | 64.7              | 64.9             |
| Iran, Islamic Rep. | 5289 | 72.9 | 7.9  | 11.0 | 6.1  | 2.1                    | 72.9 | 0.0     | 0.1            | 1.9  | 67.8              | 76.4             |
| Israel             | 4191 | 69.7 | 10.1 | 8.0  | 9.3  | 3.0                    | 69.7 | 0.2     | 0.6            | 2.1  | 68.8              | 70.7             |
| Italy              | 3328 | 69.1 | 12.0 | 11.9 | 5.4  | 1.6                    | 69.1 | 0.0     | 0.2            | 1.4  | 69.9              | 68.3             |
| Japan              | 4735 | 60.4 | 7.5  | 24.8 | 7.1  | 0.3                    | 60.4 | 0.0     | 0.1            | 0.2  | 59.3              | 61.5             |
| Jordan             | 5042 | 68.3 | 11.8 | 10.4 | 8.1  | 1.4                    | 68.3 | 0.2     | 0.1            | 1.2  | 66.1              | 70.1             |
| Korea, Rep. of     | 6112 | 70.3 | 7.7  | 18.3 | 3.5  | 0.1                    | 70.3 | 0.0     | 0.0            | 0.1  | 67.2              | 73.4             |
| Latvia (LSS)       | 2870 | 71.4 | 9.3  | 8.4  | 10.0 | 0.9                    | 71.4 | 0.1     | 0.0            | 0.7  | 67.4              | 75.5             |
| Lithuania          | 2359 | 67.7 | 13.0 | 9.9  | 7.2  | 2.2                    | 67.7 | 0.0     | 0.1            | 2.0  | 66.8              | 68.8             |
| Macedonia, Rep. of | 4022 | 66.6 | 8.8  | 14.8 | 6.9  | 2.8                    | 66.6 | 0.1     | 0.3            | 2.5  | 68.4              | 64.9             |
| Malaysia           | 5577 | 39.0 | 10.3 | 43.8 | 5.8  | 1.0                    | 39.0 | 0.0     | 0.0            | 1.0  | 34.9              | 43.9             |
| Moldova            | 3710 | 60.4 | 12.2 | 14.4 | 11.5 | 1.4                    | 60.4 | 0.2     | 0.2            | 1.0  | 58.8              | 62.4             |
| Morocco            | 5381 | 47.0 | 16.0 | 16.9 | 15.7 | 4.3                    | 47.0 | 0.5     | 0.6            | 3.2  | 45.0              | 48.5             |
| Netherlands        | 2957 | 76.2 | 8.2  | 10.9 | 4.5  | 0.2                    | 76.2 | 0.0     | 0.0            | 0.2  | 78.1              | 74.1             |
| New Zealand        | 3601 | 76.5 | 9.5  | 6.3  | 7.2  | 0.5                    | 76.5 | 0.1     | 0.0            | 0.3  | 76.5              | 76.5             |
| Philippines        | 6599 | 57.9 | 12.4 | 12.2 | 16.9 | 0.6                    | 57.9 | 0.0     | 0.1            | 0.5  | 61.0              | 54.4             |
| Romania            | 3424 | 69.2 | 11.3 | 8.7  | 9.5  | 1.2                    | 69.2 | 0.2     | 0.0            | 1.0  | 69.3              | 69.1             |
| Russian Federation | 4332 | 56.3 | 11.2 | 12.3 | 17.8 | 2.5                    | 56.3 | 0.3     | 0.2            | 2.0  | 54.1              | 58.6             |
| Singapore          | 4966 | 85.6 | 3.8  | 6.9  | 3.5  | 0.2                    | 85.6 | 0.0     | 0.0            | 0.2  | 85.4              | 85.8             |
| Slovak Republic    | 3491 | 64.1 | 9.0  | 12.0 | 13.6 | 1.2                    | 64.1 | 0.0     | 0.1            | 1.1  | 62.0              | 66.3             |
| Slovenia           | 3104 | 78.5 | 6.6  | 6.0  | 7.9  | 1.0                    | 78.5 | 0.1     | 0.1            | 0.9  | 78.6              | 78.3             |
| South Africa       | 8124 | 38.8 | 19.3 | 26.5 | 13.0 | 2.4                    | 38.8 | 0.3     | 0.9            | 1.2  | 38.3              | 39.4             |
| Thailand           | 5732 | 63.4 | 7.6  | 18.3 | 10.2 | 0.5                    | 63.4 | 0.0     | 0.1            | 0.4  | 64.5              | 62.0             |
| Tunisia            | 5045 | 68.7 | 11.1 | 10.1 | 6.0  | 4.1                    | 68.7 | 2.2     | 0.4            | 1.6  | 66.0              | 71.5             |
| Turkey             | 7838 | 62.8 | 11.7 | 11.4 | 12.9 | 1.1                    | 62.8 | 0.0     | 0.0            | 1.1  | 62.0              | 63.4             |
| United States      | 8985 | 78.1 | 8.9  | 6.9  | 5.9  | 0.3                    | 78.1 | 0.0     | 0.1            | 0.2  | 78.2              | 77.9             |
| International Avg. | .    | 67.0 | 9.9  | 13.2 | 8.5  | 1.3                    | 67.0 | 0.2     | 0.1            | 1.0  | 65.9              | 68.2             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Environmental and Resource Issues  
 Label: Overgrazing by livestock ( S012005 - All )  
 Item Type = MC Key = C

| COUNTRY            | N    | A    | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 4019 | 12.2 | 6.6  | 77.8 | 3.0  | 0.4                    | 77.8 | 0.0     | 0.0            | 0.4  | 75.6              | 80.2             |
| Belgium (Flemish)  | 5256 | 16.5 | 9.9  | 67.1 | 5.2  | 1.3                    | 67.1 | 0.1     | 0.0            | 1.2  | 64.3              | 69.9             |
| Bulgaria           | 3272 | 10.5 | 22.0 | 64.7 | 1.1  | 1.6                    | 64.7 | 0.8     | 0.1            | 0.7  | 61.0              | 68.8             |
| Canada             | 8730 | 22.1 | 11.4 | 60.0 | 5.7  | 0.7                    | 60.0 | 0.0     | 0.1            | 0.7  | 58.8              | 61.4             |
| Chile              | 5861 | 28.5 | 8.1  | 53.7 | 5.8  | 3.9                    | 53.7 | 0.0     | 1.2            | 2.6  | 51.4              | 55.9             |
| Chinese Taipei     | 5772 | 2.9  | 5.0  | 90.6 | 1.3  | 0.1                    | 90.6 | 0.1     | 0.0            | 0.1  | 89.9              | 91.3             |
| Cyprus             | 3108 | 11.0 | 37.1 | 44.9 | 5.8  | 1.2                    | 44.9 | 0.1     | 0.0            | 1.1  | 42.2              | 47.6             |
| Czech Republic     | 3450 | 10.0 | 9.0  | 75.2 | 4.8  | 1.1                    | 75.2 | 0.3     | 0.1            | 0.7  | 71.3              | 79.3             |
| England            | 2946 | 14.4 | 9.4  | 68.9 | 6.7  | 0.7                    | 68.9 | 0.0     | 0.0            | 0.6  | 67.0              | 70.6             |
| Finland            | 2916 | 12.6 | 17.7 | 62.8 | 6.3  | 0.7                    | 62.8 | 0.0     | 0.0            | 0.7  | 64.1              | 61.4             |
| Hong Kong, SAR     | 5176 | 17.3 | 22.0 | 56.0 | 4.1  | 0.5                    | 56.0 | 0.1     | 0.0            | 0.4  | 53.9              | 58.1             |
| Hungary            | 3178 | 18.7 | 12.9 | 60.2 | 5.4  | 2.8                    | 60.2 | 0.7     | 0.2            | 1.9  | 55.9              | 64.8             |
| Indonesia          | 5833 | 14.0 | 21.3 | 60.7 | 3.1  | 0.9                    | 60.7 | 0.0     | 0.0            | 0.8  | 60.4              | 61.0             |
| Iran, Islamic Rep. | 5289 | 6.5  | 19.7 | 68.3 | 3.5  | 2.0                    | 68.3 | 0.0     | 0.1            | 1.8  | 65.5              | 70.2             |
| Israel             | 4191 | 23.3 | 36.0 | 29.2 | 5.7  | 5.8                    | 29.2 | 0.1     | 0.7            | 5.0  | 29.5              | 28.9             |
| Italy              | 3328 | 22.5 | 10.5 | 59.3 | 6.1  | 1.5                    | 59.3 | 0.0     | 0.2            | 1.3  | 57.2              | 61.6             |
| Japan              | 4735 | 11.4 | 10.9 | 62.7 | 14.8 | 0.3                    | 62.7 | 0.0     | 0.1            | 0.2  | 62.6              | 62.8             |
| Jordan             | 5041 | 7.0  | 18.9 | 66.2 | 6.8  | 1.0                    | 66.2 | 0.3     | 0.1            | 0.7  | 68.3              | 64.3             |
| Korea, Rep. of     | .    | .    | .    | .    | .    | .                      | .    | .       | .              | .    | .                 | .                |
| Latvia (LSS)       | 2870 | 13.7 | 17.3 | 61.1 | 6.1  | 1.8                    | 61.1 | 0.3     | 0.0            | 1.5  | 59.4              | 62.9             |
| Lithuania          | 2359 | 17.3 | 25.0 | 45.2 | 9.5  | 3.0                    | 45.2 | 0.0     | 0.2            | 2.9  | 42.7              | 47.9             |
| Macedonia, Rep. of | 4022 | 16.4 | 20.3 | 53.8 | 6.0  | 3.5                    | 53.8 | 0.3     | 0.4            | 2.8  | 54.4              | 53.3             |
| Malaysia           | 5577 | 16.2 | 6.2  | 73.9 | 2.9  | 0.8                    | 73.9 | 0.0     | 0.0            | 0.7  | 73.8              | 74.1             |
| Moldova            | 3710 | 14.8 | 22.3 | 46.4 | 14.1 | 2.4                    | 46.4 | 0.4     | 0.4            | 1.6  | 45.3              | 47.6             |
| Morocco            | 5381 | 12.0 | 27.3 | 44.3 | 11.9 | 4.5                    | 44.3 | 0.6     | 0.8            | 3.0  | 43.2              | 45.0             |
| Netherlands        | 2957 | 7.3  | 7.2  | 74.7 | 10.5 | 0.3                    | 74.7 | 0.0     | 0.0            | 0.3  | 73.2              | 76.3             |
| New Zealand        | 3601 | 20.8 | 11.0 | 61.2 | 5.9  | 1.0                    | 61.2 | 0.1     | 0.1            | 0.8  | 61.1              | 61.3             |
| Philippines        | 6599 | 15.9 | 27.7 | 46.8 | 8.7  | 0.8                    | 46.8 | 0.0     | 0.2            | 0.6  | 49.0              | 44.3             |
| Romania            | 3424 | 12.5 | 12.7 | 67.5 | 5.1  | 2.2                    | 67.5 | 1.0     | 0.0            | 1.1  | 67.3              | 67.8             |
| Russian Federation | 4332 | 10.6 | 16.8 | 69.6 | 1.0  | 2.1                    | 69.6 | 0.3     | 0.3            | 1.4  | 68.4              | 71.0             |
| Singapore          | 4966 | 10.4 | 15.6 | 69.9 | 3.7  | 0.4                    | 69.9 | 0.0     | 0.0            | 0.3  | 68.9              | 70.9             |
| Slovak Republic    | 3491 | 11.2 | 19.3 | 60.2 | 7.7  | 1.5                    | 60.2 | 0.1     | 0.1            | 1.3  | 60.7              | 59.8             |
| Slovenia           | 3104 | 14.2 | 12.8 | 65.7 | 6.0  | 1.3                    | 65.7 | 0.1     | 0.1            | 1.2  | 63.1              | 68.5             |
| South Africa       | 8124 | 18.5 | 20.7 | 44.6 | 13.7 | 2.5                    | 44.6 | 0.2     | 1.1            | 1.2  | 43.5              | 45.8             |
| Thailand           | 5732 | 8.5  | 17.4 | 68.0 | 5.7  | 0.4                    | 68.0 | 0.0     | 0.2            | 0.2  | 69.4              | 66.4             |
| Tunisia            | 5045 | 5.3  | 20.5 | 63.7 | 3.3  | 7.2                    | 63.7 | 5.0     | 0.4            | 1.8  | 59.2              | 68.3             |
| Turkey             | 7838 | 11.5 | 26.5 | 49.6 | 11.0 | 1.3                    | 49.6 | 0.0     | 0.0            | 1.3  | 49.9              | 49.4             |
| United States      | 8985 | 18.5 | 14.0 | 62.3 | 4.7  | 0.5                    | 62.3 | 0.0     | 0.1            | 0.4  | 61.0              | 63.7             |
| International Avg. | .    | 14.0 | 17.0 | 61.0 | 6.3  | 1.7                    | 61.0 | 0.3     | 0.2            | 1.2  | 59.8              | 62.2             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Earth Science  
 Label: Changes in river shape/speed ( S012006 - A12 )  
 Item Type = MC Key = C

| COUNTRY            | N    | A    | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 4019 | 6.7  | 19.0 | 58.8 | 14.7 | 0.8                    | 58.8 | 0.1     | 0.0            | 0.7  | 56.0              | 61.9             |
| Belgium (Flemish)  | 5256 | 4.0  | 13.1 | 75.2 | 7.2  | 0.5                    | 75.2 | 0.1     | 0.0            | 0.4  | 72.9              | 77.5             |
| Bulgaria           | 3272 | 6.1  | 17.7 | 63.8 | 8.9  | 3.5                    | 63.8 | 0.9     | 0.1            | 2.5  | 62.0              | 65.7             |
| Canada             | 8730 | 7.8  | 19.0 | 57.6 | 15.0 | 0.7                    | 57.6 | 0.0     | 0.1            | 0.6  | 55.3              | 60.0             |
| Chile              | 5861 | 7.7  | 24.7 | 45.8 | 16.6 | 5.2                    | 45.8 | 0.0     | 1.5            | 3.6  | 42.0              | 49.5             |
| Chinese Taipei     | 5772 | 8.3  | 12.2 | 71.0 | 8.2  | 0.3                    | 71.0 | 0.1     | 0.0            | 0.2  | 72.0              | 70.1             |
| Cyprus             | 3095 | 9.4  | 31.4 | 40.7 | 15.5 | 3.1                    | 40.7 | 0.1     | 0.0            | 2.9  | 38.1              | 43.2             |
| Czech Republic     | 3450 | 3.6  | 15.5 | 72.8 | 6.8  | 1.2                    | 72.8 | 0.2     | 0.2            | 0.9  | 68.6              | 77.3             |
| England            | 2946 | 4.7  | 21.9 | 59.6 | 13.0 | 0.8                    | 59.6 | 0.0     | 0.0            | 0.7  | 57.3              | 61.6             |
| Finland            | 2916 | 4.9  | 14.3 | 64.4 | 15.0 | 1.4                    | 64.4 | 0.0     | 0.0            | 1.4  | 63.9              | 65.0             |
| Hong Kong, SAR     | 5176 | 12.3 | 28.7 | 40.7 | 17.5 | 0.8                    | 40.7 | 0.1     | 0.0            | 0.6  | 40.7              | 40.7             |
| Hungary            | 3178 | 2.3  | 14.2 | 74.3 | 7.3  | 1.9                    | 74.3 | 0.4     | 0.3            | 1.3  | 72.1              | 76.4             |
| Indonesia          | 5833 | 12.5 | 26.4 | 52.8 | 6.9  | 1.5                    | 52.8 | 0.0     | 0.0            | 1.4  | 51.2              | 54.4             |
| Iran, Islamic Rep. | 5289 | 5.3  | 20.5 | 54.5 | 16.9 | 2.8                    | 54.5 | 0.0     | 0.2            | 2.6  | 45.7              | 60.5             |
| Israel             | 4191 | 5.5  | 20.5 | 59.4 | 10.5 | 4.0                    | 59.4 | 0.2     | 0.8            | 3.0  | 58.9              | 60.0             |
| Italy              | 3328 | 5.4  | 18.6 | 61.4 | 12.3 | 2.2                    | 61.4 | 0.0     | 0.2            | 2.0  | 61.3              | 61.5             |
| Japan              | 4735 | 2.7  | 9.4  | 82.9 | 4.7  | 0.2                    | 82.9 | 0.0     | 0.1            | 0.1  | 83.5              | 82.3             |
| Jordan             | 5042 | 10.7 | 30.0 | 33.3 | 24.2 | 1.8                    | 33.3 | 0.2     | 0.1            | 1.5  | 31.3              | 35.1             |
| Korea, Rep. of     | 6112 | 3.7  | 29.3 | 60.5 | 6.4  | 0.1                    | 60.5 | 0.0     | 0.0            | 0.1  | 60.6              | 60.4             |
| Latvia (LSS)       | 2870 | 6.2  | 16.4 | 62.9 | 12.8 | 1.7                    | 62.9 | 0.5     | 0.0            | 1.2  | 61.4              | 64.5             |
| Lithuania          | 2359 | 9.3  | 23.1 | 45.5 | 18.5 | 3.5                    | 45.5 | 0.0     | 0.2            | 3.3  | 41.8              | 49.4             |
| Macedonia, Rep. of | 4022 | 11.1 | 19.8 | 49.0 | 16.3 | 3.9                    | 49.0 | 0.4     | 0.5            | 3.0  | 49.3              | 48.6             |
| Malaysia           | 5577 | 6.0  | 27.8 | 59.8 | 4.8  | 1.5                    | 59.8 | 0.0     | 0.1            | 1.5  | 60.3              | 59.2             |
| Moldova            | 3710 | 12.9 | 14.5 | 58.7 | 11.6 | 2.3                    | 58.7 | 0.2     | 0.4            | 1.7  | 56.9              | 60.7             |
| Morocco            | 5384 | 16.9 | 41.2 | 24.3 | 12.7 | 4.9                    | 24.3 | 0.5     | 1.0            | 3.4  | 23.1              | 25.1             |
| Netherlands        | 2957 | 4.9  | 16.6 | 70.2 | 8.0  | 0.3                    | 70.2 | 0.0     | 0.0            | 0.3  | 68.7              | 71.9             |
| New Zealand        | 3601 | 8.4  | 20.9 | 53.4 | 16.3 | 1.0                    | 53.4 | 0.2     | 0.1            | 0.7  | 52.7              | 54.2             |
| Philippines        | 6599 | 13.9 | 37.0 | 34.0 | 13.6 | 1.4                    | 34.0 | 0.0     | 0.2            | 1.3  | 34.8              | 33.2             |
| Romania            | 3422 | 4.9  | 12.0 | 68.9 | 11.6 | 2.6                    | 68.9 | 1.4     | 0.1            | 1.1  | 67.1              | 70.6             |
| Russian Federation | 4332 | 1.8  | 5.3  | 81.3 | 9.7  | 1.9                    | 81.3 | 0.3     | 0.3            | 1.2  | 78.6              | 84.3             |
| Singapore          | 4966 | 4.9  | 20.3 | 65.7 | 8.7  | 0.3                    | 65.7 | 0.0     | 0.0            | 0.3  | 63.8              | 67.5             |
| Slovak Republic    | 3491 | 4.2  | 10.9 | 76.7 | 7.0  | 1.2                    | 76.7 | 0.1     | 0.1            | 1.0  | 77.2              | 76.1             |
| Slovenia           | 3104 | 4.5  | 12.7 | 71.8 | 9.7  | 1.3                    | 71.8 | 0.1     | 0.1            | 1.1  | 70.1              | 73.6             |
| South Africa       | 8124 | 10.7 | 37.1 | 27.2 | 21.6 | 3.4                    | 27.2 | 0.2     | 1.2            | 1.9  | 27.4              | 27.0             |
| Thailand           | 5732 | 3.2  | 27.7 | 56.5 | 12.0 | 0.5                    | 56.5 | 0.0     | 0.2            | 0.3  | 55.6              | 57.7             |
| Tunisia            | 5037 | 3.0  | 21.9 | 47.0 | 21.1 | 7.0                    | 47.0 | 4.8     | 0.5            | 1.7  | 42.0              | 52.2             |
| Turkey             | 7838 | 10.8 | 28.2 | 39.0 | 19.2 | 2.7                    | 39.0 | 0.0     | 0.0            | 2.7  | 39.6              | 38.6             |
| United States      | 8985 | 7.2  | 18.7 | 56.4 | 17.0 | 0.7                    | 56.4 | 0.0     | 0.1            | 0.7  | 54.4              | 58.3             |
| International Avg. | .    | 7.1  | 21.0 | 57.3 | 12.6 | 2.0                    | 57.3 | 0.3     | 0.2            | 1.4  | 55.7              | 58.8             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Earth Science  
 Label: Layers of Earth ( S012007 - B01 )  
 Item Type = MC Key = C

| COUNTRY            | N    | A    | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 2022 | 7.3  | 2.0  | 89.6 | 0.9  | 0.3                    | 89.6 | 0.1     | 0.0            | 0.2  | 85.8              | 93.6             |
| Belgium (Flemish)  | 2620 | 8.0  | 2.2  | 89.0 | 0.6  | 0.2                    | 89.0 | 0.1     | 0.0            | 0.1  | 88.1              | 89.9             |
| Bulgaria           | 1644 | 3.6  | 1.1  | 94.0 | 0.5  | 0.7                    | 94.0 | 0.1     | 0.1            | 0.5  | 93.4              | 94.7             |
| Canada             | 4356 | 3.0  | 2.1  | 94.2 | 0.7  | 0.0                    | 94.2 | 0.0     | 0.0            | 0.0  | 91.7              | 96.6             |
| Chile              | 2931 | 13.6 | 4.0  | 74.2 | 5.5  | 2.8                    | 74.2 | 0.0     | 0.3            | 2.5  | 69.1              | 79.2             |
| Chinese Taipei     | 2872 | 10.8 | 3.3  | 84.0 | 1.9  | 0.1                    | 84.0 | 0.0     | 0.0            | 0.1  | 79.0              | 88.9             |
| Cyprus             | 1557 | 15.1 | 5.2  | 76.7 | 2.4  | 0.7                    | 76.7 | 0.1     | 0.0            | 0.6  | 73.0              | 80.2             |
| Czech Republic     | 1704 | 5.8  | 1.4  | 90.7 | 1.4  | 0.7                    | 90.7 | 0.1     | 0.0            | 0.6  | 86.6              | 94.8             |
| England            | 1467 | 4.3  | 1.0  | 93.0 | 0.6  | 1.1                    | 93.0 | 0.0     | 0.0            | 1.1  | 91.0              | 95.0             |
| Finland            | 1456 | 3.7  | 1.6  | 93.2 | 0.9  | 0.7                    | 93.2 | 0.0     | 0.0            | 0.7  | 90.6              | 95.8             |
| Hong Kong, SAR     | 2577 | 6.2  | 4.6  | 87.6 | 1.2  | 0.4                    | 87.6 | 0.0     | 0.0            | 0.4  | 83.9              | 91.1             |
| Hungary            | 1588 | 4.1  | 2.0  | 91.7 | 1.4  | 0.8                    | 91.7 | 0.1     | 0.1            | 0.6  | 90.0              | 93.3             |
| Indonesia          | 2928 | 24.1 | 6.3  | 64.0 | 4.4  | 1.2                    | 64.0 | 0.0     | 0.0            | 1.1  | 62.8              | 65.3             |
| Iran, Islamic Rep. | 2651 | 13.2 | 7.1  | 72.4 | 4.9  | 2.5                    | 72.4 | 0.0     | 0.0            | 2.5  | 70.5              | 73.8             |
| Israel             | 2103 | 11.7 | 4.4  | 79.7 | 2.7  | 1.5                    | 79.7 | 0.0     | 0.2            | 1.3  | 77.2              | 82.3             |
| Italy              | 1670 | 4.8  | 2.6  | 91.4 | 0.8  | 0.3                    | 91.4 | 0.0     | 0.1            | 0.3  | 90.0              | 93.0             |
| Japan              | 2369 | 7.8  | 2.0  | 89.0 | 1.1  | 0.2                    | 89.0 | 0.1     | 0.0            | 0.1  | 85.0              | 93.0             |
| Jordan             | 2523 | 9.0  | 5.5  | 78.7 | 5.8  | 1.0                    | 78.7 | 0.4     | 0.0            | 0.6  | 77.8              | 79.5             |
| Korea, Rep. of     | 3055 | 9.8  | 4.7  | 85.0 | 0.4  | 0.1                    | 85.0 | 0.0     | 0.0            | 0.1  | 79.8              | 90.0             |
| Latvia (LSS)       | 1428 | 9.3  | 5.9  | 83.3 | 1.1  | 0.4                    | 83.3 | 0.0     | 0.0            | 0.4  | 82.0              | 84.6             |
| Lithuania          | 1176 | 10.1 | 4.2  | 83.4 | 1.9  | 0.4                    | 83.4 | 0.0     | 0.0            | 0.4  | 80.3              | 86.4             |
| Macedonia, Rep. of | 2012 | 13.1 | 4.6  | 77.2 | 2.6  | 2.5                    | 77.2 | 0.1     | 0.2            | 2.3  | 78.1              | 76.4             |
| Malaysia           | 2781 | 14.2 | 5.4  | 78.3 | 1.6  | 0.4                    | 78.3 | 0.0     | 0.0            | 0.4  | 74.5              | 83.0             |
| Moldova            | 1867 | 11.9 | 4.8  | 79.0 | 3.5  | 0.8                    | 79.0 | 0.1     | 0.2            | 0.6  | 78.8              | 79.3             |
| Morocco            | 2671 | 23.5 | 11.3 | 54.3 | 8.2  | 2.7                    | 54.3 | 0.1     | 0.2            | 2.3  | 53.4              | 54.9             |
| Netherlands        | 1477 | 4.6  | 1.5  | 93.4 | 0.3  | 0.3                    | 93.4 | 0.1     | 0.0            | 0.2  | 90.2              | 96.9             |
| New Zealand        | 1784 | 6.6  | 2.3  | 89.2 | 1.6  | 0.3                    | 89.2 | 0.1     | 0.0            | 0.1  | 84.7              | 93.5             |
| Philippines        | 3310 | 15.2 | 8.3  | 66.6 | 9.3  | 0.6                    | 66.6 | 0.1     | 0.0            | 0.5  | 67.6              | 65.4             |
| Romania            | 1709 | 18.0 | 8.2  | 70.0 | 3.1  | 0.7                    | 70.0 | 0.1     | 0.0            | 0.6  | 67.1              | 72.9             |
| Russian Federation | 2162 | 3.4  | 4.9  | 90.0 | 1.1  | 0.5                    | 90.0 | 0.2     | 0.0            | 0.3  | 89.1              | 91.1             |
| Singapore          | 2490 | 10.3 | 4.1  | 83.7 | 1.6  | 0.3                    | 83.7 | 0.0     | 0.0            | 0.3  | 79.1              | 88.0             |
| Slovak Republic    | 1758 | 2.6  | 0.9  | 95.3 | 0.7  | 0.5                    | 95.3 | 0.0     | 0.0            | 0.5  | 95.1              | 95.6             |
| Slovenia           | 1546 | 2.9  | 1.2  | 95.6 | 0.3  | 0.1                    | 95.6 | 0.0     | 0.0            | 0.1  | 94.3              | 97.0             |
| South Africa       | 4036 | 15.0 | 8.9  | 61.4 | 12.7 | 2.1                    | 61.4 | 0.8     | 0.3            | 1.0  | 59.8              | 63.3             |
| Thailand           | 2869 | 15.6 | 9.6  | 71.9 | 2.7  | 0.2                    | 71.9 | 0.0     | 0.0            | 0.2  | 69.6              | 74.6             |
| Tunisia            | 2518 | 19.0 | 7.3  | 66.5 | 4.1  | 3.1                    | 66.5 | 0.9     | 0.1            | 2.1  | 63.4              | 69.6             |
| Turkey             | 3920 | 9.9  | 6.5  | 75.2 | 7.9  | 0.6                    | 75.2 | 0.0     | 0.0            | 0.6  | 73.4              | 76.5             |
| United States      | 4444 | 4.1  | 2.4  | 92.0 | 1.2  | 0.4                    | 92.0 | 0.0     | 0.0            | 0.3  | 89.7              | 94.1             |
| International Avg. | .    | 9.9  | 4.4  | 82.2 | 2.7  | 0.8                    | 82.2 | 0.1     | 0.1            | 0.7  | 79.9              | 84.6             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent



Science: Physics  
 Label: Energy released from car engine ( S012008 - B02 )  
 Item Type = MC Key = B

| COUNTRY            | N    | A    | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 2022 | 26.2 | 58.8 | 8.5  | 6.3  | 0.2                    | 58.8 | 0.1     | 0.0            | 0.1  | 54.9              | 62.9             |
| Belgium (Flemish)  | 2620 | 33.8 | 49.2 | 8.3  | 8.0  | 0.7                    | 49.2 | 0.2     | 0.0            | 0.5  | 49.2              | 49.2             |
| Bulgaria           | 1644 | 13.5 | 71.4 | 3.3  | 8.9  | 2.8                    | 71.4 | 1.1     | 0.1            | 1.7  | 71.8              | 71.0             |
| Canada             | 4356 | 26.9 | 62.8 | 6.7  | 3.4  | 0.2                    | 62.8 | 0.0     | 0.0            | 0.2  | 60.7              | 64.9             |
| Chile              | 2931 | 36.1 | 33.8 | 13.4 | 11.8 | 4.9                    | 33.8 | 0.0     | 0.5            | 4.4  | 35.3              | 32.3             |
| Chinese Taipei     | 2873 | 42.1 | 52.3 | 2.2  | 3.3  | 0.1                    | 52.3 | 0.0     | 0.0            | 0.1  | 51.7              | 52.8             |
| Cyprus             | 1559 | 20.1 | 62.6 | 2.9  | 13.1 | 1.3                    | 62.6 | 0.0     | 0.0            | 1.3  | 66.6              | 58.7             |
| Czech Republic     | 1704 | 20.4 | 65.9 | 2.9  | 8.2  | 2.6                    | 65.9 | 0.1     | 0.0            | 2.5  | 60.0              | 72.0             |
| England            | 1467 | 21.3 | 67.2 | 3.3  | 6.9  | 1.3                    | 67.2 | 0.3     | 0.9            | 0.1  | 66.3              | 68.1             |
| Finland            | 1456 | 15.5 | 66.1 | 4.8  | 12.8 | 0.8                    | 66.1 | 0.0     | 0.0            | 0.8  | 63.9              | 68.4             |
| Hong Kong, SAR     | 2577 | 38.0 | 48.7 | 5.9  | 6.7  | 0.8                    | 48.7 | 0.0     | 0.0            | 0.8  | 49.8              | 47.8             |
| Hungary            | 1588 | 13.8 | 76.1 | 0.6  | 7.5  | 2.0                    | 76.1 | 0.3     | 0.1            | 1.5  | 74.4              | 77.6             |
| Indonesia          | 2929 | 23.3 | 41.8 | 4.0  | 30.3 | 0.7                    | 41.8 | 0.0     | 0.0            | 0.7  | 43.7              | 39.7             |
| Iran, Islamic Rep. | 2651 | 24.7 | 54.3 | 8.1  | 10.3 | 2.6                    | 54.3 | 0.0     | 0.1            | 2.5  | 54.7              | 54.0             |
| Israel             | 2103 | 21.5 | 65.4 | 5.4  | 4.0  | 3.6                    | 65.4 | 0.0     | 0.3            | 3.3  | 66.5              | 64.3             |
| Italy              | 1670 | 37.1 | 53.0 | 5.4  | 2.5  | 2.1                    | 53.0 | 0.0     | 0.1            | 2.0  | 52.4              | 53.7             |
| Japan              | 2369 | 28.9 | 64.4 | 4.3  | 2.3  | 0.1                    | 64.4 | 0.0     | 0.0            | 0.0  | 65.9              | 62.9             |
| Jordan             | 2523 | 29.6 | 55.9 | 3.5  | 9.2  | 1.8                    | 55.9 | 0.1     | 0.0            | 1.7  | 59.9              | 52.5             |
| Korea, Rep. of     | 3055 | 15.4 | 74.5 | 3.5  | 6.2  | 0.3                    | 74.5 | 0.0     | 0.0            | 0.3  | 75.5              | 73.5             |
| Latvia (LSS)       | 1428 | 13.6 | 58.6 | 8.1  | 16.8 | 2.8                    | 58.6 | 0.4     | 0.0            | 2.4  | 61.2              | 56.0             |
| Lithuania          | 1176 | 23.4 | 52.4 | 4.7  | 16.4 | 3.1                    | 52.4 | 0.0     | 0.0            | 3.1  | 49.8              | 55.1             |
| Macedonia, Rep. of | 2012 | 13.8 | 48.4 | 4.0  | 27.9 | 5.8                    | 48.4 | 0.2     | 0.2            | 5.4  | 50.4              | 46.5             |
| Malaysia           | 2781 | 24.6 | 50.1 | 6.4  | 17.8 | 1.1                    | 50.1 | 0.0     | 0.0            | 1.1  | 50.8              | 49.2             |
| Moldova            | 1869 | 16.3 | 62.0 | 3.9  | 15.4 | 2.4                    | 62.0 | 0.7     | 0.2            | 1.6  | 63.7              | 60.1             |
| Morocco            | 2670 | 23.9 | 39.9 | 9.4  | 23.8 | 3.1                    | 39.9 | 0.4     | 0.3            | 2.3  | 41.2              | 39.0             |
| Netherlands        | 1477 | 24.6 | 62.7 | 5.5  | 6.8  | 0.3                    | 62.7 | 0.0     | 0.0            | 0.3  | 58.4              | 67.5             |
| New Zealand        | 1784 | 22.0 | 57.9 | 11.7 | 7.9  | 0.4                    | 57.9 | 0.1     | 0.0            | 0.3  | 56.3              | 59.5             |
| Philippines        | 3310 | 28.8 | 50.9 | 8.4  | 11.0 | 0.9                    | 50.9 | 0.0     | 0.0            | 0.9  | 54.0              | 47.2             |
| Romania            | 1712 | 24.6 | 58.9 | 5.4  | 9.6  | 1.5                    | 58.9 | 0.4     | 0.1            | 1.1  | 59.9              | 57.8             |
| Russian Federation | 2162 | 11.9 | 71.8 | 3.3  | 10.8 | 2.1                    | 71.8 | 0.2     | 0.0            | 1.9  | 73.5              | 70.1             |
| Singapore          | 2490 | 28.3 | 60.4 | 5.2  | 5.6  | 0.5                    | 60.4 | 0.0     | 0.0            | 0.5  | 64.2              | 56.8             |
| Slovak Republic    | 1758 | 22.1 | 60.7 | 1.6  | 14.2 | 1.4                    | 60.7 | 0.1     | 0.0            | 1.3  | 59.4              | 62.0             |
| Slovenia           | 1546 | 16.4 | 67.3 | 7.2  | 7.5  | 1.6                    | 67.3 | 0.2     | 0.0            | 1.4  | 65.5              | 69.4             |
| South Africa       | 3358 | 27.0 | 39.7 | 11.5 | 18.6 | 3.1                    | 39.7 | 0.7     | 0.4            | 2.0  | 39.3              | 40.3             |
| Thailand           | 2870 | 27.0 | 55.7 | 6.7  | 10.2 | 0.4                    | 55.7 | 0.0     | 0.0            | 0.4  | 58.8              | 52.0             |
| Tunisia            | 2516 | 15.3 | 45.7 | 5.0  | 27.3 | 6.8                    | 45.7 | 3.8     | 0.2            | 2.7  | 44.7              | 46.8             |
| Turkey             | 3920 | 16.4 | 59.7 | 7.2  | 15.2 | 1.4                    | 59.7 | 0.0     | 0.0            | 1.4  | 61.6              | 58.3             |
| United States      | 4444 | 30.3 | 58.8 | 8.4  | 2.0  | 0.5                    | 58.8 | 0.0     | 0.0            | 0.4  | 55.4              | 62.2             |
| International Avg. | .    | 23.6 | 57.5 | 5.8  | 11.2 | 1.8                    | 57.5 | 0.2     | 0.1            | 1.4  | 57.7              | 57.4             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Physics  
 Label: Greatest density from mass/volume table ( S012009 - B03 )  
 Item Type = MC Key = C

| COUNTRY            | N    | A    | B    | C    | D   | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|-----|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 2022 | 60.0 | 9.4  | 24.9 | 5.2 | 0.5                    | 24.9 | 0.1     | 0.0            | 0.4  | 19.0              | 31.2             |
| Belgium (Flemish)  | 2620 | 37.5 | 8.5  | 45.6 | 6.8 | 1.6                    | 45.6 | 0.2     | 0.0            | 1.5  | 45.0              | 46.2             |
| Bulgaria           | 1643 | 49.2 | 7.2  | 34.7 | 3.7 | 5.1                    | 34.7 | 0.2     | 0.1            | 4.9  | 30.2              | 39.6             |
| Canada             | 4356 | 54.5 | 8.0  | 31.5 | 5.3 | 0.7                    | 31.5 | 0.0     | 0.0            | 0.6  | 27.6              | 35.5             |
| Chile              | 2931 | 72.7 | 5.6  | 10.6 | 5.1 | 5.9                    | 10.6 | 0.0     | 0.5            | 5.4  | 9.7               | 11.4             |
| Chinese Taipei     | 2873 | 30.7 | 8.3  | 52.5 | 8.3 | 0.2                    | 52.5 | 0.0     | 0.0            | 0.2  | 50.7              | 54.3             |
| Cyprus             | 1550 | 63.1 | 9.4  | 20.8 | 4.7 | 2.0                    | 20.8 | 0.0     | 0.0            | 2.0  | 17.6              | 24.0             |
| Czech Republic     | 1704 | 56.6 | 6.5  | 29.4 | 4.4 | 3.1                    | 29.4 | 0.2     | 0.3            | 2.6  | 24.2              | 34.8             |
| England            | 1467 | 69.0 | 6.3  | 18.5 | 4.4 | 1.9                    | 18.5 | 0.0     | 0.9            | 1.0  | 12.4              | 24.6             |
| Finland            | 1456 | 32.6 | 10.4 | 46.4 | 9.6 | 1.0                    | 46.4 | 0.0     | 0.0            | 1.0  | 41.2              | 51.7             |
| Hong Kong, SAR     | 2577 | 32.1 | 10.7 | 49.5 | 7.2 | 0.5                    | 49.5 | 0.0     | 0.0            | 0.4  | 44.7              | 54.2             |
| Hungary            | 1588 | 46.5 | 7.2  | 36.0 | 6.3 | 4.0                    | 36.0 | 0.2     | 0.1            | 3.7  | 32.3              | 39.7             |
| Indonesia          | 2929 | 82.4 | 4.5  | 8.1  | 3.7 | 1.3                    | 8.1  | 0.0     | 0.0            | 1.2  | 6.4               | 9.9              |
| Iran, Islamic Rep. | 2651 | 56.5 | 12.6 | 17.3 | 7.3 | 6.3                    | 17.3 | 0.0     | 0.1            | 6.2  | 14.1              | 19.4             |
| Israel             | 2103 | 35.9 | 10.2 | 44.5 | 6.3 | 3.1                    | 44.5 | 0.0     | 0.3            | 2.8  | 40.7              | 48.6             |
| Italy              | 1670 | 61.6 | 7.3  | 22.6 | 5.3 | 3.2                    | 22.6 | 0.0     | 0.1            | 3.2  | 18.2              | 27.4             |
| Japan              | 2369 | 37.8 | 10.8 | 41.8 | 9.4 | 0.3                    | 41.8 | 0.0     | 0.0            | 0.3  | 35.1              | 48.5             |
| Jordan             | 2526 | 65.8 | 8.0  | 17.7 | 6.2 | 2.3                    | 17.7 | 0.3     | 0.0            | 2.0  | 16.0              | 19.2             |
| Korea, Rep. of     | 3056 | 37.0 | 8.7  | 46.8 | 7.2 | 0.2                    | 46.8 | 0.0     | 0.0            | 0.2  | 44.7              | 48.8             |
| Latvia (LSS)       | 1427 | 52.2 | 7.6  | 30.1 | 6.5 | 3.6                    | 30.1 | 0.4     | 0.0            | 3.2  | 27.1              | 33.2             |
| Lithuania          | 1176 | 54.2 | 4.5  | 29.9 | 8.2 | 3.2                    | 29.9 | 0.0     | 0.0            | 3.2  | 29.8              | 29.9             |
| Macedonia, Rep. of | 2013 | 55.6 | 8.3  | 24.1 | 5.6 | 6.5                    | 24.1 | 0.1     | 0.3            | 6.1  | 22.8              | 25.3             |
| Malaysia           | 2781 | 53.6 | 7.0  | 31.4 | 6.6 | 1.4                    | 31.4 | 0.0     | 0.0            | 1.4  | 31.3              | 31.6             |
| Moldova            | 1869 | 65.8 | 5.0  | 23.2 | 3.6 | 2.5                    | 23.2 | 0.1     | 0.2            | 2.1  | 22.2              | 24.4             |
| Morocco            | 2671 | 77.9 | 7.3  | 6.7  | 4.3 | 3.8                    | 6.7  | 0.5     | 0.3            | 3.0  | 6.4               | 6.9              |
| Netherlands        | 1477 | 43.5 | 10.9 | 38.1 | 6.8 | 0.7                    | 38.1 | 0.1     | 0.0            | 0.6  | 31.5              | 45.5             |
| New Zealand        | 1785 | 70.4 | 7.7  | 16.6 | 4.9 | 0.5                    | 16.6 | 0.0     | 0.0            | 0.5  | 14.8              | 18.4             |
| Philippines        | 3310 | 70.2 | 7.0  | 18.7 | 3.8 | 0.3                    | 18.7 | 0.0     | 0.0            | 0.2  | 18.2              | 19.3             |
| Romania            | 1711 | 62.7 | 6.2  | 24.8 | 3.8 | 2.5                    | 24.8 | 0.3     | 0.1            | 2.1  | 26.9              | 22.5             |
| Russian Federation | 2161 | 49.2 | 5.7  | 35.3 | 5.5 | 4.3                    | 35.3 | 0.3     | 0.1            | 3.9  | 30.3              | 40.8             |
| Singapore          | 2490 | 42.5 | 7.9  | 43.6 | 5.4 | 0.6                    | 43.6 | 0.0     | 0.0            | 0.5  | 40.3              | 46.6             |
| Slovak Republic    | 1758 | 55.2 | 6.0  | 32.2 | 4.4 | 2.1                    | 32.2 | 0.0     | 0.0            | 2.1  | 28.6              | 35.9             |
| Slovenia           | 1546 | 53.1 | 7.5  | 31.9 | 5.4 | 2.2                    | 31.9 | 0.3     | 0.0            | 1.8  | 27.1              | 37.0             |
| South Africa       | 4037 | 57.5 | 14.5 | 17.2 | 9.0 | 1.8                    | 17.2 | 0.4     | 0.5            | 0.9  | 17.8              | 16.6             |
| Thailand           | 2870 | 67.5 | 6.3  | 20.3 | 5.5 | 0.5                    | 20.3 | 0.0     | 0.0            | 0.5  | 20.2              | 20.4             |
| Tunisia            | 2520 | 74.8 | 7.3  | 10.3 | 3.2 | 4.5                    | 10.3 | 1.3     | 0.2            | 3.0  | 9.2               | 11.3             |
| Turkey             | 3920 | 62.0 | 7.2  | 20.8 | 7.3 | 2.6                    | 20.8 | 0.0     | 0.0            | 2.5  | 19.4              | 21.9             |
| United States      | 4444 | 61.5 | 10.4 | 22.6 | 5.0 | 0.5                    | 22.6 | 0.0     | 0.0            | 0.5  | 18.1              | 27.1             |
| International Avg. | .    | 55.5 | 8.0  | 28.3 | 5.8 | 2.3                    | 28.3 | 0.1     | 0.1            | 2.0  | 25.6              | 31.1             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Life Science  
 Label: Pulse/breathing rate after exercise ( S012010 - B04 )  
 Item Type = MC Key = C

| COUNTRY            | N    | A    | B    | C    | D    | E    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 2022 | 1.2  | 1.8  | 93.8 | 1.9  | 0.7  | 0.7                    | 93.8 | 0.0     | 0.0            | 0.7  | 95.4              | 92.2             |
| Belgium (Flemish)  | 2620 | 0.4  | 1.0  | 95.2 | 2.4  | 0.8  | 0.1                    | 95.2 | 0.0     | 0.0            | 0.1  | 96.9              | 93.6             |
| Bulgaria           | 1643 | 2.1  | 1.9  | 91.6 | 2.5  | 0.6  | 1.3                    | 91.6 | 0.2     | 0.1            | 1.1  | 92.6              | 90.5             |
| Canada             | 4356 | 0.8  | 2.1  | 94.3 | 2.0  | 0.6  | 0.2                    | 94.3 | 0.0     | 0.0            | 0.2  | 94.9              | 93.7             |
| Chile              | 2931 | 3.6  | 4.6  | 83.5 | 3.7  | 2.8  | 1.8                    | 83.5 | 0.0     | 0.6            | 1.2  | 84.3              | 82.6             |
| Chinese Taipei     | 2873 | 0.9  | 2.6  | 94.2 | 0.9  | 1.5  | 0.0                    | 94.2 | 0.0     | 0.0            | 0.0  | 94.2              | 94.1             |
| Cyprus             | 1558 | 2.6  | 4.0  | 88.5 | 2.9  | 1.5  | 0.5                    | 88.5 | 0.0     | 0.0            | 0.5  | 89.5              | 87.5             |
| Czech Republic     | 1704 | 0.6  | 2.9  | 94.0 | 1.2  | 0.7  | 0.7                    | 94.0 | 0.0     | 0.3            | 0.4  | 93.6              | 94.3             |
| England            | 1467 | 0.2  | 1.0  | 95.2 | 2.0  | 0.3  | 1.3                    | 95.2 | 0.1     | 0.9            | 0.2  | 94.0              | 96.3             |
| Finland            | 1456 | 0.7  | 3.1  | 94.1 | 1.5  | 0.1  | 0.5                    | 94.1 | 0.0     | 0.0            | 0.5  | 96.1              | 92.0             |
| Hong Kong, SAR     | 2577 | 0.9  | 3.0  | 92.7 | 1.6  | 1.5  | 0.3                    | 92.7 | 0.0     | 0.0            | 0.3  | 93.4              | 92.0             |
| Hungary            | 1588 | 0.2  | 0.8  | 97.3 | 0.4  | 0.2  | 1.1                    | 97.3 | 0.0     | 0.2            | 0.8  | 97.5              | 97.2             |
| Indonesia          | 2929 | 3.5  | 6.4  | 83.3 | 3.3  | 2.9  | 0.6                    | 83.3 | 0.0     | 0.1            | 0.5  | 82.6              | 83.9             |
| Iran, Islamic Rep. | 2651 | 3.1  | 6.5  | 78.5 | 5.4  | 4.4  | 2.0                    | 78.5 | 0.0     | 0.1            | 1.9  | 78.9              | 78.3             |
| Israel             | 2103 | 2.4  | 5.1  | 86.4 | 3.0  | 1.7  | 1.3                    | 86.4 | 0.0     | 0.3            | 1.0  | 86.0              | 87.0             |
| Italy              | 1670 | 2.8  | 3.2  | 89.2 | 2.8  | 1.6  | 0.5                    | 89.2 | 0.0     | 0.1            | 0.4  | 90.0              | 88.2             |
| Japan              | 2369 | 0.3  | 1.3  | 97.5 | 0.6  | 0.3  | 0.0                    | 97.5 | 0.0     | 0.0            | 0.0  | 98.4              | 96.7             |
| Jordan             | 2526 | 3.7  | 8.0  | 82.5 | 4.0  | 0.0  | 1.7                    | 82.5 | 0.3     | 0.0            | 1.4  | 86.2              | 79.2             |
| Korea, Rep. of     | 3056 | 1.5  | 2.4  | 94.6 | 0.9  | 0.4  | 0.1                    | 94.6 | 0.0     | 0.0            | 0.1  | 93.7              | 95.6             |
| Latvia (LSS)       | 1427 | 0.9  | 3.9  | 91.5 | 2.5  | 0.6  | 0.7                    | 91.5 | 0.1     | 0.0            | 0.5  | 92.2              | 90.8             |
| Lithuania          | 1176 | 0.7  | 2.1  | 94.6 | 1.6  | 0.5  | 0.5                    | 94.6 | 0.0     | 0.0            | 0.5  | 94.0              | 95.1             |
| Macedonia, Rep. of | 2013 | 3.1  | 4.0  | 85.5 | 2.9  | 1.6  | 3.0                    | 85.5 | 0.1     | 0.3            | 2.6  | 87.4              | 83.8             |
| Malaysia           | 2781 | 1.9  | 4.3  | 89.2 | 3.3  | 0.9  | 0.3                    | 89.2 | 0.0     | 0.0            | 0.3  | 90.1              | 88.3             |
| Moldova            | 1867 | 3.5  | 5.8  | 84.5 | 2.8  | 2.0  | 1.4                    | 84.5 | 0.0     | 0.3            | 1.1  | 84.6              | 84.4             |
| Morocco            | 2672 | 8.8  | 13.2 | 58.2 | 10.4 | 6.0  | 3.5                    | 58.2 | 0.4     | 0.4            | 2.6  | 59.7              | 57.2             |
| Netherlands        | 1477 | 0.6  | 0.7  | 95.3 | 2.4  | 0.6  | 0.3                    | 95.3 | 0.0     | 0.0            | 0.3  | 97.3              | 93.1             |
| New Zealand        | 1785 | 1.2  | 4.0  | 90.3 | 3.2  | 1.0  | 0.4                    | 90.3 | 0.1     | 0.0            | 0.2  | 92.4              | 88.3             |
| Philippines        | 3310 | 10.4 | 16.4 | 58.5 | 9.7  | 4.7  | 0.4                    | 58.5 | 0.0     | 0.0            | 0.4  | 60.9              | 55.9             |
| Romania            | 1709 | 4.5  | 3.6  | 84.1 | 3.3  | 3.0  | 1.4                    | 84.1 | 0.3     | 0.1            | 1.0  | 85.6              | 82.6             |
| Russian Federation | 2162 | 2.3  | 4.0  | 89.2 | 3.0  | 0.7  | 0.8                    | 89.2 | 0.0     | 0.1            | 0.7  | 88.5              | 89.9             |
| Singapore          | 2490 | 0.6  | 1.5  | 95.7 | 1.6  | 0.3  | 0.3                    | 95.7 | 0.0     | 0.0            | 0.3  | 96.1              | 95.2             |
| Slovak Republic    | 1758 | 2.0  | 2.1  | 92.2 | 2.8  | 0.7  | 0.3                    | 92.2 | 0.0     | 0.0            | 0.3  | 91.8              | 92.7             |
| Slovenia           | 1546 | 0.8  | 2.3  | 94.9 | 1.1  | 0.5  | 0.5                    | 94.9 | 0.1     | 0.0            | 0.4  | 95.1              | 94.6             |
| South Africa       | 4037 | 14.9 | 15.6 | 36.0 | 14.5 | 17.0 | 1.9                    | 36.0 | 0.3     | 0.5            | 1.1  | 34.6              | 37.7             |
| Thailand           | 2870 | 2.0  | 6.3  | 87.0 | 1.8  | 2.5  | 0.4                    | 87.0 | 0.0     | 0.0            | 0.3  | 87.9              | 85.9             |
| Tunisia            | 2521 | 0.8  | 2.5  | 92.3 | 1.6  | 0.8  | 1.9                    | 92.3 | 1.1     | 0.3            | 0.6  | 91.1              | 93.6             |
| Turkey             | 3920 | 6.3  | 3.8  | 79.2 | 6.2  | 3.8  | 0.8                    | 79.2 | 0.0     | 0.0            | 0.8  | 79.6              | 78.9             |
| United States      | 4444 | 1.7  | 2.4  | 91.2 | 3.0  | 1.1  | 0.5                    | 91.2 | 0.0     | 0.1            | 0.4  | 92.4              | 90.0             |
| International Avg. | .    | 2.6  | 4.2  | 87.3 | 3.2  | 1.9  | 0.9                    | 87.3 | 0.1     | 0.1            | 0.7  | 87.9              | 86.7             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Earth Science  
 Label: Elevation diagram of wind/temperature ( S012011 - B05 )  
 Item Type = MC Key = A

| COUNTRY            | N    | A    | B    | C    | D    | E    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 2022 | 49.5 | 9.3  | 3.7  | 15.1 | 21.9 | 0.5                    | 49.5 | 0.1     | 0.0            | 0.4  | 47.6              | 51.4             |
| Belgium (Flemish)  | 2620 | 49.6 | 18.7 | 4.0  | 15.3 | 11.9 | 0.5                    | 49.6 | 0.2     | 0.0            | 0.4  | 51.3              | 47.8             |
| Bulgaria           | 1643 | 55.4 | 8.1  | 2.3  | 6.3  | 24.1 | 3.7                    | 55.4 | 1.2     | 0.1            | 2.5  | 53.0              | 58.0             |
| Canada             | 4356 | 57.4 | 7.4  | 3.6  | 15.2 | 15.9 | 0.4                    | 57.4 | 0.0     | 0.0            | 0.4  | 56.5              | 58.4             |
| Chile              | 2931 | 40.9 | 10.1 | 7.8  | 18.3 | 18.4 | 4.6                    | 40.9 | 0.0     | 0.6            | 4.0  | 41.7              | 40.0             |
| Chinese Taipei     | 2873 | 44.0 | 33.7 | 1.2  | 7.0  | 14.0 | 0.1                    | 44.0 | 0.0     | 0.0            | 0.1  | 42.4              | 45.6             |
| Cyprus             | 1551 | 43.1 | 6.7  | 7.1  | 13.9 | 27.6 | 1.7                    | 43.1 | 0.1     | 0.0            | 1.6  | 41.6              | 44.5             |
| Czech Republic     | 1705 | 55.0 | 11.8 | 2.6  | 9.8  | 19.3 | 1.4                    | 55.0 | 0.0     | 0.3            | 1.1  | 52.4              | 57.7             |
| England            | 1467 | 44.0 | 6.6  | 4.2  | 27.3 | 16.4 | 1.5                    | 44.0 | 0.1     | 0.9            | 0.5  | 38.1              | 49.8             |
| Finland            | 1456 | 56.0 | 11.4 | 1.4  | 5.8  | 24.6 | 0.8                    | 56.0 | 0.0     | 0.0            | 0.8  | 55.7              | 56.2             |
| Hong Kong, SAR     | 2577 | 41.7 | 31.0 | 1.5  | 7.8  | 17.5 | 0.5                    | 41.7 | 0.1     | 0.0            | 0.4  | 41.4              | 42.1             |
| Hungary            | 1588 | 68.8 | 5.9  | 2.3  | 10.9 | 9.9  | 2.1                    | 68.8 | 0.3     | 0.2            | 1.6  | 65.2              | 72.4             |
| Indonesia          | 2928 | 29.9 | 26.5 | 8.2  | 18.9 | 14.8 | 1.7                    | 29.9 | 0.1     | 0.1            | 1.5  | 29.5              | 30.4             |
| Iran, Islamic Rep. | 2651 | 31.3 | 20.4 | 9.7  | 20.3 | 14.6 | 3.8                    | 31.3 | 0.0     | 0.1            | 3.6  | 26.6              | 34.5             |
| Israel             | 2103 | 59.2 | 8.4  | 7.0  | 11.5 | 10.4 | 3.5                    | 59.2 | 0.2     | 0.3            | 3.0  | 61.3              | 57.1             |
| Italy              | 1670 | 38.0 | 9.3  | 5.2  | 24.5 | 20.5 | 2.4                    | 38.0 | 0.0     | 0.1            | 2.3  | 38.3              | 37.7             |
| Japan              | 2369 | 53.6 | 15.9 | 0.9  | 14.2 | 15.2 | 0.1                    | 53.6 | 0.0     | 0.0            | 0.1  | 50.4              | 56.7             |
| Jordan             | 2525 | 46.7 | 16.4 | 6.9  | 14.7 | 14.0 | 1.4                    | 46.7 | 0.2     | 0.0            | 1.2  | 45.7              | 47.6             |
| Korea, Rep. of     | 3056 | 55.2 | 11.2 | 2.7  | 8.0  | 22.8 | 0.1                    | 55.2 | 0.0     | 0.0            | 0.1  | 50.5              | 59.8             |
| Latvia (LSS)       | 1428 | 59.1 | 12.9 | 3.2  | 9.0  | 14.2 | 1.6                    | 59.1 | 0.3     | 0.0            | 1.2  | 61.3              | 57.1             |
| Lithuania          | 1176 | 55.2 | 6.5  | 3.1  | 11.2 | 22.2 | 1.7                    | 55.2 | 0.0     | 0.0            | 1.7  | 55.2              | 55.3             |
| Macedonia, Rep. of | 2013 | 43.8 | 11.9 | 4.5  | 13.2 | 21.3 | 5.2                    | 43.8 | 0.4     | 0.3            | 4.5  | 42.9              | 44.7             |
| Malaysia           | 2781 | 37.2 | 17.7 | 7.3  | 8.3  | 28.4 | 1.1                    | 37.2 | 0.0     | 0.1            | 1.1  | 34.9              | 39.8             |
| Moldova            | 1869 | 43.7 | 11.0 | 5.9  | 9.3  | 28.2 | 1.9                    | 43.7 | 0.2     | 0.3            | 1.4  | 43.5              | 43.9             |
| Morocco            | 2674 | 37.4 | 12.1 | 13.5 | 18.6 | 14.1 | 4.1                    | 37.4 | 0.4     | 0.4            | 3.3  | 37.4              | 37.5             |
| Netherlands        | 1477 | 61.6 | 7.8  | 3.8  | 10.5 | 15.9 | 0.4                    | 61.6 | 0.0     | 0.0            | 0.4  | 61.6              | 61.5             |
| New Zealand        | 1789 | 53.7 | 9.2  | 4.9  | 16.6 | 15.3 | 0.4                    | 53.7 | 0.1     | 0.0            | 0.3  | 53.9              | 53.5             |
| Philippines        | 3310 | 41.1 | 8.1  | 9.9  | 14.9 | 25.4 | 0.6                    | 41.1 | 0.1     | 0.0            | 0.4  | 40.3              | 42.1             |
| Romania            | 1713 | 44.0 | 7.0  | 4.8  | 11.5 | 31.2 | 1.6                    | 44.0 | 0.4     | 0.1            | 1.1  | 44.5              | 43.6             |
| Russian Federation | 2162 | 49.3 | 9.7  | 3.8  | 9.5  | 24.1 | 3.6                    | 49.3 | 0.1     | 0.1            | 3.4  | 48.7              | 49.9             |
| Singapore          | 2490 | 30.5 | 16.2 | 8.3  | 17.1 | 27.1 | 0.8                    | 30.5 | 0.1     | 0.0            | 0.7  | 29.3              | 31.5             |
| Slovak Republic    | 1758 | 65.0 | 11.0 | 1.4  | 7.9  | 12.9 | 1.7                    | 65.0 | 0.0     | 0.0            | 1.7  | 59.1              | 71.0             |
| Slovenia           | 1546 | 61.9 | 8.9  | 2.0  | 10.2 | 15.6 | 1.4                    | 61.9 | 0.1     | 0.0            | 1.3  | 60.5              | 63.4             |
| South Africa       | 4037 | 32.1 | 6.1  | 7.8  | 17.1 | 34.4 | 2.5                    | 32.1 | 0.7     | 0.5            | 1.2  | 29.0              | 35.8             |
| Thailand           | 2870 | 33.6 | 9.0  | 6.1  | 13.4 | 37.4 | 0.4                    | 33.6 | 0.0     | 0.0            | 0.4  | 36.1              | 30.6             |
| Tunisia            | 2512 | 24.6 | 13.2 | 8.2  | 19.7 | 26.8 | 7.6                    | 24.6 | 4.1     | 0.3            | 3.2  | 23.5              | 25.7             |
| Turkey             | 3921 | 47.4 | 23.3 | 5.1  | 9.1  | 14.0 | 1.1                    | 47.4 | 0.0     | 0.0            | 1.1  | 47.0              | 47.7             |
| United States      | 4444 | 49.4 | 9.8  | 7.1  | 18.4 | 14.9 | 0.5                    | 49.4 | 0.0     | 0.1            | 0.3  | 47.2              | 51.6             |
| International Avg. | .    | 47.1 | 12.6 | 5.1  | 13.4 | 19.9 | 1.8                    | 47.1 | 0.2     | 0.1            | 1.4  | 45.9              | 48.3             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Physics  
 Label: Color reflecting most light ( S012012 - B06 )  
 Item Type = MC Key = A

| COUNTRY            | N    | A    | B    | C    | D   | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|-----|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 2022 | 89.1 | 3.0  | 6.4  | 1.4 | 0.1                    | 89.1 | 0.1     | 0.0            | 0.0  | 88.2              | 90.1             |
| Belgium (Flemish)  | 2620 | 94.0 | 0.8  | 4.2  | 1.0 | 0.1                    | 94.0 | 0.0     | 0.0            | 0.0  | 94.7              | 93.3             |
| Bulgaria           | 1644 | 86.0 | 3.5  | 7.2  | 2.0 | 1.3                    | 86.0 | 0.4     | 0.1            | 0.8  | 86.4              | 85.5             |
| Canada             | 4356 | 83.2 | 1.9  | 12.2 | 2.2 | 0.5                    | 83.2 | 0.0     | 0.1            | 0.4  | 81.4              | 85.2             |
| Chile              | 2930 | 74.5 | 11.5 | 8.4  | 3.9 | 1.8                    | 74.5 | 0.0     | 0.9            | 0.9  | 76.1              | 72.9             |
| Chinese Taipei     | 2873 | 88.6 | 3.5  | 6.6  | 1.2 | 0.1                    | 88.6 | 0.0     | 0.0            | 0.1  | 87.8              | 89.4             |
| Cyprus             | 1559 | 75.6 | 11.7 | 9.9  | 2.7 | 0.2                    | 75.6 | 0.0     | 0.0            | 0.2  | 75.7              | 75.5             |
| Czech Republic     | 1705 | 90.3 | 2.0  | 6.3  | 0.5 | 0.8                    | 90.3 | 0.1     | 0.3            | 0.4  | 88.5              | 92.2             |
| England            | 1467 | 88.7 | 3.2  | 6.4  | 0.7 | 1.0                    | 88.7 | 0.1     | 0.9            | 0.0  | 86.6              | 90.9             |
| Finland            | 1456 | 85.3 | 6.1  | 6.8  | 1.7 | 0.2                    | 85.3 | 0.0     | 0.0            | 0.2  | 87.3              | 83.2             |
| Hong Kong, SAR     | 2577 | 85.4 | 2.7  | 10.1 | 1.6 | 0.3                    | 85.4 | 0.2     | 0.0            | 0.1  | 85.0              | 85.9             |
| Hungary            | 1588 | 93.6 | 1.6  | 2.1  | 2.0 | 0.8                    | 93.6 | 0.1     | 0.3            | 0.4  | 93.6              | 93.5             |
| Indonesia          | 2928 | 78.0 | 8.7  | 7.7  | 4.9 | 0.7                    | 78.0 | 0.0     | 0.1            | 0.6  | 75.7              | 80.5             |
| Iran, Islamic Rep. | 2650 | 73.5 | 4.3  | 16.9 | 3.9 | 1.4                    | 73.5 | 0.0     | 0.1            | 1.3  | 68.6              | 76.8             |
| Israel             | 2103 | 85.2 | 3.6  | 6.8  | 2.8 | 1.6                    | 85.2 | 0.1     | 0.4            | 1.2  | 84.9              | 85.7             |
| Italy              | 1670 | 81.7 | 4.4  | 9.2  | 3.8 | 0.9                    | 81.7 | 0.0     | 0.1            | 0.8  | 83.3              | 79.9             |
| Japan              | 2369 | 87.2 | 2.3  | 8.3  | 2.1 | 0.1                    | 87.2 | 0.0     | 0.0            | 0.1  | 85.8              | 88.6             |
| Jordan             | 2526 | 69.7 | 9.4  | 15.9 | 3.9 | 1.1                    | 69.7 | 0.2     | 0.0            | 0.9  | 68.6              | 70.7             |
| Korea, Rep. of     | 3056 | 78.2 | 7.4  | 13.7 | 0.8 | 0.0                    | 78.2 | 0.0     | 0.0            | 0.0  | 76.0              | 80.3             |
| Latvia (LSS)       | 1428 | 85.7 | 4.6  | 4.9  | 4.1 | 0.7                    | 85.7 | 0.3     | 0.0            | 0.4  | 86.4              | 85.0             |
| Lithuania          | 1176 | 88.5 | 3.3  | 3.7  | 4.0 | 0.5                    | 88.5 | 0.0     | 0.0            | 0.5  | 88.2              | 88.7             |
| Macedonia, Rep. of | 2013 | 77.4 | 8.2  | 7.8  | 5.1 | 1.5                    | 77.4 | 0.3     | 0.3            | 1.0  | 76.5              | 78.2             |
| Malaysia           | 2781 | 87.4 | 6.4  | 4.0  | 1.9 | 0.2                    | 87.4 | 0.0     | 0.1            | 0.1  | 88.0              | 86.7             |
| Moldova            | 1869 | 75.3 | 4.5  | 13.6 | 5.7 | 0.9                    | 75.3 | 0.1     | 0.4            | 0.4  | 74.8              | 75.9             |
| Morocco            | 2674 | 55.9 | 12.7 | 21.3 | 7.7 | 2.4                    | 55.9 | 0.3     | 0.6            | 1.5  | 53.2              | 57.8             |
| Netherlands        | 1477 | 91.6 | 2.3  | 4.7  | 1.1 | 0.3                    | 91.6 | 0.0     | 0.0            | 0.3  | 91.1              | 92.2             |
| New Zealand        | 1791 | 80.8 | 5.1  | 11.3 | 2.6 | 0.3                    | 80.8 | 0.2     | 0.0            | 0.1  | 80.3              | 81.3             |
| Philippines        | 3310 | 80.4 | 9.6  | 6.3  | 3.4 | 0.3                    | 80.4 | 0.0     | 0.0            | 0.2  | 81.3              | 79.3             |
| Romania            | 1712 | 85.8 | 4.6  | 6.0  | 2.6 | 1.0                    | 85.8 | 0.4     | 0.1            | 0.5  | 86.6              | 84.8             |
| Russian Federation | 2162 | 89.6 | 2.5  | 4.6  | 2.1 | 1.2                    | 89.6 | 0.2     | 0.1            | 0.8  | 88.7              | 90.6             |
| Singapore          | 2490 | 90.6 | 2.4  | 4.9  | 1.8 | 0.3                    | 90.6 | 0.0     | 0.0            | 0.2  | 90.4              | 90.7             |
| Slovak Republic    | 1758 | 92.0 | 2.0  | 4.5  | 1.3 | 0.3                    | 92.0 | 0.0     | 0.0            | 0.3  | 92.2              | 91.7             |
| Slovenia           | 1546 | 90.6 | 2.8  | 3.6  | 2.5 | 0.5                    | 90.6 | 0.2     | 0.1            | 0.3  | 90.1              | 91.0             |
| South Africa       | 4037 | 69.3 | 9.1  | 11.7 | 7.8 | 2.1                    | 69.3 | 0.6     | 0.6            | 0.9  | 66.7              | 72.4             |
| Thailand           | 2870 | 72.8 | 16.6 | 1.6  | 8.7 | 0.3                    | 72.8 | 0.0     | 0.0            | 0.3  | 72.6              | 73.0             |
| Tunisia            | 2521 | 72.7 | 5.1  | 16.5 | 3.0 | 2.6                    | 72.7 | 1.3     | 0.3            | 1.0  | 68.9              | 76.7             |
| Turkey             | 3921 | 75.2 | 11.3 | 8.1  | 5.0 | 0.4                    | 75.2 | 0.0     | 0.0            | 0.4  | 74.9              | 75.4             |
| United States      | 4444 | 82.9 | 3.9  | 10.5 | 2.3 | 0.4                    | 82.9 | 0.0     | 0.1            | 0.3  | 82.8              | 83.1             |
| International Avg. | .    | 82.4 | 5.5  | 8.3  | 3.0 | 0.8                    | 82.4 | 0.1     | 0.2            | 0.5  | 81.8              | 83.0             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Earth Science  
 Label: True statement of mountain age ( S012013 - C07 )  
 Item Type = MC Key = B

| COUNTRY            | N    | A    | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 1481 | 11.7 | 35.4 | 31.5 | 20.3 | 1.1                    | 35.4 | 0.3     | 0.2            | 0.7  | 34.7              | 36.2             |
| Belgium (Flemish)  | 1967 | 15.1 | 49.0 | 24.4 | 10.5 | 1.0                    | 49.0 | 0.4     | 0.0            | 0.6  | 42.6              | 55.4             |
| Bulgaria           | 1229 | 13.6 | 50.9 | 28.7 | 4.2  | 2.6                    | 50.9 | 1.4     | 0.5            | 0.8  | 48.3              | 53.2             |
| Canada             | 3265 | 11.2 | 39.5 | 29.1 | 19.6 | 0.6                    | 39.5 | 0.2     | 0.0            | 0.4  | 39.6              | 39.4             |
| Chile              | 2199 | 8.6  | 9.7  | 39.4 | 38.1 | 4.2                    | 9.7  | 0.0     | 2.7            | 1.5  | 7.4               | 12.1             |
| Chinese Taipei     | 2175 | 23.4 | 23.2 | 46.1 | 6.8  | 0.4                    | 23.2 | 0.1     | 0.0            | 0.3  | 20.9              | 25.6             |
| Cyprus             | 1167 | 14.5 | 19.0 | 37.2 | 27.7 | 1.7                    | 19.0 | 0.8     | 0.0            | 0.9  | 17.0              | 20.8             |
| Czech Republic     | 1282 | 16.5 | 38.6 | 32.6 | 11.0 | 1.2                    | 38.6 | 0.2     | 0.1            | 0.9  | 33.7              | 43.9             |
| England            | 1099 | 11.9 | 33.4 | 28.4 | 23.5 | 2.8                    | 33.4 | 1.7     | 0.9            | 0.2  | 29.3              | 37.7             |
| Finland            | 1094 | 8.9  | 60.8 | 16.4 | 11.0 | 2.9                    | 60.8 | 0.0     | 0.0            | 2.8  | 60.9              | 60.6             |
| Hong Kong, SAR     | 1942 | 19.9 | 24.7 | 42.3 | 12.8 | 0.3                    | 24.7 | 0.1     | 0.1            | 0.2  | 20.8              | 28.3             |
| Hungary            | 1197 | 5.6  | 62.2 | 16.1 | 11.2 | 4.8                    | 62.2 | 3.6     | 0.3            | 1.0  | 58.8              | 65.3             |
| Indonesia          | 2193 | 12.9 | 7.0  | 44.5 | 34.7 | 1.0                    | 7.0  | 0.0     | 0.2            | 0.8  | 6.5               | 7.4              |
| Iran, Islamic Rep. | 1985 | 7.0  | 49.3 | 25.0 | 16.4 | 2.3                    | 49.3 | 0.0     | 0.2            | 2.1  | 40.9              | 55.2             |
| Israel             | 1569 | 15.6 | 22.0 | 41.0 | 18.1 | 3.3                    | 22.0 | 0.4     | 0.8            | 2.2  | 19.2              | 24.9             |
| Italy              | 1260 | 11.8 | 63.3 | 14.5 | 9.0  | 1.3                    | 63.3 | 0.0     | 0.6            | 0.7  | 58.1              | 68.4             |
| Japan              | 1765 | 18.4 | 32.6 | 35.3 | 13.4 | 0.4                    | 32.6 | 0.3     | 0.1            | 0.1  | 34.1              | 31.1             |
| Jordan             | 1876 | 19.5 | 22.3 | 40.2 | 14.8 | 3.1                    | 22.3 | 1.0     | 0.3            | 1.8  | 19.4              | 24.9             |
| Korea, Rep. of     | 2295 | 9.8  | 59.1 | 18.5 | 12.5 | 0.1                    | 59.1 | 0.0     | 0.1            | 0.0  | 59.9              | 58.4             |
| Latvia (LSS)       | 1082 | 8.3  | 38.7 | 38.4 | 12.1 | 2.5                    | 38.7 | 1.0     | 0.8            | 0.7  | 33.0              | 44.6             |
| Lithuania          | 879  | 9.2  | 35.1 | 41.5 | 12.0 | 2.2                    | 35.1 | 0.0     | 0.7            | 1.5  | 33.2              | 37.1             |
| Macedonia, Rep. of | 1497 | 10.7 | 55.6 | 15.0 | 15.0 | 3.7                    | 55.6 | 1.2     | 1.2            | 1.3  | 53.6              | 57.6             |
| Malaysia           | 2095 | 21.7 | 16.9 | 15.4 | 44.9 | 1.1                    | 16.9 | 0.0     | 0.2            | 0.9  | 15.1              | 18.8             |
| Moldova            | 1373 | 15.5 | 48.2 | 17.6 | 17.1 | 1.7                    | 48.2 | 0.6     | 0.7            | 0.5  | 44.0              | 53.0             |
| Morocco            | 1992 | 16.6 | 21.0 | 29.2 | 24.6 | 8.6                    | 21.0 | 0.1     | 2.4            | 6.1  | 16.2              | 24.3             |
| Netherlands        | 1111 | 15.7 | 38.4 | 32.1 | 13.1 | 0.6                    | 38.4 | 0.2     | 0.0            | 0.4  | 35.5              | 41.5             |
| New Zealand        | 1361 | 13.6 | 22.0 | 40.9 | 21.9 | 1.6                    | 22.0 | 0.9     | 0.0            | 0.6  | 20.8              | 23.1             |
| Philippines        | 2492 | 13.8 | 11.9 | 45.4 | 28.2 | 0.8                    | 11.9 | 0.0     | 0.2            | 0.5  | 9.6               | 14.4             |
| Romania            | 1290 | 7.1  | 52.8 | 24.5 | 10.8 | 4.8                    | 52.8 | 2.7     | 0.0            | 2.1  | 49.9              | 55.7             |
| Russian Federation | 1623 | 11.9 | 57.5 | 18.0 | 10.1 | 2.6                    | 57.5 | 0.6     | 0.6            | 1.3  | 52.0              | 63.9             |
| Singapore          | 1861 | 13.4 | 12.0 | 47.0 | 27.1 | 0.5                    | 12.0 | 0.0     | 0.0            | 0.4  | 10.3              | 13.6             |
| Slovak Republic    | 1308 | 18.0 | 41.7 | 35.7 | 3.6  | 1.1                    | 41.7 | 0.3     | 0.2            | 0.6  | 37.8              | 45.7             |
| Slovenia           | 1147 | 25.2 | 36.3 | 24.5 | 12.8 | 1.2                    | 36.3 | 0.7     | 0.0            | 0.5  | 32.5              | 40.4             |
| South Africa       | 3001 | 22.9 | 12.4 | 31.2 | 28.7 | 4.9                    | 12.4 | 1.7     | 1.3            | 1.8  | 11.9              | 12.9             |
| Thailand           | 2151 | 15.0 | 23.5 | 47.0 | 14.1 | 0.5                    | 23.5 | 0.0     | 0.3            | 0.3  | 22.9              | 24.1             |
| Tunisia            | 1893 | 11.8 | 33.6 | 20.8 | 18.4 | 15.3                   | 33.6 | 12.3    | 1.5            | 1.6  | 29.1              | 38.0             |
| Turkey             | 2940 | 12.6 | 11.4 | 51.0 | 23.9 | 1.1                    | 11.4 | 0.1     | 0.0            | 1.0  | 10.4              | 12.2             |
| United States      | 3374 | 16.8 | 39.3 | 28.4 | 15.1 | 0.5                    | 39.3 | 0.0     | 0.1            | 0.4  | 36.0              | 42.5             |
| International Avg. | .    | 14.1 | 34.5 | 31.4 | 17.6 | 2.4                    | 34.5 | 0.9     | 0.4            | 1.1  | 31.7              | 37.2             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Life Science  
 Label: Message from eyes to brain ( S012014 - C08 )  
 Item Type = MC Key = D

| COUNTRY            | N    | A    | B    | C    | D    | E    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 1481 | 4.2  | 3.5  | 2.3  | 84.2 | 4.8  | 1.0                    | 84.2 | 0.1     | 0.2            | 0.7  | 86.6              | 81.6             |
| Belgium (Flemish)  | 1967 | 2.5  | 1.7  | 2.8  | 89.2 | 2.6  | 1.2                    | 89.2 | 0.0     | 0.0            | 1.1  | 89.9              | 88.5             |
| Bulgaria           | 1229 | 5.9  | 3.8  | 3.0  | 83.8 | 1.2  | 2.2                    | 83.8 | 0.1     | 0.6            | 1.6  | 82.7              | 84.8             |
| Canada             | 3265 | 9.5  | 11.3 | 3.3  | 70.6 | 4.6  | 0.7                    | 70.6 | 0.1     | 0.1            | 0.5  | 72.1              | 69.1             |
| Chile              | 2199 | 30.9 | 15.1 | 3.0  | 35.8 | 8.4  | 6.8                    | 35.8 | 0.0     | 3.0            | 3.8  | 34.4              | 37.2             |
| Chinese Taipei     | 2175 | 0.9  | 4.8  | 0.7  | 92.9 | 0.5  | 0.1                    | 92.9 | 0.0     | 0.0            | 0.1  | 92.6              | 93.3             |
| Cyprus             | 1165 | 13.9 | 13.5 | 4.7  | 57.7 | 8.4  | 1.8                    | 57.7 | 0.1     | 0.2            | 1.5  | 57.6              | 57.8             |
| Czech Republic     | 1282 | 2.0  | 4.4  | 1.8  | 86.3 | 4.2  | 1.3                    | 86.3 | 0.1     | 0.3            | 0.9  | 83.1              | 89.7             |
| England            | 1099 | 8.4  | 4.1  | 1.5  | 79.6 | 5.1  | 1.2                    | 79.6 | 0.0     | 0.9            | 0.4  | 80.9              | 78.1             |
| Finland            | 1094 | 4.7  | 6.9  | 2.1  | 78.2 | 6.2  | 1.9                    | 78.2 | 0.0     | 0.0            | 1.9  | 81.4              | 75.3             |
| Hong Kong, SAR     | 1942 | 1.4  | 2.3  | 0.4  | 94.9 | 0.7  | 0.3                    | 94.9 | 0.0     | 0.1            | 0.2  | 94.7              | 95.1             |
| Hungary            | 1197 | 6.6  | 1.2  | 0.6  | 88.9 | 1.5  | 1.1                    | 88.9 | 0.3     | 0.3            | 0.5  | 89.5              | 88.3             |
| Indonesia          | 2193 | 5.2  | 4.5  | 6.6  | 79.4 | 3.5  | 0.9                    | 79.4 | 0.0     | 0.4            | 0.5  | 80.4              | 78.3             |
| Iran, Islamic Rep. | 1985 | 5.7  | 4.5  | 2.3  | 78.1 | 7.5  | 1.9                    | 78.1 | 0.0     | 0.2            | 1.7  | 75.8              | 79.7             |
| Israel             | 1569 | 13.8 | 11.9 | 4.0  | 60.2 | 6.6  | 3.6                    | 60.2 | 0.2     | 0.8            | 2.5  | 62.1              | 58.4             |
| Italy              | 1260 | 12.2 | 5.2  | 2.6  | 73.8 | 3.7  | 2.4                    | 73.8 | 0.0     | 0.7            | 1.7  | 72.3              | 75.3             |
| Japan              | 1765 | 1.3  | 3.0  | 0.9  | 93.9 | 0.8  | 0.2                    | 93.9 | 0.0     | 0.1            | 0.1  | 94.3              | 93.4             |
| Jordan             | 1876 | 11.2 | 4.1  | 2.5  | 73.0 | 6.9  | 2.3                    | 73.0 | 0.5     | 0.3            | 1.5  | 75.7              | 70.6             |
| Korea, Rep. of     | 2295 | 2.3  | 3.0  | 0.8  | 91.5 | 2.1  | 0.3                    | 91.5 | 0.0     | 0.1            | 0.1  | 91.9              | 91.0             |
| Latvia (LSS)       | 1082 | 12.4 | 5.3  | 3.9  | 74.2 | 1.2  | 3.0                    | 74.2 | 0.7     | 0.9            | 1.5  | 74.8              | 73.6             |
| Lithuania          | 879  | 15.3 | 9.7  | 2.2  | 69.2 | 0.7  | 2.9                    | 69.2 | 0.0     | 1.0            | 1.8  | 67.1              | 71.3             |
| Macedonia, Rep. of | 1497 | 7.4  | 4.3  | 2.0  | 78.5 | 3.5  | 4.2                    | 78.5 | 0.3     | 1.2            | 2.7  | 81.4              | 75.7             |
| Malaysia           | 2095 | 8.1  | 2.3  | 2.9  | 81.9 | 3.9  | 0.9                    | 81.9 | 0.0     | 0.3            | 0.6  | 85.4              | 78.0             |
| Moldova            | 1373 | 6.6  | 2.0  | 2.7  | 80.7 | 5.6  | 2.4                    | 80.7 | 0.3     | 0.7            | 1.4  | 79.4              | 82.2             |
| Morocco            | 1992 | 14.6 | 14.7 | 9.4  | 35.8 | 17.9 | 7.6                    | 35.8 | 0.1     | 3.3            | 4.2  | 33.4              | 37.4             |
| Netherlands        | 1111 | 1.9  | 1.5  | 3.4  | 90.5 | 2.2  | 0.5                    | 90.5 | 0.0     | 0.0            | 0.5  | 90.1              | 90.8             |
| New Zealand        | 1361 | 9.0  | 8.0  | 4.8  | 70.3 | 6.4  | 1.5                    | 70.3 | 0.4     | 0.1            | 0.9  | 75.8              | 65.3             |
| Philippines        | 2492 | 18.6 | 17.0 | 5.6  | 45.2 | 12.2 | 1.4                    | 45.2 | 0.0     | 0.4            | 1.0  | 46.8              | 43.4             |
| Romania            | 1291 | 14.2 | 7.5  | 4.7  | 64.9 | 5.3  | 3.5                    | 64.9 | 0.8     | 0.0            | 2.7  | 64.3              | 65.4             |
| Russian Federation | 1623 | 13.3 | 3.3  | 2.8  | 73.7 | 3.5  | 3.4                    | 73.7 | 0.4     | 0.6            | 2.4  | 71.3              | 76.5             |
| Singapore          | 1861 | 6.1  | 4.5  | 1.1  | 81.2 | 6.9  | 0.2                    | 81.2 | 0.0     | 0.0            | 0.2  | 82.4              | 80.0             |
| Slovak Republic    | 1308 | 4.7  | 3.3  | 1.0  | 86.4 | 3.6  | 1.0                    | 86.4 | 0.0     | 0.2            | 0.8  | 87.5              | 85.3             |
| Slovenia           | 1147 | 8.1  | 5.5  | 3.3  | 74.2 | 7.6  | 1.3                    | 74.2 | 0.0     | 0.0            | 1.3  | 73.3              | 75.1             |
| South Africa       | 3001 | 8.7  | 13.5 | 21.3 | 35.3 | 17.1 | 4.1                    | 35.3 | 0.7     | 1.8            | 1.6  | 34.2              | 36.7             |
| Thailand           | 2150 | 3.5  | 5.0  | 1.4  | 87.6 | 2.2  | 0.3                    | 87.6 | 0.0     | 0.2            | 0.1  | 87.6              | 87.6             |
| Tunisia            | 1893 | 5.8  | 7.8  | 1.5  | 72.8 | 5.8  | 6.3                    | 72.8 | 2.4     | 1.9            | 2.1  | 73.5              | 72.1             |
| Turkey             | 2940 | 17.9 | 4.4  | 4.8  | 57.8 | 14.1 | 1.1                    | 57.8 | 0.0     | 0.0            | 1.0  | 58.6              | 57.1             |
| United States      | 3374 | 5.6  | 8.0  | 3.0  | 78.2 | 4.1  | 1.0                    | 78.2 | 0.0     | 0.1            | 0.9  | 79.4              | 77.1             |
| International Avg. | .    | 8.5  | 6.2  | 3.4  | 74.5 | 5.3  | 2.0                    | 74.5 | 0.2     | 0.6            | 1.3  | 74.9              | 74.1             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Physics  
 Label: Candle position reflected on grid ( S012015 - C09 )  
 Item Type = MC Key = B

| COUNTRY            | N    | A    | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 1481 | 3.9  | 81.4 | 4.3  | 9.9  | 0.5                    | 81.4 | 0.0     | 0.2            | 0.4  | 80.1              | 82.7             |
| Belgium (Flemish)  | 1967 | 1.5  | 87.9 | 2.1  | 8.2  | 0.3                    | 87.9 | 0.2     | 0.0            | 0.2  | 87.7              | 88.1             |
| Bulgaria           | 1229 | 6.5  | 68.7 | 4.9  | 17.3 | 2.6                    | 68.7 | 0.2     | 0.7            | 1.7  | 65.5              | 71.7             |
| Canada             | 3265 | 2.9  | 81.5 | 2.3  | 13.0 | 0.2                    | 81.5 | 0.0     | 0.1            | 0.1  | 78.5              | 84.7             |
| Chile              | 2200 | 5.9  | 60.4 | 6.6  | 22.5 | 4.6                    | 60.4 | 0.0     | 3.5            | 1.0  | 56.4              | 64.7             |
| Chinese Taipei     | 2175 | 4.2  | 79.7 | 2.0  | 14.0 | 0.1                    | 79.7 | 0.0     | 0.0            | 0.1  | 77.5              | 82.0             |
| Cyprus             | 1165 | 5.7  | 63.4 | 6.0  | 24.2 | 0.8                    | 63.4 | 0.0     | 0.2            | 0.6  | 60.2              | 66.2             |
| Czech Republic     | 1282 | 4.7  | 72.3 | 5.5  | 16.4 | 1.1                    | 72.3 | 0.0     | 0.3            | 0.8  | 67.8              | 77.1             |
| England            | 1099 | 2.4  | 83.7 | 2.4  | 10.5 | 1.0                    | 83.7 | 0.1     | 0.9            | 0.1  | 80.2              | 87.4             |
| Finland            | 1094 | 2.8  | 81.2 | 3.8  | 11.6 | 0.6                    | 81.2 | 0.0     | 0.0            | 0.5  | 79.7              | 82.6             |
| Hong Kong, SAR     | 1943 | 5.5  | 75.4 | 2.9  | 16.0 | 0.3                    | 75.4 | 0.1     | 0.1            | 0.2  | 73.1              | 77.5             |
| Hungary            | 1197 | 2.2  | 85.5 | 2.4  | 8.9  | 1.0                    | 85.5 | 0.3     | 0.3            | 0.4  | 83.1              | 87.8             |
| Indonesia          | 2191 | 8.5  | 61.9 | 8.7  | 19.4 | 1.4                    | 61.9 | 0.1     | 0.5            | 0.9  | 55.5              | 68.9             |
| Iran, Islamic Rep. | 1985 | 7.4  | 62.8 | 6.5  | 22.2 | 1.0                    | 62.8 | 0.0     | 0.2            | 0.9  | 56.3              | 67.4             |
| Israel             | 1569 | 6.0  | 63.6 | 8.7  | 19.3 | 2.4                    | 63.6 | 0.1     | 1.0            | 1.3  | 63.5              | 63.8             |
| Italy              | 1260 | 4.2  | 69.9 | 4.6  | 20.2 | 1.2                    | 69.9 | 0.0     | 0.7            | 0.5  | 66.5              | 73.3             |
| Japan              | 1765 | 3.6  | 77.9 | 2.2  | 16.2 | 0.1                    | 77.9 | 0.0     | 0.1            | 0.1  | 75.1              | 80.6             |
| Jordan             | 1884 | 6.7  | 55.1 | 11.4 | 25.5 | 1.3                    | 55.1 | 0.3     | 0.3            | 0.8  | 59.3              | 51.4             |
| Korea, Rep. of     | 2295 | 5.9  | 72.3 | 3.8  | 17.8 | 0.2                    | 72.3 | 0.0     | 0.1            | 0.1  | 68.7              | 75.9             |
| Latvia (LSS)       | 1082 | 5.9  | 70.4 | 5.5  | 15.9 | 2.2                    | 70.4 | 0.4     | 1.1            | 0.8  | 65.8              | 75.1             |
| Lithuania          | 879  | 8.9  | 60.3 | 10.3 | 18.2 | 2.1                    | 60.3 | 0.0     | 1.1            | 1.0  | 54.4              | 66.6             |
| Macedonia, Rep. of | 1497 | 7.0  | 56.0 | 8.3  | 25.6 | 3.1                    | 56.0 | 0.7     | 1.4            | 1.1  | 52.9              | 59.1             |
| Malaysia           | 2095 | 8.3  | 67.7 | 6.2  | 17.3 | 0.5                    | 67.7 | 0.0     | 0.3            | 0.2  | 63.8              | 72.2             |
| Moldova            | 1373 | 9.4  | 48.3 | 15.8 | 23.2 | 3.3                    | 48.3 | 1.6     | 0.7            | 1.0  | 47.1              | 49.8             |
| Morocco            | 1992 | 12.1 | 40.0 | 16.2 | 23.3 | 8.4                    | 40.0 | 0.2     | 3.6            | 4.6  | 37.3              | 41.8             |
| Netherlands        | 1111 | 2.2  | 88.0 | 1.1  | 8.5  | 0.2                    | 88.0 | 0.1     | 0.0            | 0.1  | 86.6              | 89.4             |
| New Zealand        | 1361 | 3.9  | 78.0 | 4.0  | 13.1 | 0.9                    | 78.0 | 0.2     | 0.1            | 0.5  | 76.7              | 79.2             |
| Philippines        | 2492 | 9.1  | 47.0 | 12.6 | 30.4 | 1.0                    | 47.0 | 0.1     | 0.5            | 0.4  | 44.0              | 50.3             |
| Romania            | 1291 | 6.4  | 53.3 | 10.2 | 26.2 | 3.9                    | 53.3 | 2.2     | 0.0            | 1.7  | 51.7              | 54.9             |
| Russian Federation | 1623 | 2.9  | 76.7 | 4.5  | 13.9 | 2.0                    | 76.7 | 0.2     | 0.9            | 0.9  | 74.8              | 78.9             |
| Singapore          | 1861 | 2.4  | 86.8 | 1.2  | 9.3  | 0.2                    | 86.8 | 0.1     | 0.0            | 0.2  | 85.4              | 88.1             |
| Slovak Republic    | 1308 | 3.3  | 77.5 | 4.3  | 14.0 | 0.8                    | 77.5 | 0.0     | 0.4            | 0.4  | 77.2              | 77.9             |
| Slovenia           | 1147 | 6.9  | 64.5 | 12.3 | 15.4 | 0.9                    | 64.5 | 0.1     | 0.0            | 0.8  | 62.3              | 66.9             |
| South Africa       | 3001 | 9.2  | 27.5 | 22.3 | 36.9 | 4.1                    | 27.5 | 1.2     | 1.9            | 0.9  | 22.0              | 33.8             |
| Thailand           | 2151 | 10.5 | 57.3 | 7.4  | 24.3 | 0.6                    | 57.3 | 0.0     | 0.2            | 0.4  | 54.3              | 60.7             |
| Tunisia            | 1895 | 5.3  | 61.9 | 7.6  | 19.1 | 6.2                    | 61.9 | 2.5     | 2.0            | 1.7  | 59.3              | 64.4             |
| Turkey             | 2940 | 13.4 | 49.5 | 11.5 | 24.7 | 0.9                    | 49.5 | 0.1     | 0.0            | 0.8  | 45.7              | 52.3             |
| United States      | 3374 | 4.0  | 73.1 | 5.1  | 17.5 | 0.3                    | 73.1 | 0.0     | 0.1            | 0.2  | 70.4              | 75.8             |
| International Avg. | .    | 5.8  | 67.6 | 6.8  | 18.2 | 1.6                    | 67.6 | 0.3     | 0.6            | 0.7  | 64.9              | 70.3             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent



Science: Chemistry  
 Label: Substance type of black/white powder ( S012016 - C10 )  
 Item Type = MC Key = C

| COUNTRY            | N    | A    | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 1481 | 6.4  | 6.9  | 80.1 | 5.9  | 0.7                    | 80.1 | 0.1     | 0.2            | 0.5  | 79.4              | 80.9             |
| Belgium (Flemish)  | 1967 | 4.5  | 3.6  | 87.9 | 3.1  | 0.8                    | 87.9 | 0.1     | 0.0            | 0.7  | 86.7              | 89.2             |
| Bulgaria           | 1229 | 4.5  | 4.3  | 87.4 | 1.8  | 2.0                    | 87.4 | 0.1     | 0.8            | 1.1  | 86.9              | 87.7             |
| Canada             | 3265 | 7.4  | 4.4  | 83.1 | 4.9  | 0.2                    | 83.1 | 0.0     | 0.1            | 0.1  | 82.2              | 84.0             |
| Chile              | 2200 | 3.2  | 8.1  | 75.2 | 7.4  | 6.2                    | 75.2 | 0.0     | 3.9            | 2.3  | 76.9              | 73.4             |
| Chinese Taipei     | 2175 | 1.3  | 16.2 | 78.5 | 3.7  | 0.4                    | 78.5 | 0.1     | 0.0            | 0.3  | 79.5              | 77.5             |
| Cyprus             | 1166 | 6.8  | 14.9 | 66.3 | 10.8 | 1.2                    | 66.3 | 0.0     | 0.3            | 0.9  | 64.5              | 67.9             |
| Czech Republic     | 1250 | 1.8  | 9.3  | 86.0 | 1.8  | 1.0                    | 86.0 | 0.0     | 0.4            | 0.6  | 87.3              | 84.6             |
| England            | 1099 | 7.0  | 9.5  | 76.5 | 5.4  | 1.5                    | 76.5 | 0.1     | 0.9            | 0.5  | 72.2              | 81.1             |
| Finland            | 1094 | 2.9  | 9.7  | 81.2 | 5.3  | 0.8                    | 81.2 | 0.0     | 0.0            | 0.7  | 80.5              | 81.9             |
| Hong Kong, SAR     | 1943 | 1.1  | 5.9  | 81.9 | 10.6 | 0.6                    | 81.9 | 0.1     | 0.1            | 0.5  | 81.1              | 82.7             |
| Hungary            | 1197 | 1.9  | 1.8  | 93.4 | 1.5  | 1.4                    | 93.4 | 0.1     | 0.4            | 0.9  | 92.1              | 94.7             |
| Indonesia          | 2191 | 14.5 | 15.4 | 58.8 | 9.3  | 2.0                    | 58.8 | 0.1     | 0.5            | 1.3  | 56.7              | 61.0             |
| Iran, Islamic Rep. | 1986 | 4.5  | 34.5 | 52.1 | 7.6  | 1.4                    | 52.1 | 0.0     | 0.2            | 1.2  | 49.9              | 53.6             |
| Israel             | 1569 | 5.6  | 7.5  | 78.4 | 6.1  | 2.4                    | 78.4 | 0.2     | 1.3            | 0.9  | 77.4              | 79.4             |
| Italy              | 1260 | 9.0  | 10.9 | 68.8 | 8.7  | 2.5                    | 68.8 | 0.0     | 0.7            | 1.8  | 68.9              | 68.7             |
| Japan              | 1765 | 1.0  | 7.9  | 89.0 | 1.9  | 0.3                    | 89.0 | 0.0     | 0.1            | 0.2  | 91.5              | 86.5             |
| Jordan             | 1883 | 10.5 | 8.3  | 71.6 | 7.9  | 1.7                    | 71.6 | 0.3     | 0.3            | 1.0  | 75.1              | 68.5             |
| Korea, Rep. of     | 2295 | 0.9  | 10.8 | 83.3 | 5.0  | 0.2                    | 83.3 | 0.0     | 0.1            | 0.0  | 81.1              | 85.4             |
| Latvia (LSS)       | 1082 | 1.5  | 4.3  | 87.6 | 4.1  | 2.5                    | 87.6 | 0.2     | 1.3            | 1.0  | 88.5              | 86.7             |
| Lithuania          | 879  | 3.1  | 3.4  | 88.8 | 2.6  | 2.1                    | 88.8 | 0.0     | 1.1            | 1.0  | 89.1              | 88.5             |
| Macedonia, Rep. of | 1497 | 12.0 | 7.7  | 73.1 | 3.4  | 3.9                    | 73.1 | 0.1     | 1.6            | 2.2  | 74.7              | 71.5             |
| Malaysia           | 2095 | 7.1  | 10.1 | 71.1 | 10.5 | 1.3                    | 71.1 | 0.0     | 0.3            | 0.9  | 72.5              | 69.5             |
| Moldova            | 1373 | 19.3 | 9.5  | 59.1 | 9.4  | 2.7                    | 59.1 | 0.2     | 0.8            | 1.7  | 59.5              | 58.7             |
| Morocco            | 1992 | 13.5 | 14.1 | 56.7 | 7.5  | 8.1                    | 56.7 | 0.1     | 4.2            | 3.9  | 55.4              | 57.6             |
| Netherlands        | 1111 | 5.2  | 3.1  | 86.6 | 4.8  | 0.2                    | 86.6 | 0.1     | 0.0            | 0.1  | 84.9              | 88.6             |
| New Zealand        | 1361 | 7.3  | 9.3  | 74.4 | 8.4  | 0.5                    | 74.4 | 0.0     | 0.2            | 0.3  | 71.8              | 76.9             |
| Philippines        | 2492 | 15.0 | 16.2 | 53.4 | 14.5 | 0.9                    | 53.4 | 0.0     | 0.5            | 0.4  | 55.0              | 51.5             |
| Romania            | 1288 | 6.0  | 7.2  | 81.7 | 2.9  | 2.3                    | 81.7 | 0.2     | 0.0            | 2.1  | 85.3              | 78.1             |
| Russian Federation | 1623 | 5.6  | 6.6  | 81.5 | 3.3  | 3.0                    | 81.5 | 0.2     | 0.9            | 1.9  | 81.7              | 81.2             |
| Singapore          | 1861 | 4.5  | 9.4  | 80.8 | 5.0  | 0.3                    | 80.8 | 0.0     | 0.0            | 0.3  | 79.3              | 82.3             |
| Slovak Republic    | 1307 | 2.1  | 3.6  | 91.5 | 1.8  | 1.0                    | 91.5 | 0.0     | 0.5            | 0.5  | 92.0              | 91.0             |
| Slovenia           | 1147 | 3.5  | 2.4  | 90.2 | 3.1  | 0.8                    | 90.2 | 0.0     | 0.0            | 0.8  | 92.0              | 88.2             |
| South Africa       | 3001 | 17.4 | 14.9 | 53.2 | 11.2 | 3.4                    | 53.2 | 0.4     | 2.2            | 0.8  | 51.1              | 55.6             |
| Thailand           | 2151 | 17.6 | 39.8 | 31.8 | 10.4 | 0.5                    | 31.8 | 0.0     | 0.2            | 0.3  | 31.4              | 32.2             |
| Tunisia            | 1890 | 9.1  | 8.1  | 72.7 | 4.3  | 5.9                    | 72.7 | 1.7     | 2.3            | 1.9  | 70.4              | 75.1             |
| Turkey             | 2940 | 12.6 | 11.6 | 61.3 | 12.7 | 1.8                    | 61.3 | 0.1     | 0.1            | 1.6  | 62.4              | 60.5             |
| United States      | 3374 | 4.4  | 8.3  | 82.3 | 4.6  | 0.4                    | 82.3 | 0.0     | 0.1            | 0.3  | 82.2              | 82.4             |
| International Avg. | .    | 6.9  | 10.0 | 75.2 | 6.1  | 1.8                    | 75.2 | 0.1     | 0.7            | 1.0  | 75.0              | 75.4             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Environmental and Resource Issues  
 Label: Increased carbon dioxide in atmosphere ( S012017 - C11 )  
 Item Type = MC Key = A

| COUNTRY            | N    | A    | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 1481 | 68.0 | 6.0  | 7.5  | 17.8 | 0.8                    | 68.0 | 0.0     | 0.2            | 0.6  | 62.8              | 73.3             |
| Belgium (Flemish)  | 1967 | 46.8 | 6.2  | 13.9 | 31.7 | 1.4                    | 46.8 | 0.3     | 0.0            | 1.1  | 38.5              | 55.1             |
| Bulgaria           | 1229 | 51.1 | 4.8  | 7.6  | 32.1 | 4.4                    | 51.1 | 0.4     | 1.0            | 3.1  | 45.2              | 56.8             |
| Canada             | 3265 | 63.3 | 6.7  | 9.8  | 19.5 | 0.8                    | 63.3 | 0.0     | 0.1            | 0.7  | 57.5              | 69.3             |
| Chile              | 2200 | 40.3 | 9.1  | 14.0 | 28.4 | 8.3                    | 40.3 | 0.0     | 4.6            | 3.7  | 35.0              | 45.7             |
| Chinese Taipei     | 2175 | 54.2 | 7.1  | 12.5 | 25.7 | 0.4                    | 54.2 | 0.0     | 0.1            | 0.3  | 48.2              | 60.5             |
| Cyprus             | 1165 | 40.3 | 8.0  | 8.6  | 41.3 | 1.8                    | 40.3 | 0.0     | 0.4            | 1.5  | 33.4              | 46.5             |
| Czech Republic     | 1250 | 36.8 | 6.9  | 8.3  | 44.7 | 3.3                    | 36.8 | 0.2     | 0.4            | 2.6  | 30.0              | 44.0             |
| England            | 1099 | 59.5 | 6.2  | 11.8 | 20.9 | 1.6                    | 59.5 | 0.3     | 0.9            | 0.4  | 46.0              | 73.3             |
| Finland            | 1094 | 52.8 | 9.8  | 10.1 | 25.5 | 1.8                    | 52.8 | 0.0     | 0.0            | 1.8  | 46.2              | 58.9             |
| Hong Kong, SAR     | 1943 | 53.0 | 4.9  | 8.2  | 33.3 | 0.5                    | 53.0 | 0.0     | 0.1            | 0.5  | 47.2              | 58.5             |
| Hungary            | 1197 | 46.5 | 5.7  | 15.7 | 27.5 | 4.5                    | 46.5 | 1.0     | 0.7            | 2.8  | 38.0              | 54.3             |
| Indonesia          | 2191 | 53.9 | 5.6  | 12.3 | 25.7 | 2.6                    | 53.9 | 0.0     | 0.5            | 2.0  | 50.5              | 57.6             |
| Iran, Islamic Rep. | 1986 | 29.1 | 7.3  | 15.8 | 43.8 | 4.0                    | 29.1 | 0.0     | 0.3            | 3.7  | 25.9              | 31.3             |
| Israel             | 1569 | 50.9 | 5.9  | 14.3 | 24.4 | 4.5                    | 50.9 | 0.1     | 1.5            | 2.9  | 45.0              | 57.1             |
| Italy              | 1260 | 46.5 | 4.4  | 7.6  | 36.7 | 4.8                    | 46.5 | 0.0     | 1.0            | 3.8  | 39.1              | 53.6             |
| Japan              | 1765 | 77.1 | 1.4  | 2.1  | 19.0 | 0.4                    | 77.1 | 0.1     | 0.1            | 0.2  | 71.9              | 82.1             |
| Jordan             | 1883 | 26.0 | 8.9  | 14.8 | 47.9 | 2.3                    | 26.0 | 0.1     | 0.4            | 1.9  | 26.3              | 25.8             |
| Korea, Rep. of     | 2295 | 56.8 | 8.8  | 9.1  | 25.0 | 0.3                    | 56.8 | 0.0     | 0.1            | 0.2  | 50.6              | 62.8             |
| Latvia (LSS)       | 1082 | 33.9 | 6.6  | 12.7 | 42.4 | 4.4                    | 33.9 | 0.3     | 1.3            | 2.9  | 27.1              | 40.9             |
| Lithuania          | 879  | 23.3 | 4.7  | 16.5 | 50.5 | 5.0                    | 23.3 | 0.0     | 1.5            | 3.5  | 16.0              | 31.1             |
| Macedonia, Rep. of | 1497 | 32.9 | 7.8  | 16.2 | 35.4 | 7.8                    | 32.9 | 0.2     | 1.9            | 5.7  | 28.9              | 36.8             |
| Malaysia           | 2095 | 61.6 | 5.4  | 13.5 | 18.4 | 1.1                    | 61.6 | 0.0     | 0.4            | 0.7  | 60.2              | 63.3             |
| Moldova            | 1373 | 39.6 | 7.3  | 12.9 | 36.5 | 3.8                    | 39.6 | 0.3     | 1.0            | 2.4  | 42.3              | 36.5             |
| Morocco            | 1991 | 33.0 | 13.2 | 17.9 | 25.8 | 10.2                   | 33.0 | 0.3     | 4.7            | 5.2  | 32.7              | 33.2             |
| Netherlands        | 1111 | 66.4 | 6.5  | 10.6 | 16.2 | 0.3                    | 66.4 | 0.0     | 0.0            | 0.3  | 58.8              | 74.7             |
| New Zealand        | 1361 | 55.0 | 9.1  | 11.9 | 22.9 | 1.1                    | 55.0 | 0.1     | 0.3            | 0.8  | 51.2              | 58.5             |
| Philippines        | 2492 | 30.1 | 8.1  | 20.1 | 40.4 | 1.4                    | 30.1 | 0.0     | 0.6            | 0.7  | 29.4              | 30.9             |
| Romania            | 1290 | 36.7 | 9.8  | 17.4 | 32.1 | 4.0                    | 36.7 | 0.5     | 0.0            | 3.5  | 35.2              | 38.2             |
| Russian Federation | 1623 | 37.9 | 4.8  | 6.7  | 45.0 | 5.6                    | 37.9 | 0.2     | 1.3            | 4.1  | 33.6              | 42.9             |
| Singapore          | 1861 | 84.4 | 2.2  | 4.7  | 8.4  | 0.3                    | 84.4 | 0.0     | 0.0            | 0.3  | 81.5              | 87.3             |
| Slovak Republic    | 1307 | 34.8 | 5.2  | 9.5  | 47.2 | 3.3                    | 34.8 | 0.1     | 0.6            | 2.6  | 28.8              | 41.0             |
| Slovenia           | 1147 | 35.8 | 6.4  | 13.4 | 40.6 | 3.8                    | 35.8 | 0.4     | 0.0            | 3.3  | 26.6              | 45.7             |
| South Africa       | 3001 | 26.2 | 18.7 | 16.9 | 34.0 | 4.3                    | 26.2 | 0.4     | 2.3            | 1.5  | 23.9              | 28.8             |
| Thailand           | 2151 | 51.8 | 3.6  | 5.3  | 38.9 | 0.5                    | 51.8 | 0.0     | 0.3            | 0.2  | 49.3              | 54.8             |
| Tunisia            | 1891 | 18.7 | 7.4  | 20.6 | 42.4 | 10.9                   | 18.7 | 5.0     | 2.9            | 3.0  | 15.2              | 22.0             |
| Turkey             | 2940 | 30.9 | 11.2 | 15.9 | 38.3 | 3.7                    | 30.9 | 0.1     | 0.2            | 3.4  | 29.8              | 31.6             |
| United States      | 3374 | 59.6 | 9.2  | 11.1 | 19.4 | 0.6                    | 59.6 | 0.0     | 0.1            | 0.5  | 51.1              | 68.1             |
| International Avg. | .    | 45.9 | 7.1  | 12.0 | 31.7 | 3.2                    | 45.9 | 0.3     | 0.8            | 2.1  | 41.0              | 50.9             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Physics  
 Label: Substance NOT a fossil fuel ( S012018 - C12 )  
 Item Type = MC Key = C

| COUNTRY            | N    | A    | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 1481 | 3.1  | 11.2 | 50.9 | 34.1 | 0.8                    | 50.9 | 0.1     | 0.2            | 0.5  | 47.6              | 54.3             |
| Belgium (Flemish)  | 1967 | 2.5  | 7.3  | 66.4 | 22.4 | 1.4                    | 66.4 | 0.1     | 0.0            | 1.2  | 66.2              | 66.6             |
| Bulgaria           | 1229 | 2.9  | 2.6  | 87.5 | 4.5  | 2.6                    | 87.5 | 1.0     | 1.0            | 0.6  | 85.8              | 89.1             |
| Canada             | 3265 | 4.5  | 5.1  | 70.4 | 19.1 | 0.9                    | 70.4 | 0.2     | 0.1            | 0.5  | 70.1              | 70.8             |
| Chile              | 2200 | 6.6  | 5.8  | 46.4 | 33.9 | 7.4                    | 46.4 | 0.1     | 5.2            | 2.1  | 50.8              | 41.7             |
| Chinese Taipei     | 2175 | 2.3  | 1.3  | 84.3 | 11.8 | 0.3                    | 84.3 | 0.0     | 0.1            | 0.2  | 83.0              | 85.6             |
| Cyprus             | 1165 | 10.9 | 11.5 | 34.0 | 41.4 | 2.2                    | 34.0 | 0.2     | 0.4            | 1.6  | 31.6              | 36.3             |
| Czech Republic     | 1250 | 2.1  | 13.7 | 56.9 | 23.3 | 4.0                    | 56.9 | 1.1     | 0.7            | 2.1  | 55.1              | 58.9             |
| England            | 1099 | 1.9  | 4.9  | 62.3 | 29.5 | 1.4                    | 62.3 | 0.0     | 0.9            | 0.6  | 59.6              | 65.1             |
| Finland            | 1094 | 5.2  | 12.3 | 64.0 | 17.0 | 1.5                    | 64.0 | 0.0     | 0.0            | 1.5  | 62.2              | 65.7             |
| Hong Kong, SAR     | 1943 | 1.4  | 2.5  | 67.4 | 28.2 | 0.6                    | 67.4 | 0.1     | 0.1            | 0.4  | 62.0              | 72.4             |
| Hungary            | .    | .    | .    | .    | .    | .                      | .    | .       | .              | .    | .                 | .                |
| Indonesia          | 2190 | 6.7  | 5.3  | 71.3 | 15.0 | 1.6                    | 71.3 | 0.0     | 0.8            | 0.8  | 71.4              | 71.3             |
| Iran, Islamic Rep. | 1986 | 10.7 | 8.2  | 43.6 | 35.4 | 2.1                    | 43.6 | 0.0     | 0.5            | 1.6  | 38.7              | 47.1             |
| Israel             | 1569 | 5.9  | 4.1  | 64.5 | 21.4 | 4.1                    | 64.5 | 0.5     | 1.7            | 1.9  | 64.1              | 65.0             |
| Italy              | 1260 | 4.5  | 8.1  | 53.3 | 31.8 | 2.4                    | 53.3 | 0.0     | 1.0            | 1.4  | 50.5              | 56.0             |
| Japan              | 1765 | 2.6  | 3.1  | 67.1 | 26.9 | 0.2                    | 67.1 | 0.1     | 0.1            | 0.1  | 64.4              | 69.7             |
| Jordan             | 1883 | 3.1  | 4.6  | 76.7 | 14.2 | 1.5                    | 76.7 | 0.3     | 0.5            | 0.7  | 78.9              | 74.6             |
| Korea, Rep. of     | 2295 | 1.0  | 5.3  | 64.4 | 29.1 | 0.2                    | 64.4 | 0.0     | 0.2            | 0.0  | 60.6              | 68.2             |
| Latvia (LSS)       | 1082 | 5.1  | 10.5 | 57.7 | 23.0 | 3.7                    | 57.7 | 0.2     | 1.5            | 1.9  | 60.3              | 55.0             |
| Lithuania          | 879  | 2.0  | 1.0  | 82.4 | 12.4 | 2.1                    | 82.4 | 0.0     | 1.6            | 0.5  | 78.1              | 87.0             |
| Macedonia, Rep. of | 1497 | 14.6 | 6.4  | 34.0 | 39.3 | 5.8                    | 34.0 | 0.8     | 2.1            | 3.0  | 33.1              | 34.8             |
| Malaysia           | 2095 | 5.0  | 9.8  | 76.7 | 7.7  | 0.8                    | 76.7 | 0.0     | 0.4            | 0.4  | 78.4              | 74.8             |
| Moldova            | 1372 | 1.7  | 2.0  | 89.1 | 5.2  | 2.1                    | 89.1 | 0.4     | 1.2            | 0.5  | 89.4              | 88.7             |
| Morocco            | 1992 | 13.9 | 16.2 | 40.3 | 18.8 | 10.9                   | 40.3 | 0.7     | 4.9            | 5.3  | 40.3              | 40.4             |
| Netherlands        | 1111 | 4.4  | 14.3 | 68.4 | 11.6 | 1.3                    | 68.4 | 0.3     | 0.0            | 1.0  | 68.9              | 67.7             |
| New Zealand        | 1361 | 4.3  | 11.1 | 49.1 | 34.2 | 1.2                    | 49.1 | 0.3     | 0.5            | 0.5  | 44.4              | 53.6             |
| Philippines        | 2492 | 12.9 | 16.1 | 46.8 | 22.6 | 1.5                    | 46.8 | 0.0     | 0.7            | 0.8  | 43.7              | 50.2             |
| Romania            | 1244 | 4.7  | 11.2 | 48.6 | 30.2 | 5.5                    | 48.6 | 2.1     | 0.0            | 3.3  | 48.0              | 49.1             |
| Russian Federation | 1623 | 1.7  | 8.8  | 67.7 | 18.5 | 3.3                    | 67.7 | 0.4     | 1.6            | 1.3  | 64.6              | 71.2             |
| Singapore          | 1861 | 1.0  | 3.5  | 71.1 | 24.2 | 0.1                    | 71.1 | 0.0     | 0.0            | 0.1  | 70.0              | 72.2             |
| Slovak Republic    | 1307 | 2.9  | 45.1 | 24.4 | 24.3 | 3.2                    | 24.4 | 0.7     | 0.7            | 1.8  | 22.3              | 26.6             |
| Slovenia           | 1147 | 3.0  | 5.7  | 62.9 | 27.3 | 1.2                    | 62.9 | 0.2     | 0.0            | 1.0  | 62.4              | 63.4             |
| South Africa       | 3001 | 8.3  | 20.5 | 31.8 | 35.2 | 4.3                    | 31.8 | 0.6     | 2.6            | 1.1  | 29.6              | 34.4             |
| Thailand           | 2151 | 10.0 | 14.4 | 46.1 | 28.7 | 0.9                    | 46.1 | 0.0     | 0.3            | 0.5  | 45.0              | 47.3             |
| Tunisia            | 1891 | 5.8  | 6.7  | 57.7 | 16.5 | 13.2                   | 57.7 | 7.8     | 3.3            | 2.1  | 56.8              | 58.6             |
| Turkey             | 2940 | 3.1  | 14.0 | 41.4 | 40.3 | 1.3                    | 41.4 | 0.1     | 0.2            | 1.0  | 36.5              | 44.9             |
| United States      | 3374 | 4.0  | 6.6  | 69.8 | 18.7 | 0.8                    | 69.8 | 0.1     | 0.2            | 0.6  | 67.7              | 71.9             |
| International Avg. | .    | 5.0  | 9.2  | 59.4 | 23.7 | 2.7                    | 59.4 | 0.5     | 0.9            | 1.2  | 57.9              | 60.8             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Physics  
 Label: Light rays through magnifying glass ( S012019 - D01 )  
 Item Type = MC Key = B

| COUNTRY            | N    | A    | B    | C    | D   | E    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|-----|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 1517 | 9.4  | 47.7 | 32.7 | 3.9 | 6.2  | 0.1                    | 47.7 | 0.0     | 0.0            | 0.1  | 37.4              | 57.5             |
| Belgium (Flemish)  | 1978 | 9.9  | 41.4 | 27.2 | 5.5 | 14.6 | 1.3                    | 41.4 | 0.0     | 0.0            | 1.3  | 29.3              | 53.3             |
| Bulgaria           | 1228 | 13.1 | 69.7 | 6.2  | 4.5 | 3.5  | 3.0                    | 69.7 | 0.8     | 0.1            | 2.2  | 68.9              | 70.3             |
| Canada             | 3273 | 11.7 | 46.5 | 30.8 | 4.5 | 6.4  | 0.2                    | 46.5 | 0.0     | 0.0            | 0.2  | 37.5              | 55.7             |
| Chile              | 2209 | 28.3 | 37.3 | 18.1 | 3.3 | 10.6 | 2.5                    | 37.3 | 0.0     | 0.6            | 1.9  | 25.1              | 49.9             |
| Chinese Taipei     | 2153 | 3.0  | 73.4 | 21.5 | 0.6 | 1.4  | 0.1                    | 73.4 | 0.0     | 0.0            | 0.1  | 72.5              | 74.3             |
| Cyprus             | 1160 | 22.2 | 28.3 | 38.3 | 5.0 | 5.6  | 0.5                    | 28.3 | 0.0     | 0.0            | 0.5  | 26.4              | 30.0             |
| Czech Republic     | 1307 | 15.3 | 49.0 | 29.6 | 2.2 | 3.3  | 0.6                    | 49.0 | 0.0     | 0.0            | 0.6  | 41.0              | 57.8             |
| England            | 1105 | 11.2 | 29.0 | 45.7 | 7.9 | 5.6  | 0.6                    | 29.0 | 0.0     | 0.0            | 0.6  | 23.2              | 34.2             |
| Finland            | 1088 | 14.1 | 50.3 | 24.7 | 4.9 | 5.6  | 0.3                    | 50.3 | 0.0     | 0.0            | 0.3  | 37.2              | 63.6             |
| Hong Kong, SAR     | 1943 | 5.1  | 43.4 | 46.9 | 0.9 | 3.2  | 0.5                    | 43.4 | 0.0     | 0.0            | 0.5  | 41.9              | 44.8             |
| Hungary            | 1196 | 10.4 | 47.3 | 21.6 | 2.1 | 16.7 | 2.0                    | 47.3 | 0.2     | 0.0            | 1.8  | 34.9              | 60.9             |
| Indonesia          | 2202 | 18.9 | 24.4 | 42.1 | 3.2 | 10.0 | 1.3                    | 24.4 | 0.0     | 0.0            | 1.3  | 24.0              | 24.9             |
| Iran, Islamic Rep. | 1990 | 35.9 | 39.2 | 12.1 | 2.8 | 7.4  | 2.6                    | 39.2 | 0.0     | 0.0            | 2.5  | 28.8              | 46.2             |
| Israel             | 1560 | 17.2 | 31.3 | 27.5 | 5.0 | 16.0 | 3.0                    | 31.3 | 0.1     | 0.4            | 2.5  | 22.2              | 40.9             |
| Italy              | 1255 | 12.7 | 34.1 | 32.7 | 4.7 | 13.4 | 2.3                    | 34.1 | 0.0     | 0.1            | 2.3  | 26.5              | 41.4             |
| Japan              | 1780 | 2.0  | 87.8 | 4.3  | 2.6 | 3.3  | 0.1                    | 87.8 | 0.0     | 0.0            | 0.1  | 86.7              | 88.8             |
| Jordan             | 1913 | 23.8 | 36.9 | 23.0 | 3.7 | 10.0 | 2.6                    | 36.9 | 0.7     | 0.0            | 1.9  | 38.4              | 35.6             |
| Korea, Rep. of     | 2296 | 2.4  | 60.6 | 34.3 | 1.3 | 1.2  | 0.0                    | 60.6 | 0.0     | 0.0            | 0.0  | 55.9              | 65.3             |
| Latvia (LSS)       | 1066 | 15.4 | 38.3 | 40.6 | 2.8 | 1.8  | 1.1                    | 38.3 | 0.5     | 0.0            | 0.7  | 27.9              | 51.1             |
| Lithuania          | 886  | 17.9 | 51.2 | 22.5 | 1.8 | 4.8  | 1.7                    | 51.2 | 0.0     | 0.0            | 1.7  | 41.7              | 61.6             |
| Macedonia, Rep. of | 1498 | 13.8 | 20.1 | 52.0 | 1.6 | 8.7  | 3.8                    | 20.1 | 0.1     | 0.1            | 3.6  | 18.1              | 22.2             |
| Malaysia           | 2086 | 10.2 | 52.0 | 32.4 | 2.9 | 1.8  | 0.6                    | 52.0 | 0.0     | 0.0            | 0.6  | 50.6              | 53.6             |
| Moldova            | 1376 | 19.1 | 48.1 | 19.0 | 2.9 | 7.9  | 3.0                    | 48.1 | 0.0     | 0.5            | 2.5  | 47.4              | 48.9             |
| Morocco            | 2061 | 27.5 | 31.3 | 17.5 | 6.7 | 12.8 | 4.3                    | 31.3 | 0.1     | 0.7            | 3.5  | 34.9              | 28.7             |
| Netherlands        | 1110 | 7.1  | 47.2 | 32.9 | 1.0 | 11.7 | 0.2                    | 47.2 | 0.0     | 0.0            | 0.2  | 35.8              | 59.1             |
| New Zealand        | 1351 | 13.5 | 40.2 | 33.5 | 4.9 | 7.5  | 0.4                    | 40.2 | 0.1     | 0.0            | 0.3  | 32.5              | 48.0             |
| Philippines        | 2464 | 29.8 | 19.3 | 25.5 | 2.6 | 21.8 | 1.0                    | 19.3 | 0.0     | 0.1            | 0.9  | 17.4              | 21.5             |
| Romania            | 1287 | 20.3 | 42.8 | 25.6 | 1.9 | 7.6  | 1.8                    | 42.8 | 0.4     | 0.0            | 1.5  | 36.3              | 49.1             |
| Russian Federation | 1617 | 17.5 | 66.9 | 6.4  | 1.6 | 4.0  | 3.5                    | 66.9 | 0.3     | 0.3            | 2.9  | 59.0              | 75.4             |
| Singapore          | 1871 | 8.7  | 53.8 | 32.0 | 2.5 | 2.9  | 0.1                    | 53.8 | 0.0     | 0.0            | 0.1  | 46.7              | 60.8             |
| Slovak Republic    | 1301 | 23.7 | 48.9 | 15.3 | 4.1 | 4.8  | 3.2                    | 48.9 | 0.0     | 0.3            | 2.9  | 45.0              | 52.8             |
| Slovenia           | 1166 | 5.8  | 41.5 | 44.5 | 1.9 | 4.8  | 1.5                    | 41.5 | 0.1     | 0.0            | 1.4  | 34.6              | 48.9             |
| South Africa       | 3059 | 31.4 | 13.5 | 23.9 | 4.5 | 23.8 | 2.7                    | 13.5 | 0.5     | 0.6            | 1.6  | 13.4              | 13.7             |
| Thailand           | 2150 | 15.8 | 39.8 | 35.3 | 1.6 | 7.2  | 0.3                    | 39.8 | 0.0     | 0.0            | 0.3  | 32.6              | 48.5             |
| Tunisia            | 1884 | 12.6 | 20.7 | 42.8 | 5.1 | 15.6 | 3.3                    | 20.7 | 1.4     | 0.1            | 1.8  | 14.3              | 27.2             |
| Turkey             | 2942 | 37.4 | 22.8 | 20.9 | 4.2 | 12.5 | 2.2                    | 22.8 | 0.0     | 0.0            | 2.2  | 19.4              | 25.3             |
| United States      | 3354 | 16.4 | 35.6 | 33.0 | 5.3 | 9.3  | 0.3                    | 35.6 | 0.0     | 0.0            | 0.2  | 26.1              | 44.8             |
| International Avg. | .    | 16.1 | 42.4 | 28.3 | 3.4 | 8.3  | 1.5                    | 42.4 | 0.1     | 0.1            | 1.3  | 36.6              | 48.3             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Physics  
 Label: Magnetic substances ( S012020 - D02 )  
 Item Type = MC Key = C

| COUNTRY            | N    | A    | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 1517 | 2.0  | 5.9  | 82.7 | 9.1  | 0.3                    | 82.7 | 0.1     | 0.0            | 0.1  | 82.1              | 83.3             |
| Belgium (Flemish)  | 1978 | 4.7  | 6.6  | 78.1 | 10.1 | 0.4                    | 78.1 | 0.0     | 0.0            | 0.3  | 74.7              | 81.4             |
| Bulgaria           | 1228 | 1.5  | 3.5  | 90.7 | 3.4  | 0.9                    | 90.7 | 0.1     | 0.1            | 0.7  | 89.6              | 91.9             |
| Canada             | 3273 | 4.2  | 3.8  | 81.0 | 10.8 | 0.2                    | 81.0 | 0.0     | 0.0            | 0.1  | 80.7              | 81.4             |
| Chile              | 2209 | 7.1  | 14.7 | 53.0 | 22.4 | 2.8                    | 53.0 | 0.0     | 0.7            | 2.1  | 51.6              | 54.4             |
| Chinese Taipei     | 2154 | 4.4  | 5.3  | 77.1 | 13.0 | 0.2                    | 77.1 | 0.0     | 0.0            | 0.2  | 73.3              | 81.0             |
| Cyprus             | 1159 | 4.5  | 12.7 | 69.3 | 12.7 | 0.8                    | 69.3 | 0.1     | 0.0            | 0.7  | 66.6              | 71.7             |
| Czech Republic     | 1307 | 1.6  | 3.5  | 90.7 | 3.6  | 0.6                    | 90.7 | 0.0     | 0.0            | 0.6  | 88.5              | 93.3             |
| England            | 1105 | 2.5  | 4.1  | 88.7 | 4.1  | 0.6                    | 88.7 | 0.0     | 0.6            | 0.0  | 88.0              | 89.3             |
| Finland            | 1088 | 5.2  | 6.8  | 81.7 | 6.0  | 0.3                    | 81.7 | 0.0     | 0.0            | 0.3  | 79.3              | 84.1             |
| Hong Kong, SAR     | 1943 | 5.1  | 6.6  | 74.1 | 13.7 | 0.5                    | 74.1 | 0.1     | 0.0            | 0.4  | 69.4              | 78.9             |
| Hungary            | 1196 | 2.1  | 2.5  | 92.2 | 2.9  | 0.3                    | 92.2 | 0.0     | 0.0            | 0.3  | 90.1              | 94.8             |
| Indonesia          | 2202 | 4.0  | 21.0 | 47.1 | 27.0 | 0.9                    | 47.1 | 0.0     | 0.0            | 0.9  | 43.1              | 51.3             |
| Iran, Islamic Rep. | 1990 | 5.7  | 19.2 | 51.8 | 20.0 | 3.3                    | 51.8 | 0.0     | 0.2            | 3.1  | 48.9              | 53.8             |
| Israel             | 1560 | 5.5  | 9.3  | 67.2 | 15.2 | 2.8                    | 67.2 | 0.0     | 0.7            | 2.0  | 64.9              | 69.7             |
| Italy              | 1255 | 4.0  | 9.2  | 73.0 | 11.9 | 1.9                    | 73.0 | 0.0     | 0.1            | 1.8  | 70.1              | 75.8             |
| Japan              | 1780 | 6.4  | 3.8  | 84.8 | 4.6  | 0.4                    | 84.8 | 0.0     | 0.1            | 0.3  | 85.0              | 84.6             |
| Jordan             | 1913 | 2.4  | 11.3 | 74.8 | 10.6 | 0.9                    | 74.8 | 0.2     | 0.0            | 0.7  | 77.0              | 72.9             |
| Korea, Rep. of     | 2296 | 4.1  | 3.9  | 90.2 | 1.8  | 0.1                    | 90.2 | 0.0     | 0.0            | 0.1  | 89.2              | 91.2             |
| Latvia (LSS)       | 1066 | 7.3  | 17.0 | 57.9 | 16.5 | 1.3                    | 57.9 | 0.3     | 0.2            | 0.9  | 53.5              | 63.4             |
| Lithuania          | 886  | 3.0  | 5.7  | 82.0 | 8.0  | 1.3                    | 82.0 | 0.0     | 0.0            | 1.3  | 77.5              | 86.8             |
| Macedonia, Rep. of | 1498 | 2.3  | 7.0  | 78.3 | 9.8  | 2.6                    | 78.3 | 0.3     | 0.2            | 2.0  | 76.2              | 80.5             |
| Malaysia           | 2086 | 4.0  | 8.5  | 75.1 | 11.3 | 1.2                    | 75.1 | 0.0     | 0.0            | 1.2  | 73.5              | 76.9             |
| Moldova            | 1377 | 3.7  | 13.3 | 71.5 | 9.8  | 1.7                    | 71.5 | 0.0     | 0.5            | 1.3  | 69.7              | 73.5             |
| Morocco            | 2062 | 10.1 | 29.4 | 28.6 | 26.3 | 5.6                    | 28.6 | 0.4     | 0.8            | 4.4  | 27.8              | 29.3             |
| Netherlands        | 1110 | 3.5  | 11.1 | 74.4 | 10.8 | 0.3                    | 74.4 | 0.1     | 0.0            | 0.2  | 72.8              | 76.1             |
| New Zealand        | 1351 | 5.3  | 7.7  | 73.0 | 13.7 | 0.3                    | 73.0 | 0.1     | 0.1            | 0.2  | 71.3              | 74.8             |
| Philippines        | 2464 | 3.3  | 26.4 | 27.3 | 42.1 | 1.0                    | 27.3 | 0.0     | 0.2            | 0.8  | 24.4              | 30.5             |
| Romania            | 1287 | 2.2  | 7.2  | 79.0 | 10.6 | 1.0                    | 79.0 | 0.1     | 0.1            | 0.8  | 76.7              | 81.2             |
| Russian Federation | 1617 | 2.0  | 3.0  | 87.7 | 5.7  | 1.6                    | 87.7 | 0.2     | 0.3            | 1.0  | 85.8              | 89.7             |
| Singapore          | 1871 | 2.4  | 3.1  | 89.3 | 4.9  | 0.2                    | 89.3 | 0.0     | 0.0            | 0.2  | 88.5              | 90.1             |
| Slovak Republic    | 1301 | 2.4  | 4.6  | 88.2 | 3.6  | 1.2                    | 88.2 | 0.0     | 0.3            | 0.9  | 86.7              | 89.7             |
| Slovenia           | 1166 | 2.6  | 6.2  | 84.4 | 5.6  | 1.1                    | 84.4 | 0.0     | 0.0            | 1.1  | 80.5              | 88.6             |
| South Africa       | 3059 | 5.6  | 27.2 | 35.8 | 28.1 | 3.3                    | 35.8 | 0.6     | 0.7            | 2.0  | 35.0              | 36.8             |
| Thailand           | 2150 | 3.7  | 10.1 | 58.0 | 27.8 | 0.3                    | 58.0 | 0.0     | 0.0            | 0.3  | 53.6              | 63.4             |
| Tunisia            | 1884 | 4.6  | 13.5 | 52.9 | 25.8 | 3.2                    | 52.9 | 1.2     | 0.2            | 1.8  | 48.0              | 57.8             |
| Turkey             | 2942 | 4.8  | 9.4  | 70.0 | 14.8 | 0.9                    | 70.0 | 0.0     | 0.0            | 0.8  | 70.2              | 69.9             |
| United States      | 3354 | 4.4  | 6.8  | 72.2 | 16.2 | 0.3                    | 72.2 | 0.0     | 0.1            | 0.2  | 68.8              | 75.5             |
| International Avg. | .    | 4.1  | 9.8  | 71.9 | 13.0 | 1.2                    | 71.9 | 0.1     | 0.2            | 1.0  | 69.8              | 74.2             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Earth Science  
 Label: Contour map showing river ( S012021 - D03 )  
 Item Type = MC Key = B

| COUNTRY            | N    | A    | B    | C    | D    | E    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 1517 | 12.0 | 52.6 | 23.1 | 4.9  | 7.3  | 0.2                    | 52.6 | 0.0     | 0.0            | 0.1  | 45.9              | 58.8             |
| Belgium (Flemish)  | 1978 | 15.5 | 52.6 | 18.5 | 6.6  | 6.6  | 0.3                    | 52.6 | 0.1     | 0.0            | 0.1  | 46.8              | 58.3             |
| Bulgaria           | 1228 | 18.9 | 40.9 | 22.1 | 9.0  | 7.0  | 2.1                    | 40.9 | 0.3     | 0.1            | 1.7  | 37.5              | 44.6             |
| Canada             | 3273 | 14.6 | 45.8 | 23.3 | 7.1  | 9.0  | 0.2                    | 45.8 | 0.0     | 0.0            | 0.2  | 39.9              | 51.8             |
| Chile              | 2209 | 22.7 | 14.4 | 22.7 | 9.9  | 26.2 | 4.1                    | 14.4 | 0.0     | 0.9            | 3.2  | 12.9              | 16.0             |
| Chinese Taipei     | 2154 | 9.5  | 61.3 | 17.0 | 9.0  | 3.2  | 0.1                    | 61.3 | 0.0     | 0.0            | 0.0  | 59.8              | 62.7             |
| Cyprus             | 1156 | 24.2 | 20.9 | 29.4 | 7.7  | 15.6 | 2.3                    | 20.9 | 0.4     | 0.0            | 1.9  | 13.9              | 27.2             |
| Czech Republic     | 1307 | 18.6 | 40.4 | 26.2 | 8.3  | 5.9  | 0.6                    | 40.4 | 0.2     | 0.0            | 0.4  | 29.6              | 52.4             |
| England            | 1105 | 10.0 | 50.9 | 28.1 | 5.2  | 5.0  | 0.9                    | 50.9 | 0.1     | 0.6            | 0.2  | 42.5              | 58.5             |
| Finland            | 1088 | 7.3  | 47.6 | 27.8 | 7.9  | 8.7  | 0.7                    | 47.6 | 0.0     | 0.0            | 0.7  | 46.8              | 48.3             |
| Hong Kong, SAR     | 1943 | 5.3  | 61.0 | 22.1 | 4.3  | 7.2  | 0.2                    | 61.0 | 0.0     | 0.0            | 0.1  | 55.1              | 66.7             |
| Hungary            | 1196 | 16.9 | 43.7 | 20.0 | 9.9  | 8.3  | 1.2                    | 43.7 | 0.0     | 0.1            | 1.1  | 40.0              | 48.1             |
| Indonesia          | 2202 | 27.1 | 17.5 | 19.6 | 13.2 | 20.8 | 1.8                    | 17.5 | 0.0     | 0.0            | 1.8  | 15.5              | 19.6             |
| Iran, Islamic Rep. | 1990 | 21.3 | 22.6 | 27.8 | 12.2 | 13.1 | 3.1                    | 22.6 | 0.0     | 0.2            | 2.9  | 19.5              | 24.6             |
| Israel             | 1560 | 23.2 | 25.2 | 27.7 | 9.7  | 11.3 | 2.8                    | 25.2 | 0.1     | 0.8            | 1.9  | 18.5              | 32.4             |
| Italy              | 1255 | 25.3 | 21.1 | 34.8 | 7.4  | 9.1  | 2.3                    | 21.1 | 0.0     | 0.2            | 2.1  | 18.1              | 24.1             |
| Japan              | 1780 | 10.6 | 51.5 | 23.0 | 10.0 | 4.8  | 0.1                    | 51.5 | 0.0     | 0.1            | 0.1  | 45.5              | 57.6             |
| Jordan             | 1912 | 25.3 | 19.3 | 33.6 | 7.3  | 12.9 | 1.5                    | 19.3 | 0.5     | 0.1            | 0.9  | 18.0              | 20.5             |
| Korea, Rep. of     | 2296 | 14.2 | 50.1 | 19.3 | 13.3 | 3.0  | 0.1                    | 50.1 | 0.0     | 0.0            | 0.1  | 43.3              | 56.9             |
| Latvia (LSS)       | 1067 | 13.3 | 37.1 | 25.8 | 12.6 | 8.9  | 2.3                    | 37.1 | 0.3     | 0.2            | 1.8  | 32.1              | 43.2             |
| Lithuania          | 886  | 12.5 | 37.9 | 23.2 | 9.7  | 13.6 | 3.2                    | 37.9 | 0.0     | 0.1            | 3.1  | 34.2              | 41.9             |
| Macedonia, Rep. of | 1498 | 21.9 | 28.4 | 23.3 | 9.6  | 12.9 | 3.9                    | 28.4 | 0.3     | 0.2            | 3.4  | 26.9              | 30.0             |
| Malaysia           | 2086 | 9.8  | 51.2 | 20.9 | 9.4  | 7.3  | 1.3                    | 51.2 | 0.0     | 0.0            | 1.3  | 49.6              | 53.0             |
| Moldova            | 1376 | 21.0 | 32.4 | 20.7 | 8.5  | 16.3 | 1.0                    | 32.4 | 0.0     | 0.5            | 0.5  | 30.5              | 34.7             |
| Morocco            | 2061 | 22.4 | 17.4 | 25.8 | 12.4 | 17.1 | 4.9                    | 17.4 | 0.4     | 0.9            | 3.6  | 16.7              | 17.8             |
| Netherlands        | 1110 | 12.1 | 48.7 | 22.6 | 8.2  | 7.5  | 0.8                    | 48.7 | 0.1     | 0.0            | 0.8  | 42.5              | 55.1             |
| New Zealand        | 1351 | 14.1 | 40.7 | 31.1 | 6.8  | 6.9  | 0.3                    | 40.7 | 0.0     | 0.1            | 0.3  | 37.1              | 44.4             |
| Philippines        | 2464 | 34.8 | 16.3 | 26.5 | 9.3  | 12.3 | 0.7                    | 16.3 | 0.0     | 0.3            | 0.5  | 15.5              | 17.2             |
| Romania            | 1288 | 32.8 | 25.6 | 19.4 | 8.2  | 12.0 | 1.9                    | 25.6 | 0.4     | 0.1            | 1.5  | 24.6              | 26.6             |
| Russian Federation | 1617 | 13.7 | 49.5 | 16.7 | 9.5  | 7.9  | 2.7                    | 49.5 | 0.2     | 0.3            | 2.2  | 45.0              | 54.4             |
| Singapore          | 1871 | 14.6 | 43.7 | 23.7 | 5.5  | 12.3 | 0.2                    | 43.7 | 0.0     | 0.0            | 0.2  | 33.9              | 53.5             |
| Slovak Republic    | 1301 | 18.3 | 42.5 | 24.2 | 8.5  | 5.3  | 1.2                    | 42.5 | 0.0     | 0.3            | 0.9  | 36.0              | 49.2             |
| Slovenia           | 1166 | 9.6  | 59.1 | 16.9 | 9.1  | 4.5  | 0.8                    | 59.1 | 0.0     | 0.0            | 0.8  | 56.9              | 61.5             |
| South Africa       | 3059 | 21.5 | 20.9 | 28.2 | 11.0 | 16.6 | 1.9                    | 20.9 | 0.3     | 0.8            | 0.8  | 17.5              | 24.7             |
| Thailand           | 2150 | 20.2 | 26.4 | 20.1 | 15.6 | 17.5 | 0.2                    | 26.4 | 0.0     | 0.0            | 0.2  | 22.3              | 31.4             |
| Tunisia            | 1883 | 14.2 | 16.2 | 25.3 | 9.1  | 30.2 | 5.0                    | 16.2 | 1.7     | 0.2            | 3.1  | 13.5              | 19.0             |
| Turkey             | 2942 | 17.7 | 26.3 | 22.9 | 10.9 | 20.1 | 2.1                    | 26.3 | 0.0     | 0.0            | 2.1  | 25.1              | 27.3             |
| United States      | 3354 | 11.7 | 47.6 | 25.6 | 7.4  | 7.6  | 0.2                    | 47.6 | 0.0     | 0.1            | 0.1  | 41.5              | 53.4             |
| International Avg. | .    | 17.3 | 37.0 | 23.9 | 9.0  | 11.1 | 1.6                    | 37.0 | 0.1     | 0.2            | 1.2  | 32.9              | 41.2             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Physics  
 Label: Sequence of energy changes ( S012022 - D04 )  
 Item Type = MC Key = C

| COUNTRY            | N    | A    | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 1517 | 10.5 | 11.5 | 67.1 | 10.6 | 0.3                    | 67.1 | 0.0     | 0.0            | 0.3  | 63.0              | 70.9             |
| Belgium (Flemish)  | 1978 | 9.1  | 13.7 | 65.3 | 9.7  | 2.2                    | 65.3 | 0.0     | 0.0            | 2.1  | 61.8              | 68.8             |
| Bulgaria           | 1228 | 5.4  | 10.0 | 63.8 | 16.3 | 4.5                    | 63.8 | 0.5     | 0.1            | 3.9  | 59.1              | 68.6             |
| Canada             | 3273 | 10.2 | 13.7 | 61.0 | 14.3 | 0.8                    | 61.0 | 0.1     | 0.0            | 0.7  | 58.0              | 64.0             |
| Chile              | 2209 | 8.5  | 14.5 | 49.8 | 20.7 | 6.5                    | 49.8 | 0.0     | 1.3            | 5.2  | 46.4              | 53.3             |
| Chinese Taipei     | 2153 | 7.4  | 7.0  | 72.0 | 13.3 | 0.3                    | 72.0 | 0.1     | 0.0            | 0.2  | 69.2              | 74.8             |
| Cyprus             | 1159 | 8.7  | 5.8  | 67.5 | 16.9 | 1.1                    | 67.5 | 0.1     | 0.0            | 1.0  | 69.9              | 65.2             |
| Czech Republic     | 1307 | 7.6  | 19.8 | 54.6 | 15.1 | 2.9                    | 54.6 | 0.0     | 0.0            | 2.9  | 49.0              | 60.9             |
| England            | 1105 | 8.7  | 10.6 | 71.2 | 8.0  | 1.4                    | 71.2 | 0.2     | 0.6            | 0.6  | 67.3              | 74.8             |
| Finland            | 1088 | 14.2 | 23.8 | 44.8 | 16.1 | 1.1                    | 44.8 | 0.0     | 0.0            | 1.1  | 40.2              | 49.5             |
| Hong Kong, SAR     | 1943 | 9.2  | 7.2  | 65.9 | 17.3 | 0.3                    | 65.9 | 0.0     | 0.0            | 0.3  | 63.8              | 68.0             |
| Hungary            | 1196 | 5.3  | 8.0  | 74.1 | 9.9  | 2.6                    | 74.1 | 0.5     | 0.1            | 2.0  | 70.6              | 78.3             |
| Indonesia          | 2202 | 14.0 | 10.8 | 53.4 | 21.1 | 0.7                    | 53.4 | 0.0     | 0.0            | 0.7  | 51.9              | 55.0             |
| Iran, Islamic Rep. | 1990 | 6.3  | 12.3 | 64.9 | 12.8 | 3.7                    | 64.9 | 0.0     | 0.3            | 3.4  | 59.5              | 68.5             |
| Israel             | 1560 | 10.3 | 3.1  | 66.1 | 15.0 | 5.6                    | 66.1 | 0.0     | 0.8            | 4.7  | 62.4              | 69.9             |
| Italy              | 1255 | 11.4 | 11.9 | 65.5 | 8.1  | 3.1                    | 65.5 | 0.0     | 0.2            | 2.9  | 61.6              | 69.3             |
| Japan              | 1780 | 10.2 | 8.9  | 63.4 | 17.2 | 0.3                    | 63.4 | 0.1     | 0.1            | 0.2  | 63.8              | 63.1             |
| Jordan             | 1910 | 7.7  | 14.7 | 57.7 | 17.5 | 2.4                    | 57.7 | 0.2     | 0.1            | 2.1  | 59.4              | 56.3             |
| Korea, Rep. of     | 2296 | 7.0  | 21.0 | 59.9 | 12.1 | 0.1                    | 59.9 | 0.0     | 0.0            | 0.1  | 55.2              | 64.5             |
| Latvia (LSS)       | 1067 | 13.9 | 13.3 | 54.2 | 15.5 | 3.1                    | 54.2 | 0.5     | 0.4            | 2.3  | 51.6              | 57.5             |
| Lithuania          | 886  | 10.2 | 20.2 | 51.1 | 12.7 | 5.8                    | 51.1 | 0.0     | 0.1            | 5.7  | 41.0              | 61.9             |
| Macedonia, Rep. of | 1498 | 15.4 | 14.6 | 50.9 | 11.1 | 8.1                    | 50.9 | 0.3     | 0.2            | 7.6  | 50.4              | 51.3             |
| Malaysia           | 2086 | 22.5 | 12.0 | 52.5 | 12.4 | 0.7                    | 52.5 | 0.0     | 0.0            | 0.7  | 50.3              | 54.9             |
| Moldova            | 1376 | 9.8  | 21.1 | 53.5 | 11.6 | 4.0                    | 53.5 | 0.2     | 0.7            | 3.1  | 51.9              | 55.2             |
| Morocco            | 2063 | 11.4 | 13.7 | 47.9 | 20.8 | 6.2                    | 47.9 | 0.6     | 1.2            | 4.4  | 47.5              | 48.1             |
| Netherlands        | 1110 | 13.4 | 9.1  | 65.3 | 10.8 | 1.3                    | 65.3 | 0.0     | 0.5            | 0.9  | 62.6              | 68.3             |
| New Zealand        | 1351 | 11.3 | 13.9 | 61.3 | 12.9 | 0.6                    | 61.3 | 0.2     | 0.1            | 0.4  | 58.7              | 64.0             |
| Philippines        | 2464 | 14.7 | 13.8 | 39.4 | 30.6 | 1.4                    | 39.4 | 0.3     | 0.3            | 0.8  | 36.5              | 42.8             |
| Romania            | 1286 | 8.0  | 16.6 | 56.1 | 16.7 | 2.6                    | 56.1 | 0.8     | 0.2            | 1.7  | 54.3              | 57.7             |
| Russian Federation | 1617 | 6.7  | 11.7 | 67.3 | 11.0 | 3.3                    | 67.3 | 0.2     | 0.6            | 2.5  | 64.0              | 70.9             |
| Singapore          | 1871 | 6.3  | 5.9  | 77.4 | 10.0 | 0.3                    | 77.4 | 0.0     | 0.0            | 0.3  | 74.4              | 80.4             |
| Slovak Republic    | 1301 | 9.4  | 9.8  | 67.5 | 10.6 | 2.7                    | 67.5 | 0.0     | 0.3            | 2.4  | 61.8              | 73.3             |
| Slovenia           | 1166 | 15.8 | 11.6 | 59.2 | 11.6 | 1.8                    | 59.2 | 0.2     | 0.0            | 1.6  | 53.1              | 65.8             |
| South Africa       | 3059 | 15.7 | 16.5 | 19.7 | 44.1 | 4.0                    | 19.7 | 0.4     | 1.0            | 2.7  | 18.0              | 21.6             |
| Thailand           | 2150 | 9.4  | 6.9  | 64.1 | 19.4 | 0.3                    | 64.1 | 0.0     | 0.0            | 0.3  | 62.4              | 66.1             |
| Tunisia            | 1883 | 6.5  | 5.7  | 54.7 | 26.9 | 6.3                    | 54.7 | 3.3     | 0.2            | 2.7  | 52.2              | 57.2             |
| Turkey             | 2942 | 15.3 | 19.6 | 36.0 | 26.5 | 2.6                    | 36.0 | 0.0     | 0.0            | 2.6  | 32.5              | 38.5             |
| United States      | 3354 | 10.0 | 14.2 | 63.9 | 11.5 | 0.5                    | 63.9 | 0.0     | 0.1            | 0.4  | 61.2              | 66.5             |
| International Avg. | .    | 10.5 | 12.6 | 58.7 | 15.8 | 2.5                    | 58.7 | 0.2     | 0.2            | 2.0  | 55.7              | 61.7             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Life Science  
 Label: Sensory messages to the brain ( S012023 - D05 )  
 Item Type = MC Key = C

| COUNTRY            | N    | A    | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 1517 | 16.0 | 2.5  | 71.4 | 9.8  | 0.3                    | 71.4 | 0.0     | 0.0            | 0.2  | 64.4              | 78.1             |
| Belgium (Flemish)  | 1978 | 11.4 | 1.9  | 79.1 | 6.4  | 1.1                    | 79.1 | 0.0     | 0.0            | 1.1  | 75.3              | 82.9             |
| Bulgaria           | 1228 | 7.5  | 5.0  | 82.5 | 3.6  | 1.4                    | 82.5 | 0.0     | 0.1            | 1.3  | 80.8              | 84.1             |
| Canada             | 3273 | 13.0 | 7.9  | 68.1 | 10.6 | 0.4                    | 68.1 | 0.0     | 0.0            | 0.4  | 66.6              | 69.4             |
| Chile              | 2209 | 24.9 | 29.8 | 34.8 | 6.8  | 3.7                    | 34.8 | 0.0     | 1.9            | 1.8  | 31.3              | 38.4             |
| Chinese Taipei     | 2153 | 14.0 | 1.2  | 72.5 | 12.1 | 0.3                    | 72.5 | 0.0     | 0.0            | 0.2  | 72.1              | 72.8             |
| Cyprus             | 1158 | 26.3 | 6.8  | 53.4 | 12.1 | 1.3                    | 53.4 | 0.1     | 0.0            | 1.2  | 52.2              | 54.6             |
| Czech Republic     | 1307 | 5.7  | 2.8  | 88.8 | 2.3  | 0.3                    | 88.8 | 0.0     | 0.0            | 0.3  | 86.3              | 91.6             |
| England            | 1105 | 14.2 | 4.5  | 73.5 | 6.7  | 1.1                    | 73.5 | 0.0     | 0.6            | 0.4  | 70.0              | 76.6             |
| Finland            | 1088 | 13.8 | 3.5  | 71.5 | 10.6 | 0.6                    | 71.5 | 0.0     | 0.0            | 0.6  | 66.5              | 76.5             |
| Hong Kong, SAR     | 1943 | 13.0 | 2.0  | 67.3 | 17.5 | 0.1                    | 67.3 | 0.0     | 0.0            | 0.1  | 66.4              | 68.4             |
| Hungary            | 1196 | 12.0 | 3.3  | 77.8 | 5.6  | 1.3                    | 77.8 | 0.2     | 0.2            | 1.0  | 77.7              | 78.1             |
| Indonesia          | 2202 | 17.2 | 4.9  | 65.9 | 10.6 | 1.4                    | 65.9 | 0.0     | 0.0            | 1.3  | 65.5              | 66.3             |
| Iran, Islamic Rep. | 1990 | 11.1 | 6.1  | 74.0 | 6.5  | 2.4                    | 74.0 | 0.0     | 0.4            | 2.0  | 68.9              | 77.3             |
| Israel             | 1560 | 13.2 | 7.4  | 69.5 | 6.1  | 3.7                    | 69.5 | 0.0     | 0.8            | 2.8  | 68.9              | 70.3             |
| Italy              | 1255 | 20.2 | 5.2  | 64.3 | 8.2  | 2.1                    | 64.3 | 0.0     | 0.2            | 1.9  | 57.1              | 71.1             |
| Japan              | 1780 | 8.1  | 1.4  | 75.3 | 15.0 | 0.2                    | 75.3 | 0.1     | 0.1            | 0.1  | 74.0              | 76.6             |
| Jordan             | 1911 | 21.3 | 6.8  | 63.5 | 6.7  | 1.7                    | 63.5 | 0.2     | 0.1            | 1.4  | 65.4              | 61.9             |
| Korea, Rep. of     | 2296 | 9.7  | 1.4  | 80.5 | 8.3  | 0.1                    | 80.5 | 0.0     | 0.0            | 0.1  | 78.7              | 82.2             |
| Latvia (LSS)       | 1067 | 6.3  | 5.7  | 81.8 | 4.9  | 1.3                    | 81.8 | 0.1     | 0.4            | 0.8  | 81.8              | 81.9             |
| Lithuania          | 886  | 7.0  | 5.2  | 80.0 | 6.8  | 0.9                    | 80.0 | 0.0     | 0.1            | 0.8  | 80.5              | 79.5             |
| Macedonia, Rep. of | 1498 | 14.1 | 5.7  | 71.2 | 6.3  | 2.7                    | 71.2 | 0.1     | 0.4            | 2.3  | 71.9              | 70.5             |
| Malaysia           | 2086 | 29.3 | 3.6  | 60.3 | 5.6  | 1.2                    | 60.3 | 0.0     | 0.0            | 1.1  | 60.7              | 59.8             |
| Moldova            | 1374 | 14.6 | 5.0  | 71.7 | 7.1  | 1.7                    | 71.7 | 0.3     | 0.7            | 0.6  | 70.2              | 73.4             |
| Morocco            | 2063 | 19.2 | 17.6 | 42.4 | 15.4 | 5.3                    | 42.4 | 0.1     | 1.3            | 3.8  | 39.2              | 44.7             |
| Netherlands        | 1110 | 4.9  | 3.5  | 83.5 | 7.0  | 1.1                    | 83.5 | 0.0     | 0.6            | 0.5  | 80.6              | 86.4             |
| New Zealand        | 1351 | 20.0 | 6.5  | 61.4 | 11.5 | 0.6                    | 61.4 | 0.2     | 0.1            | 0.3  | 59.1              | 63.8             |
| Philippines        | 2464 | 24.7 | 15.2 | 44.8 | 14.4 | 1.0                    | 44.8 | 0.0     | 0.3            | 0.6  | 44.9              | 44.7             |
| Romania            | 1287 | 19.4 | 6.4  | 63.5 | 8.9  | 1.7                    | 63.5 | 0.2     | 0.2            | 1.2  | 59.9              | 67.0             |
| Russian Federation | 1617 | 10.1 | 5.5  | 77.8 | 4.3  | 2.2                    | 77.8 | 0.0     | 0.7            | 1.5  | 73.5              | 82.5             |
| Singapore          | 1871 | 18.7 | 5.2  | 68.5 | 7.2  | 0.4                    | 68.5 | 0.0     | 0.0            | 0.4  | 67.5              | 69.5             |
| Slovak Republic    | 1301 | 15.5 | 2.4  | 77.9 | 3.0  | 1.2                    | 77.9 | 0.0     | 0.4            | 0.8  | 77.3              | 78.6             |
| Slovenia           | 1166 | 8.1  | 5.2  | 78.0 | 7.5  | 1.2                    | 78.0 | 0.1     | 0.0            | 1.1  | 76.7              | 79.4             |
| South Africa       | 3059 | 16.2 | 13.9 | 35.7 | 30.7 | 3.6                    | 35.7 | 0.2     | 1.5            | 1.8  | 33.5              | 38.1             |
| Thailand           | 2150 | 7.7  | 5.6  | 82.0 | 4.4  | 0.3                    | 82.0 | 0.0     | 0.0            | 0.3  | 81.9              | 82.2             |
| Tunisia            | 1884 | 11.4 | 5.9  | 76.0 | 3.7  | 2.9                    | 76.0 | 0.7     | 0.3            | 1.9  | 75.3              | 76.8             |
| Turkey             | 2942 | 27.5 | 8.8  | 52.6 | 9.0  | 2.1                    | 52.6 | 0.0     | 0.1            | 2.0  | 50.9              | 53.8             |
| United States      | 3354 | 15.1 | 4.7  | 70.6 | 9.0  | 0.6                    | 70.6 | 0.0     | 0.1            | 0.5  | 68.8              | 72.3             |
| International Avg. | .    | 14.8 | 6.2  | 68.8 | 8.7  | 1.5                    | 68.8 | 0.1     | 0.3            | 1.1  | 66.9              | 70.6             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent



Science: Life Science  
 Label: Seed development from plant part ( S012024 - D06 )  
 Item Type = MC Key = A

| COUNTRY            | N    | A    | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 1517 | 68.4 | 1.7  | 21.4 | 8.0  | 0.4                    | 68.4 | 0.1     | 0.0            | 0.3  | 66.8              | 70.0             |
| Belgium (Flemish)  | 1978 | 80.5 | 0.9  | 10.7 | 7.7  | 0.2                    | 80.5 | 0.1     | 0.0            | 0.1  | 81.1              | 79.8             |
| Bulgaria           | 1228 | 77.5 | 0.8  | 18.0 | 2.7  | 1.0                    | 77.5 | 0.3     | 0.1            | 0.6  | 76.5              | 78.4             |
| Canada             | 3273 | 61.3 | 4.2  | 24.8 | 9.5  | 0.3                    | 61.3 | 0.1     | 0.0            | 0.2  | 62.8              | 59.9             |
| Chile              | 2209 | 57.0 | 2.8  | 25.9 | 11.1 | 3.2                    | 57.0 | 0.0     | 1.9            | 1.3  | 54.1              | 60.1             |
| Chinese Taipei     | 2154 | 62.6 | 3.3  | 21.2 | 12.7 | 0.2                    | 62.6 | 0.0     | 0.0            | 0.2  | 60.2              | 64.9             |
| Cyprus             | 1159 | 57.0 | 1.5  | 15.0 | 25.6 | 0.9                    | 57.0 | 0.0     | 0.0            | 0.9  | 53.4              | 60.2             |
| Czech Republic     | 1307 | 93.9 | 1.1  | 3.2  | 1.4  | 0.5                    | 93.9 | 0.2     | 0.0            | 0.2  | 94.8              | 92.9             |
| England            | 1105 | 63.3 | 1.4  | 19.6 | 14.2 | 1.5                    | 63.3 | 0.1     | 0.6            | 0.7  | 62.5              | 64.1             |
| Finland            | 1088 | 81.5 | 1.9  | 12.8 | 3.2  | 0.6                    | 81.5 | 0.0     | 0.0            | 0.5  | 81.0              | 82.1             |
| Hong Kong, SAR     | 1943 | 69.0 | 1.3  | 20.6 | 8.9  | 0.1                    | 69.0 | 0.0     | 0.0            | 0.1  | 66.0              | 72.0             |
| Hungary            | 1196 | 87.5 | 0.9  | 7.9  | 2.8  | 0.9                    | 87.5 | 0.1     | 0.2            | 0.7  | 87.0              | 87.8             |
| Indonesia          | 2202 | 79.8 | 2.1  | 9.3  | 8.3  | 0.5                    | 79.8 | 0.1     | 0.0            | 0.4  | 81.0              | 78.6             |
| Iran, Islamic Rep. | 1990 | 68.1 | 3.4  | 16.4 | 10.2 | 1.9                    | 68.1 | 0.0     | 0.4            | 1.5  | 67.2              | 68.6             |
| Israel             | 1560 | 51.6 | 3.7  | 30.0 | 11.6 | 3.2                    | 51.6 | 0.4     | 0.8            | 2.0  | 49.6              | 53.7             |
| Italy              | 1255 | 82.2 | 1.0  | 13.5 | 2.6  | 0.6                    | 82.2 | 0.0     | 0.2            | 0.4  | 79.8              | 84.6             |
| Japan              | 1780 | 82.9 | 2.1  | 5.3  | 9.5  | 0.1                    | 82.9 | 0.0     | 0.1            | 0.1  | 85.2              | 80.7             |
| Jordan             | 1911 | 66.7 | 3.2  | 21.1 | 7.4  | 1.5                    | 66.7 | 0.5     | 0.1            | 0.9  | 69.2              | 64.6             |
| Korea, Rep. of     | 2296 | 77.5 | 4.4  | 11.9 | 6.1  | 0.1                    | 77.5 | 0.0     | 0.0            | 0.1  | 73.4              | 81.5             |
| Latvia (LSS)       | 1067 | 92.3 | 0.3  | 4.6  | 1.6  | 1.2                    | 92.3 | 0.6     | 0.5            | 0.1  | 94.3              | 89.9             |
| Lithuania          | 886  | 88.6 | 0.2  | 7.1  | 2.4  | 1.7                    | 88.6 | 0.0     | 0.1            | 1.6  | 89.5              | 87.5             |
| Macedonia, Rep. of | 1498 | 80.0 | 0.7  | 14.9 | 2.8  | 1.6                    | 80.0 | 0.1     | 0.4            | 1.1  | 82.0              | 78.0             |
| Malaysia           | 2086 | 67.4 | 2.7  | 17.1 | 11.9 | 1.0                    | 67.4 | 0.0     | 0.0            | 0.9  | 67.5              | 67.3             |
| Moldova            | 1377 | 82.2 | 0.6  | 13.1 | 3.0  | 1.1                    | 82.2 | 0.0     | 0.7            | 0.3  | 83.2              | 81.1             |
| Morocco            | 2063 | 34.1 | 13.1 | 35.0 | 14.2 | 3.6                    | 34.1 | 0.1     | 1.6            | 1.9  | 32.7              | 35.0             |
| Netherlands        | 1110 | 71.5 | 2.5  | 13.2 | 11.8 | 1.0                    | 71.5 | 0.0     | 0.6            | 0.5  | 68.9              | 74.3             |
| New Zealand        | 1351 | 65.2 | 2.6  | 24.0 | 7.3  | 0.8                    | 65.2 | 0.1     | 0.1            | 0.7  | 63.9              | 66.5             |
| Philippines        | 2464 | 39.3 | 5.5  | 43.7 | 10.2 | 1.3                    | 39.3 | 0.0     | 0.3            | 1.0  | 38.9              | 39.8             |
| Romania            | 1288 | 85.0 | 2.0  | 9.5  | 2.5  | 1.0                    | 85.0 | 0.1     | 0.2            | 0.7  | 86.1              | 84.0             |
| Russian Federation | 1617 | 86.2 | 0.4  | 9.0  | 2.8  | 1.6                    | 86.2 | 0.3     | 0.7            | 0.5  | 88.0              | 84.2             |
| Singapore          | 1871 | 81.8 | 1.2  | 13.1 | 3.9  | 0.2                    | 81.8 | 0.0     | 0.0            | 0.2  | 81.8              | 81.8             |
| Slovak Republic    | 1301 | 92.9 | 1.0  | 3.4  | 2.0  | 0.7                    | 92.9 | 0.0     | 0.4            | 0.3  | 92.4              | 93.5             |
| Slovenia           | 1166 | 83.7 | 1.0  | 11.0 | 3.7  | 0.6                    | 83.7 | 0.2     | 0.0            | 0.3  | 83.9              | 83.6             |
| South Africa       | 3059 | 36.3 | 8.0  | 38.4 | 14.1 | 3.1                    | 36.3 | 0.5     | 1.5            | 1.1  | 33.7              | 39.3             |
| Thailand           | 2150 | 68.9 | 2.5  | 23.8 | 4.5  | 0.3                    | 68.9 | 0.0     | 0.0            | 0.3  | 66.2              | 72.2             |
| Tunisia            | 1884 | 64.8 | 1.9  | 24.6 | 5.8  | 2.8                    | 64.8 | 1.3     | 0.4            | 1.1  | 61.5              | 68.2             |
| Turkey             | 2942 | 56.0 | 2.8  | 31.6 | 8.7  | 0.9                    | 56.0 | 0.0     | 0.1            | 0.7  | 53.2              | 58.0             |
| United States      | 3354 | 56.8 | 4.2  | 27.6 | 10.6 | 0.8                    | 56.8 | 0.1     | 0.1            | 0.7  | 55.2              | 58.3             |
| International Avg. | .    | 71.1 | 2.5  | 17.7 | 7.6  | 1.1                    | 71.1 | 0.1     | 0.3            | 0.7  | 70.4              | 71.8             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Physics  
 Label: Particles in nucleus of atom ( S012025 - E07 )  
 Item Type = MC Key = B

| COUNTRY            | N    | A    | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 1504 | 11.3 | 48.8 | 20.3 | 18.4 | 1.2                    | 48.8 | 0.0     | 0.0            | 1.2  | 49.5              | 48.0             |
| Belgium (Flemish)  | 1962 | 10.4 | 26.6 | 16.8 | 42.0 | 4.3                    | 26.6 | 0.1     | 0.1            | 4.1  | 21.9              | 31.1             |
| Bulgaria           | 1222 | 2.7  | 77.1 | 17.4 | 1.5  | 1.4                    | 77.1 | 0.1     | 0.0            | 1.3  | 78.3              | 75.8             |
| Canada             | 3298 | 13.7 | 36.8 | 18.6 | 29.7 | 1.2                    | 36.8 | 0.0     | 0.1            | 1.0  | 37.2              | 36.4             |
| Chile              | 2197 | 12.0 | 39.3 | 20.6 | 18.6 | 9.5                    | 39.3 | 0.0     | 3.3            | 6.2  | 38.5              | 40.0             |
| Chinese Taipei     | 2176 | 1.4  | 72.8 | 20.1 | 5.4  | 0.3                    | 72.8 | 0.0     | 0.0            | 0.2  | 73.4              | 72.2             |
| Cyprus             | 1164 | 6.2  | 37.1 | 38.6 | 13.1 | 5.1                    | 37.1 | 0.3     | 0.1            | 4.7  | 37.5              | 36.6             |
| Czech Republic     | 1299 | 3.6  | 71.8 | 19.7 | 3.6  | 1.4                    | 71.8 | 0.0     | 0.7            | 0.7  | 70.7              | 73.0             |
| England            | 1102 | 18.6 | 39.7 | 21.9 | 19.3 | 0.5                    | 39.7 | 0.0     | 0.1            | 0.4  | 38.4              | 41.0             |
| Finland            | 1091 | 4.4  | 49.9 | 32.4 | 12.0 | 1.2                    | 49.9 | 0.0     | 0.1            | 1.1  | 50.3              | 49.6             |
| Hong Kong, SAR     | 1950 | 6.6  | 31.0 | 43.0 | 19.0 | 0.4                    | 31.0 | 0.0     | 0.1            | 0.4  | 30.9              | 31.1             |
| Hungary            | 1203 | 2.5  | 52.5 | 39.2 | 4.1  | 1.7                    | 52.5 | 0.2     | 0.6            | 0.9  | 53.2              | 51.9             |
| Indonesia          | 2199 | 9.4  | 39.9 | 23.3 | 25.2 | 2.1                    | 39.9 | 0.0     | 0.3            | 1.9  | 40.1              | 39.8             |
| Iran, Islamic Rep. | 1974 | 14.1 | 30.9 | 39.1 | 12.5 | 3.3                    | 30.9 | 0.0     | 0.3            | 3.0  | 28.2              | 32.8             |
| Israel             | 1577 | 5.2  | 47.6 | 35.1 | 8.4  | 3.7                    | 47.6 | 0.1     | 0.8            | 2.7  | 48.0              | 47.2             |
| Italy              | 1254 | 9.5  | 47.3 | 18.7 | 21.0 | 3.5                    | 47.3 | 0.0     | 0.2            | 3.3  | 46.8              | 47.9             |
| Japan              | 1774 | 9.7  | 28.9 | 35.8 | 24.7 | 0.9                    | 28.9 | 0.0     | 0.1            | 0.8  | 27.2              | 30.6             |
| Jordan             | 1884 | 8.3  | 46.4 | 25.0 | 18.0 | 2.3                    | 46.4 | 0.3     | 0.1            | 1.9  | 50.5              | 42.7             |
| Korea, Rep. of     | 2294 | 10.5 | 45.3 | 29.9 | 14.2 | 0.1                    | 45.3 | 0.0     | 0.0            | 0.1  | 43.6              | 46.8             |
| Latvia (LSS)       | 1088 | 7.0  | 34.4 | 31.5 | 22.9 | 4.3                    | 34.4 | 0.4     | 0.3            | 3.5  | 35.1              | 33.6             |
| Lithuania          | 900  | 5.3  | 51.2 | 31.8 | 9.2  | 2.6                    | 51.2 | 0.0     | 0.0            | 2.6  | 54.1              | 47.9             |
| Macedonia, Rep. of | 1506 | 4.6  | 71.3 | 15.1 | 4.9  | 4.1                    | 71.3 | 0.1     | 0.8            | 3.3  | 72.5              | 70.2             |
| Malaysia           | 2093 | 19.2 | 21.9 | 11.0 | 45.9 | 2.0                    | 21.9 | 0.0     | 0.2            | 1.8  | 19.6              | 24.7             |
| Moldova            | 1388 | 11.9 | 52.9 | 19.1 | 14.3 | 1.8                    | 52.9 | 0.1     | 0.5            | 1.2  | 53.6              | 52.1             |
| Morocco            | 2011 | 15.9 | 28.4 | 27.8 | 14.8 | 13.2                   | 28.4 | 0.9     | 2.3            | 9.9  | 29.7              | 27.3             |
| Netherlands        | 1123 | 14.0 | 38.7 | 18.1 | 27.2 | 1.9                    | 38.7 | 0.1     | 0.0            | 1.8  | 39.0              | 38.4             |
| New Zealand        | 1356 | 14.4 | 38.9 | 22.6 | 23.1 | 1.0                    | 38.9 | 0.1     | 0.2            | 0.6  | 42.9              | 35.1             |
| Philippines        | 2435 | 12.0 | 38.4 | 26.5 | 22.2 | 0.8                    | 38.4 | 0.0     | 0.3            | 0.5  | 41.4              | 35.0             |
| Romania            | 1273 | 4.6  | 65.7 | 17.7 | 9.4  | 2.7                    | 65.7 | 0.3     | 0.3            | 2.0  | 68.0              | 63.7             |
| Russian Federation | 1640 | 4.7  | 63.8 | 19.5 | 9.1  | 2.9                    | 63.8 | 0.1     | 0.9            | 2.0  | 66.7              | 60.8             |
| Singapore          | 1847 | 11.8 | 43.0 | 27.6 | 17.2 | 0.4                    | 43.0 | 0.0     | 0.0            | 0.4  | 40.3              | 45.6             |
| Slovak Republic    | 1298 | 2.5  | 77.9 | 15.1 | 3.2  | 1.4                    | 77.9 | 0.0     | 0.2            | 1.2  | 79.5              | 76.2             |
| Slovenia           | 1164 | 3.2  | 49.0 | 37.8 | 8.5  | 1.5                    | 49.0 | 0.1     | 0.1            | 1.2  | 49.7              | 48.1             |
| South Africa       | 3033 | 24.6 | 27.0 | 20.3 | 24.5 | 3.6                    | 27.0 | 0.3     | 1.2            | 2.0  | 25.9              | 28.2             |
| Thailand           | 2145 | 6.9  | 41.1 | 23.7 | 27.5 | 0.7                    | 41.1 | 0.0     | 0.3            | 0.4  | 44.0              | 37.8             |
| Tunisia            | 1890 | 7.9  | 36.3 | 34.8 | 13.7 | 7.3                    | 36.3 | 0.8     | 1.8            | 4.7  | 37.3              | 35.3             |
| Turkey             | 2926 | 8.9  | 57.1 | 21.1 | 11.3 | 1.6                    | 57.1 | 0.0     | 0.1            | 1.5  | 62.9              | 53.1             |
| United States      | 3380 | 8.8  | 56.3 | 20.3 | 14.0 | 0.7                    | 56.3 | 0.0     | 0.1            | 0.5  | 58.4              | 54.2             |
| International Avg. | .    | 9.2  | 46.4 | 25.2 | 16.7 | 2.6                    | 46.4 | 0.1     | 0.4            | 2.0  | 47.0              | 45.8             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Life Science  
 Label: Son inherits traits ( S012026 - E08 )  
 Item Type = MC Key = C

| COUNTRY            | N    | A    | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 1504 | 10.3 | 1.8  | 75.5 | 11.6 | 0.8                    | 75.5 | 0.0     | 0.0            | 0.7  | 75.9              | 75.1             |
| Belgium (Flemish)  | 1962 | 1.4  | 0.2  | 93.1 | 5.2  | 0.2                    | 93.1 | 0.0     | 0.1            | 0.0  | 95.6              | 90.5             |
| Bulgaria           | 1222 | 1.7  | 1.8  | 88.4 | 6.9  | 1.2                    | 88.4 | 0.2     | 0.0            | 0.9  | 90.8              | 86.0             |
| Canada             | 3298 | 4.1  | 1.1  | 86.8 | 7.4  | 0.7                    | 86.8 | 0.0     | 0.2            | 0.5  | 90.4              | 83.2             |
| Chile              | 2197 | 1.1  | 0.9  | 82.5 | 10.9 | 4.6                    | 82.5 | 0.0     | 3.5            | 1.1  | 85.6              | 79.4             |
| Chinese Taipei     | 2176 | 2.1  | 0.5  | 92.4 | 4.8  | 0.2                    | 92.4 | 0.0     | 0.0            | 0.1  | 93.1              | 91.7             |
| Cyprus             | 1168 | 2.5  | 0.9  | 85.8 | 10.4 | 0.4                    | 85.8 | 0.0     | 0.1            | 0.3  | 88.2              | 83.2             |
| Czech Republic     | 1299 | 0.8  | 0.2  | 89.4 | 8.7  | 0.9                    | 89.4 | 0.0     | 0.7            | 0.2  | 89.3              | 89.6             |
| England            | 1102 | 4.4  | 1.3  | 87.6 | 6.1  | 0.6                    | 87.6 | 0.0     | 0.1            | 0.5  | 88.0              | 87.2             |
| Finland            | 1091 | 1.7  | 0.1  | 93.4 | 4.2  | 0.6                    | 93.4 | 0.0     | 0.1            | 0.5  | 95.5              | 91.3             |
| Hong Kong, SAR     | 1950 | 2.9  | 1.0  | 86.0 | 10.1 | 0.1                    | 86.0 | 0.0     | 0.1            | 0.1  | 88.3              | 83.7             |
| Hungary            | 1203 | 1.1  | 0.8  | 87.2 | 10.0 | 0.9                    | 87.2 | 0.0     | 0.6            | 0.3  | 87.8              | 87.2             |
| Indonesia          | 2199 | 8.0  | 2.6  | 49.3 | 38.9 | 1.1                    | 49.3 | 0.0     | 0.3            | 0.9  | 48.8              | 49.9             |
| Iran, Islamic Rep. | 1974 | 10.5 | 1.3  | 59.5 | 26.3 | 2.3                    | 59.5 | 0.0     | 0.3            | 2.0  | 61.5              | 58.1             |
| Israel             | 1577 | 3.2  | 1.9  | 79.6 | 13.4 | 1.9                    | 79.6 | 0.1     | 0.9            | 0.9  | 81.7              | 77.6             |
| Italy              | 1254 | 2.1  | 0.7  | 84.7 | 11.7 | 0.9                    | 84.7 | 0.1     | 0.2            | 0.6  | 88.6              | 80.6             |
| Japan              | 1774 | 10.4 | 3.1  | 70.8 | 15.3 | 0.3                    | 70.8 | 0.0     | 0.2            | 0.2  | 70.6              | 71.0             |
| Jordan             | 1884 | 10.5 | 2.2  | 61.0 | 25.4 | 1.0                    | 61.0 | 0.4     | 0.1            | 0.5  | 64.6              | 57.8             |
| Korea, Rep. of     | 2294 | 5.6  | 4.3  | 73.2 | 16.9 | 0.0                    | 73.2 | 0.0     | 0.0            | 0.0  | 73.0              | 73.4             |
| Latvia (LSS)       | 1088 | 1.6  | 1.0  | 87.0 | 9.6  | 0.9                    | 87.0 | 0.2     | 0.3            | 0.4  | 91.2              | 82.3             |
| Lithuania          | 900  | 2.1  | 0.5  | 82.9 | 13.5 | 1.0                    | 82.9 | 0.0     | 0.1            | 0.9  | 88.7              | 76.4             |
| Macedonia, Rep. of | 1506 | 5.1  | 1.5  | 76.7 | 13.9 | 2.8                    | 76.7 | 0.3     | 0.8            | 1.7  | 82.0              | 71.7             |
| Malaysia           | 2093 | 7.3  | 1.0  | 44.4 | 46.6 | 0.7                    | 44.4 | 0.1     | 0.2            | 0.5  | 45.4              | 43.2             |
| Moldova            | 1387 | 8.1  | 1.1  | 73.6 | 16.3 | 1.0                    | 73.6 | 0.1     | 0.5            | 0.4  | 76.9              | 69.6             |
| Morocco            | 2011 | 21.6 | 4.9  | 49.0 | 16.4 | 8.2                    | 49.0 | 1.6     | 2.5            | 4.0  | 49.0              | 49.1             |
| Netherlands        | 1123 | 3.1  | 0.3  | 92.2 | 3.8  | 0.6                    | 92.2 | 0.0     | 0.0            | 0.6  | 92.1              | 92.3             |
| New Zealand        | 1356 | 11.0 | 4.1  | 69.2 | 14.7 | 1.1                    | 69.2 | 0.1     | 0.2            | 0.8  | 71.3              | 67.1             |
| Philippines        | 2435 | 5.9  | 4.3  | 61.1 | 27.5 | 1.2                    | 61.1 | 0.0     | 0.3            | 0.9  | 63.5              | 58.3             |
| Romania            | 1272 | 2.5  | 2.0  | 84.1 | 9.8  | 1.7                    | 84.1 | 0.8     | 0.3            | 0.5  | 88.5              | 80.1             |
| Russian Federation | 1641 | 3.0  | 0.6  | 87.2 | 7.7  | 1.5                    | 87.2 | 0.1     | 1.0            | 0.4  | 89.4              | 84.8             |
| Singapore          | 1847 | 13.1 | 2.5  | 67.3 | 16.3 | 0.8                    | 67.3 | 0.0     | 0.0            | 0.8  | 70.4              | 64.4             |
| Slovak Republic    | 1298 | 1.5  | 0.1  | 90.1 | 7.5  | 0.7                    | 90.1 | 0.0     | 0.2            | 0.5  | 91.2              | 89.0             |
| Slovenia           | 1164 | 0.6  | 0.7  | 91.3 | 6.9  | 0.6                    | 91.3 | 0.1     | 0.1            | 0.4  | 93.9              | 88.3             |
| South Africa       | 3032 | 13.5 | 11.1 | 51.0 | 21.3 | 3.0                    | 51.0 | 0.3     | 1.3            | 1.4  | 50.8              | 51.3             |
| Thailand           | 2145 | 4.2  | 1.1  | 69.4 | 24.5 | 0.8                    | 69.4 | 0.0     | 0.3            | 0.5  | 72.2              | 66.1             |
| Tunisia            | 1891 | 5.9  | 1.6  | 62.7 | 25.4 | 4.4                    | 62.7 | 1.7     | 2.0            | 0.7  | 64.6              | 60.9             |
| Turkey             | 2926 | 9.2  | 3.2  | 62.7 | 23.5 | 1.4                    | 62.7 | 0.0     | 0.1            | 1.2  | 64.3              | 61.7             |
| United States      | 3380 | 3.4  | 2.0  | 88.1 | 5.2  | 1.2                    | 88.1 | 0.0     | 0.1            | 1.1  | 90.3              | 85.8             |
| International Avg. | .    | 5.5  | 1.8  | 76.7 | 14.6 | 1.4                    | 76.7 | 0.2     | 0.5            | 0.7  | 78.8              | 74.7             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Earth Science  
 Label: Time/temperature table ( S012027 - E09 )  
 Item Type = MC Key = D

| COUNTRY            | N    | A    | B    | C    | D    | E    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 1504 | 0.9  | 3.9  | 2.5  | 88.4 | 3.9  | 0.4                    | 88.4 | 0.0     | 0.0            | 0.4  | 88.9              | 87.9             |
| Belgium (Flemish)  | 1962 | 0.5  | 2.2  | 1.7  | 91.6 | 3.0  | 1.0                    | 91.6 | 0.0     | 0.1            | 0.9  | 92.7              | 90.5             |
| Bulgaria           | 1222 | 3.6  | 7.1  | 4.4  | 77.9 | 4.6  | 2.5                    | 77.9 | 0.4     | 0.0            | 2.1  | 79.9              | 75.9             |
| Canada             | 3297 | 1.5  | 10.3 | 1.6  | 81.0 | 4.9  | 0.6                    | 81.0 | 0.1     | 0.2            | 0.4  | 80.8              | 81.3             |
| Chile              | 2197 | 3.5  | 9.0  | 6.4  | 70.5 | 5.1  | 5.6                    | 70.5 | 0.0     | 3.8            | 1.8  | 72.3              | 68.6             |
| Chinese Taipei     | 2176 | 1.6  | 2.3  | 3.6  | 89.3 | 3.0  | 0.2                    | 89.3 | 0.0     | 0.0            | 0.1  | 90.1              | 88.6             |
| Cyprus             | 1167 | 3.4  | 6.2  | 3.9  | 79.1 | 6.6  | 0.7                    | 79.1 | 0.2     | 0.1            | 0.4  | 82.2              | 75.8             |
| Czech Republic     | 1300 | 1.2  | 3.1  | 3.3  | 86.5 | 4.4  | 1.5                    | 86.5 | 0.1     | 0.7            | 0.7  | 85.3              | 87.9             |
| England            | 1102 | 1.1  | 8.6  | 1.7  | 84.2 | 3.9  | 0.5                    | 84.2 | 0.0     | 0.1            | 0.4  | 81.6              | 86.5             |
| Finland            | 1091 | 2.3  | 4.5  | 1.9  | 88.3 | 1.8  | 1.3                    | 88.3 | 0.0     | 0.1            | 1.2  | 88.9              | 87.7             |
| Hong Kong, SAR     | 1949 | 0.8  | 2.4  | 3.9  | 89.8 | 2.8  | 0.2                    | 89.8 | 0.0     | 0.1            | 0.2  | 90.9              | 88.8             |
| Hungary            | 1203 | 0.9  | 2.9  | 2.9  | 88.6 | 2.6  | 2.2                    | 88.6 | 0.6     | 0.7            | 0.9  | 87.9              | 89.7             |
| Indonesia          | 2199 | 15.6 | 28.9 | 5.3  | 45.3 | 3.8  | 1.1                    | 45.3 | 0.1     | 0.4            | 0.6  | 40.4              | 50.5             |
| Iran, Islamic Rep. | 1974 | 6.5  | 27.8 | 5.4  | 51.7 | 5.1  | 3.4                    | 51.7 | 0.0     | 0.3            | 3.1  | 47.7              | 54.6             |
| Israel             | 1577 | 3.5  | 10.9 | 5.8  | 72.5 | 4.3  | 2.9                    | 72.5 | 0.2     | 0.9            | 1.9  | 72.7              | 72.3             |
| Italy              | 1254 | 2.9  | 13.1 | 3.8  | 76.0 | 3.1  | 1.1                    | 76.0 | 0.0     | 0.3            | 0.8  | 74.8              | 77.3             |
| Japan              | 1774 | 0.3  | 1.0  | 1.5  | 96.2 | 0.8  | 0.2                    | 96.2 | 0.0     | 0.2            | 0.0  | 97.5              | 95.0             |
| Jordan             | 1879 | 5.2  | 23.3 | 4.1  | 61.3 | 4.8  | 1.3                    | 61.3 | 0.5     | 0.1            | 0.7  | 60.4              | 62.2             |
| Korea, Rep. of     | 2294 | 2.5  | 7.6  | 4.6  | 83.2 | 2.1  | 0.1                    | 83.2 | 0.0     | 0.0            | 0.0  | 84.0              | 82.5             |
| Latvia (LSS)       | 1088 | 2.7  | 9.8  | 5.0  | 72.8 | 6.6  | 3.1                    | 72.8 | 0.7     | 0.3            | 2.1  | 74.7              | 70.8             |
| Lithuania          | 900  | 3.6  | 15.9 | 3.3  | 64.9 | 8.8  | 3.5                    | 64.9 | 0.0     | 0.1            | 3.4  | 65.5              | 64.2             |
| Macedonia, Rep. of | 1506 | 4.9  | 3.7  | 5.0  | 68.7 | 14.2 | 3.6                    | 68.7 | 0.6     | 0.8            | 2.2  | 71.5              | 66.1             |
| Malaysia           | 2093 | 3.5  | 10.5 | 3.1  | 80.3 | 1.9  | 0.7                    | 80.3 | 0.1     | 0.2            | 0.5  | 78.6              | 82.3             |
| Moldova            | 1165 | 9.6  | 19.5 | 5.6  | 47.3 | 15.8 | 2.2                    | 47.3 | 0.6     | 0.5            | 1.1  | 44.3              | 50.8             |
| Morocco            | 2006 | 8.6  | 16.9 | 7.0  | 49.2 | 7.5  | 10.9                   | 49.2 | 2.5     | 2.7            | 5.7  | 48.2              | 49.9             |
| Netherlands        | 1123 | 1.1  | 4.3  | 2.2  | 89.0 | 3.3  | 0.1                    | 89.0 | 0.0     | 0.0            | 0.1  | 89.7              | 88.1             |
| New Zealand        | 1356 | 1.4  | 6.2  | 2.3  | 86.8 | 2.9  | 0.5                    | 86.8 | 0.1     | 0.2            | 0.1  | 87.3              | 86.2             |
| Philippines        | 2435 | 17.8 | 38.1 | 7.1  | 27.9 | 8.3  | 0.8                    | 27.9 | 0.0     | 0.3            | 0.5  | 26.9              | 29.2             |
| Romania            | 44   | 0.0  | 5.1  | 5.1  | 85.7 | 4.1  | 0.0                    | 85.7 | 0.0     | 0.0            | 0.0  | 89.0              | 83.0             |
| Russian Federation | 1641 | 3.2  | 17.6 | 3.3  | 59.4 | 12.5 | 4.1                    | 59.4 | 0.1     | 1.0            | 3.0  | 57.0              | 61.9             |
| Singapore          | 1847 | 1.1  | 3.3  | 2.4  | 88.5 | 4.7  | 0.1                    | 88.5 | 0.0     | 0.0            | 0.1  | 87.5              | 89.4             |
| Slovak Republic    | 1298 | 1.8  | 4.5  | 5.5  | 81.5 | 5.0  | 1.7                    | 81.5 | 0.3     | 0.2            | 1.1  | 80.3              | 82.9             |
| Slovenia           | 1164 | 1.9  | 4.3  | 2.1  | 87.1 | 3.7  | 0.8                    | 87.1 | 0.1     | 0.1            | 0.6  | 87.8              | 86.4             |
| South Africa       | 3033 | 25.3 | 20.0 | 10.2 | 25.9 | 14.8 | 3.8                    | 25.9 | 1.0     | 1.5            | 1.2  | 24.1              | 27.9             |
| Thailand           | 2145 | 3.5  | 9.3  | 4.6  | 75.8 | 6.3  | 0.5                    | 75.8 | 0.0     | 0.3            | 0.2  | 76.4              | 75.1             |
| Tunisia            | 1887 | 2.1  | 8.3  | 2.4  | 80.2 | 2.0  | 5.0                    | 80.2 | 2.2     | 2.0            | 0.8  | 77.9              | 82.4             |
| Turkey             | 2926 | 5.6  | 13.6 | 5.3  | 66.1 | 8.4  | 1.0                    | 66.1 | 0.0     | 0.1            | 0.8  | 67.1              | 65.5             |
| United States      | 3380 | 2.5  | 7.7  | 3.5  | 79.0 | 6.8  | 0.5                    | 79.0 | 0.1     | 0.2            | 0.3  | 78.4              | 79.6             |
| International Avg. | .    | 4.1  | 10.4 | 4.0  | 74.1 | 5.5  | 1.8                    | 74.1 | 0.3     | 0.5            | 1.1  | 74.0              | 74.3             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Life Science  
 Label: Characteristics of animal groups ( S012028 - E10 )  
 Item Type = MC Key = A

| COUNTRY            | N    | A    | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 1504 | 70.2 | 5.5  | 15.0 | 8.4  | 1.0                    | 70.2 | 0.5     | 0.0            | 0.5  | 71.0              | 69.3             |
| Belgium (Flemish)  | 1962 | 59.3 | 5.9  | 19.8 | 13.4 | 1.7                    | 59.3 | 0.5     | 0.1            | 1.0  | 57.4              | 61.1             |
| Bulgaria           | 1222 | 48.8 | 12.4 | 28.3 | 6.9  | 3.7                    | 48.8 | 1.3     | 0.4            | 2.0  | 46.9              | 50.7             |
| Canada             | 3297 | 63.5 | 4.2  | 20.7 | 11.0 | 0.6                    | 63.5 | 0.0     | 0.2            | 0.4  | 63.0              | 63.9             |
| Chile              | 2197 | 33.0 | 12.2 | 26.8 | 21.1 | 6.9                    | 33.0 | 0.0     | 4.1            | 2.8  | 29.2              | 36.8             |
| Chinese Taipei     | 2176 | 69.2 | 5.4  | 18.6 | 6.6  | 0.3                    | 69.2 | 0.0     | 0.0            | 0.2  | 67.7              | 70.6             |
| Cyprus             | 1164 | 54.5 | 9.7  | 21.3 | 13.1 | 1.4                    | 54.5 | 0.1     | 0.2            | 1.1  | 52.7              | 56.3             |
| Czech Republic     | 1300 | 57.5 | 2.1  | 17.9 | 19.8 | 2.7                    | 57.5 | 1.2     | 0.7            | 0.8  | 56.5              | 58.8             |
| England            | 1102 | 69.1 | 5.7  | 12.8 | 10.6 | 1.9                    | 69.1 | 1.0     | 0.2            | 0.7  | 68.4              | 69.6             |
| Finland            | 1091 | 71.2 | 3.2  | 16.6 | 7.7  | 1.2                    | 71.2 | 0.0     | 0.1            | 1.2  | 72.5              | 69.8             |
| Hong Kong, SAR     | 1949 | 70.2 | 7.5  | 14.4 | 7.1  | 0.8                    | 70.2 | 0.2     | 0.1            | 0.5  | 69.9              | 70.5             |
| Hungary            | 1203 | 49.9 | 3.5  | 25.0 | 19.3 | 2.4                    | 49.9 | 0.6     | 0.8            | 0.9  | 44.1              | 56.5             |
| Indonesia          | 2199 | 30.4 | 7.1  | 50.1 | 11.3 | 1.1                    | 30.4 | 0.1     | 0.4            | 0.6  | 26.1              | 35.0             |
| Iran, Islamic Rep. | 1974 | 28.4 | 21.0 | 28.8 | 18.2 | 3.6                    | 28.4 | 0.0     | 0.4            | 3.2  | 22.6              | 32.4             |
| Israel             | 1577 | 56.3 | 9.5  | 19.0 | 9.8  | 5.5                    | 56.3 | 0.2     | 1.1            | 4.1  | 57.6              | 55.0             |
| Italy              | 1254 | 56.1 | 7.6  | 23.4 | 10.5 | 2.5                    | 56.1 | 0.0     | 0.6            | 1.9  | 54.4              | 57.9             |
| Japan              | 1774 | 83.2 | 2.4  | 8.2  | 5.5  | 0.6                    | 83.2 | 0.4     | 0.2            | 0.1  | 82.5              | 83.8             |
| Jordan             | 1879 | 24.0 | 15.6 | 38.8 | 19.6 | 2.0                    | 24.0 | 0.8     | 0.1            | 1.1  | 21.1              | 26.4             |
| Korea, Rep. of     | 2294 | 78.9 | 1.9  | 11.9 | 7.3  | 0.0                    | 78.9 | 0.0     | 0.0            | 0.0  | 75.0              | 82.6             |
| Latvia (LSS)       | 1088 | 57.5 | 7.9  | 23.3 | 7.8  | 3.4                    | 57.5 | 1.7     | 0.4            | 1.3  | 57.4              | 57.7             |
| Lithuania          | 900  | 37.5 | 11.7 | 31.7 | 9.7  | 9.5                    | 37.5 | 0.0     | 0.2            | 9.4  | 37.4              | 37.5             |
| Macedonia, Rep. of | 1506 | 35.0 | 17.3 | 29.4 | 11.2 | 7.1                    | 35.0 | 0.8     | 0.9            | 5.4  | 34.5              | 35.5             |
| Malaysia           | 2093 | 58.6 | 9.5  | 21.0 | 10.4 | 0.5                    | 58.6 | 0.0     | 0.2            | 0.3  | 55.8              | 61.9             |
| Moldova            | 1388 | 42.1 | 12.3 | 31.4 | 11.8 | 2.4                    | 42.1 | 0.9     | 0.7            | 0.8  | 39.8              | 44.8             |
| Morocco            | 2006 | 13.2 | 24.8 | 31.2 | 18.3 | 12.5                   | 13.2 | 2.4     | 3.4            | 6.7  | 11.4              | 14.6             |
| Netherlands        | 1123 | 69.3 | 2.0  | 11.2 | 17.1 | 0.3                    | 69.3 | 0.0     | 0.0            | 0.3  | 67.0              | 71.9             |
| New Zealand        | 1356 | 63.6 | 6.0  | 16.7 | 12.5 | 1.2                    | 63.6 | 0.1     | 0.2            | 0.8  | 65.8              | 61.4             |
| Philippines        | 2435 | 29.2 | 22.2 | 32.0 | 15.5 | 1.2                    | 29.2 | 0.1     | 0.3            | 0.8  | 30.2              | 28.1             |
| Romania            | 1273 | 32.5 | 21.2 | 28.7 | 11.2 | 6.5                    | 32.5 | 3.3     | 0.6            | 2.5  | 32.1              | 32.9             |
| Russian Federation | 1641 | 53.6 | 6.5  | 26.2 | 7.3  | 6.3                    | 53.6 | 2.6     | 1.5            | 2.1  | 52.6              | 54.8             |
| Singapore          | 1847 | 61.1 | 3.6  | 21.8 | 13.4 | 0.2                    | 61.1 | 0.0     | 0.0            | 0.2  | 53.9              | 68.0             |
| Slovak Republic    | 1298 | 64.9 | 4.8  | 20.3 | 6.7  | 3.2                    | 64.9 | 1.6     | 0.3            | 1.3  | 63.6              | 66.4             |
| Slovenia           | 1164 | 53.3 | 5.7  | 26.2 | 12.9 | 1.9                    | 53.3 | 1.1     | 0.2            | 0.6  | 52.3              | 54.6             |
| South Africa       | 3033 | 20.0 | 22.1 | 26.7 | 25.1 | 6.0                    | 20.0 | 1.3     | 1.7            | 3.0  | 20.0              | 20.1             |
| Thailand           | 2145 | 60.2 | 6.2  | 27.2 | 5.9  | 0.6                    | 60.2 | 0.0     | 0.3            | 0.3  | 59.7              | 60.7             |
| Tunisia            | 1887 | 41.3 | 7.6  | 16.6 | 26.9 | 7.7                    | 41.3 | 4.3     | 2.3            | 1.1  | 38.6              | 44.0             |
| Turkey             | 2926 | 37.0 | 15.8 | 21.2 | 24.4 | 1.6                    | 37.0 | 0.1     | 0.1            | 1.3  | 35.2              | 38.3             |
| United States      | 3380 | 59.4 | 7.2  | 19.4 | 12.9 | 1.1                    | 59.4 | 0.1     | 0.2            | 0.8  | 59.3              | 59.5             |
| International Avg. | .    | 51.7 | 9.4  | 23.1 | 12.8 | 3.0                    | 51.7 | 0.7     | 0.6            | 1.6  | 50.1              | 53.2             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Physics  
 Label: Shadow size from distance diagram ( S012029 - E11 )  
 Item Type = MC Key = D

| COUNTRY            | N    | A    | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 1504 | 12.0 | 15.5 | 13.0 | 58.1 | 1.4                    | 58.1 | 0.0     | 0.0            | 1.4  | 56.5              | 59.8             |
| Belgium (Flemish)  | 1962 | 12.4 | 10.7 | 9.5  | 64.6 | 2.8                    | 64.6 | 0.1     | 0.1            | 2.6  | 63.9              | 65.2             |
| Bulgaria           | 1222 | 11.5 | 14.2 | 8.4  | 58.3 | 7.6                    | 58.3 | 0.1     | 0.4            | 7.1  | 58.4              | 58.5             |
| Canada             | 3297 | 10.0 | 13.6 | 11.6 | 63.8 | 1.0                    | 63.8 | 0.0     | 0.2            | 0.8  | 63.9              | 64.0             |
| Chile              | 2197 | 14.8 | 15.4 | 15.2 | 42.9 | 11.7                   | 42.9 | 0.0     | 4.7            | 7.0  | 41.6              | 44.3             |
| Chinese Taipei     | 2175 | 12.8 | 10.7 | 9.5  | 66.4 | 0.6                    | 66.4 | 0.0     | 0.0            | 0.6  | 68.5              | 64.4             |
| Cyprus             | 1162 | 11.8 | 19.6 | 14.2 | 51.2 | 3.2                    | 51.2 | 0.0     | 0.2            | 3.0  | 53.2              | 49.1             |
| Czech Republic     | 1300 | 12.3 | 14.1 | 10.8 | 55.9 | 6.9                    | 55.9 | 0.1     | 0.8            | 6.0  | 53.4              | 58.9             |
| England            | 1102 | 12.5 | 13.6 | 12.3 | 60.3 | 1.4                    | 60.3 | 0.0     | 0.2            | 1.2  | 60.0              | 60.5             |
| Finland            | 1091 | 10.6 | 13.6 | 11.6 | 62.3 | 1.9                    | 62.3 | 0.0     | 0.1            | 1.8  | 56.4              | 68.5             |
| Hong Kong, SAR     | 1949 | 10.4 | 15.0 | 12.5 | 61.2 | 0.8                    | 61.2 | 0.1     | 0.1            | 0.7  | 59.0              | 63.3             |
| Hungary            | 1203 | 9.5  | 11.5 | 8.3  | 65.0 | 5.7                    | 65.0 | 0.2     | 0.8            | 4.7  | 61.8              | 68.5             |
| Indonesia          | 2199 | 12.9 | 15.7 | 9.6  | 59.4 | 2.5                    | 59.4 | 0.1     | 0.4            | 2.0  | 60.4              | 58.3             |
| Iran, Islamic Rep. | 1973 | 12.9 | 12.6 | 10.5 | 60.0 | 4.0                    | 60.0 | 0.0     | 0.5            | 3.4  | 62.3              | 58.5             |
| Israel             | 1577 | 10.6 | 15.4 | 12.3 | 56.9 | 4.8                    | 56.9 | 0.1     | 1.1            | 3.6  | 55.8              | 57.8             |
| Italy              | 1254 | 10.7 | 10.8 | 12.9 | 60.3 | 5.4                    | 60.3 | 0.0     | 0.7            | 4.6  | 59.5              | 61.2             |
| Japan              | 1774 | 12.2 | 8.9  | 8.0  | 70.3 | 0.5                    | 70.3 | 0.1     | 0.2            | 0.3  | 69.3              | 71.3             |
| Jordan             | 1891 | 12.0 | 16.2 | 11.6 | 57.4 | 2.8                    | 57.4 | 0.3     | 0.1            | 2.4  | 60.6              | 54.6             |
| Korea, Rep. of     | 2294 | 9.0  | 8.1  | 8.4  | 74.2 | 0.3                    | 74.2 | 0.0     | 0.0            | 0.2  | 75.5              | 73.0             |
| Latvia (LSS)       | 1088 | 8.3  | 11.7 | 10.5 | 63.3 | 6.2                    | 63.3 | 0.1     | 0.7            | 5.4  | 60.3              | 66.5             |
| Lithuania          | 900  | 10.3 | 14.1 | 7.0  | 58.9 | 9.8                    | 58.9 | 0.0     | 0.3            | 9.5  | 57.8              | 60.0             |
| Macedonia, Rep. of | 1506 | 9.4  | 15.8 | 10.0 | 54.9 | 9.8                    | 54.9 | 0.0     | 1.3            | 8.5  | 52.3              | 57.4             |
| Malaysia           | 2093 | 13.3 | 10.3 | 10.4 | 63.8 | 2.2                    | 63.8 | 0.0     | 0.4            | 1.8  | 65.8              | 61.5             |
| Moldova            | 1387 | 10.5 | 13.4 | 8.2  | 64.1 | 3.7                    | 64.1 | 0.1     | 0.7            | 2.9  | 64.0              | 64.2             |
| Morocco            | 2004 | 8.4  | 15.4 | 13.3 | 50.2 | 12.7                   | 50.2 | 1.4     | 3.7            | 7.6  | 50.9              | 49.7             |
| Netherlands        | 1123 | 10.3 | 14.1 | 12.1 | 62.6 | 0.8                    | 62.6 | 0.0     | 0.0            | 0.8  | 60.7              | 64.8             |
| New Zealand        | 1355 | 10.7 | 15.7 | 16.7 | 55.9 | 1.0                    | 55.9 | 0.0     | 0.2            | 0.7  | 54.5              | 57.2             |
| Philippines        | 2435 | 10.4 | 20.7 | 12.2 | 55.6 | 1.1                    | 55.6 | 0.0     | 0.4            | 0.7  | 58.0              | 52.9             |
| Romania            | 1273 | 9.3  | 12.0 | 9.0  | 66.1 | 3.6                    | 66.1 | 0.1     | 0.8            | 2.6  | 70.5              | 62.1             |
| Russian Federation | 1641 | 7.8  | 8.7  | 7.3  | 67.2 | 9.1                    | 67.2 | 0.2     | 1.5            | 7.3  | 66.9              | 67.4             |
| Singapore          | 1847 | 16.6 | 10.2 | 8.6  | 64.4 | 0.3                    | 64.4 | 0.0     | 0.0            | 0.3  | 66.6              | 62.2             |
| Slovak Republic    | 1298 | 10.9 | 13.0 | 12.5 | 56.0 | 7.6                    | 56.0 | 0.0     | 0.5            | 7.1  | 52.9              | 59.4             |
| Slovenia           | 1164 | 10.7 | 12.4 | 12.6 | 59.3 | 5.1                    | 59.3 | 0.1     | 0.2            | 4.7  | 57.4              | 61.4             |
| South Africa       | 3033 | 8.5  | 17.8 | 14.6 | 55.2 | 3.9                    | 55.2 | 0.3     | 2.4            | 1.2  | 56.2              | 54.1             |
| Thailand           | 2145 | 14.8 | 12.5 | 12.4 | 59.3 | 1.1                    | 59.3 | 0.0     | 0.3            | 0.8  | 60.0              | 58.4             |
| Tunisia            | 1889 | 12.5 | 12.9 | 11.2 | 57.0 | 6.5                    | 57.0 | 0.2     | 2.5            | 3.8  | 55.0              | 59.0             |
| Turkey             | 2926 | 12.1 | 19.4 | 17.0 | 47.0 | 4.5                    | 47.0 | 0.0     | 0.2            | 4.2  | 47.3              | 46.9             |
| United States      | 3380 | 10.2 | 17.2 | 17.0 | 54.1 | 1.5                    | 54.1 | 0.1     | 0.2            | 1.2  | 54.2              | 54.0             |
| International Avg. | .    | 11.2 | 13.7 | 11.4 | 59.6 | 4.1                    | 59.6 | 0.1     | 0.7            | 3.3  | 59.2              | 60.0             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Earth Science  
 Label: Stone in underground caves ( S012030 - E12 )  
 Item Type = MC Key = B

| COUNTRY            | N    | A    | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 1504 | 13.4 | 43.4 | 36.0 | 6.3  | 1.0                    | 43.4 | 0.0     | 0.0            | 1.0  | 41.9              | 44.9             |
| Belgium (Flemish)  | 1962 | 10.5 | 60.0 | 17.5 | 10.4 | 1.6                    | 60.0 | 0.1     | 0.1            | 1.4  | 57.1              | 62.8             |
| Bulgaria           | 1222 | 8.5  | 76.2 | 9.5  | 2.1  | 3.7                    | 76.2 | 0.6     | 0.9            | 2.3  | 74.7              | 77.8             |
| Canada             | 3297 | 21.0 | 43.3 | 29.3 | 5.6  | 0.7                    | 43.3 | 0.1     | 0.2            | 0.5  | 41.1              | 45.7             |
| Chile              | 2197 | 18.5 | 35.6 | 32.3 | 2.6  | 10.9                   | 35.6 | 0.0     | 6.0            | 4.9  | 34.1              | 37.2             |
| Chinese Taipei     | 2176 | 4.3  | 79.4 | 6.8  | 9.3  | 0.1                    | 79.4 | 0.0     | 0.1            | 0.0  | 78.9              | 79.9             |
| Cyprus             | 1167 | 6.9  | 65.1 | 16.0 | 10.4 | 1.6                    | 65.1 | 0.1     | 0.3            | 1.2  | 64.0              | 66.2             |
| Czech Republic     | 1300 | 5.7  | 70.4 | 19.1 | 2.0  | 2.8                    | 70.4 | 0.5     | 0.8            | 1.5  | 67.8              | 73.4             |
| England            | 1102 | 13.8 | 56.4 | 26.6 | 2.4  | 0.8                    | 56.4 | 0.0     | 0.3            | 0.5  | 53.2              | 59.3             |
| Finland            | 1091 | 22.6 | 39.8 | 21.6 | 15.1 | 0.9                    | 39.8 | 0.0     | 0.2            | 0.7  | 40.7              | 38.8             |
| Hong Kong, SAR     | .    | .    | .    | .    | .    | .                      | .    | .       | .              | .    | .                 | .                |
| Hungary            | 1203 | 1.8  | 86.6 | 5.6  | 3.5  | 2.5                    | 86.6 | 0.1     | 1.2            | 1.2  | 83.1              | 90.8             |
| Indonesia          | 2199 | 20.7 | 34.5 | 24.7 | 18.3 | 1.8                    | 34.5 | 0.1     | 0.6            | 1.2  | 35.2              | 33.7             |
| Iran, Islamic Rep. | 1973 | 13.2 | 48.8 | 20.8 | 14.2 | 3.0                    | 48.8 | 0.0     | 0.6            | 2.4  | 46.0              | 50.8             |
| Israel             | 1577 | 13.7 | 48.6 | 17.9 | 16.2 | 3.6                    | 48.6 | 0.4     | 1.2            | 2.0  | 47.5              | 49.7             |
| Italy              | 1254 | 13.1 | 58.7 | 9.6  | 15.6 | 3.1                    | 58.7 | 0.0     | 0.9            | 2.2  | 60.5              | 56.7             |
| Japan              | .    | .    | .    | .    | .    | .                      | .    | .       | .              | .    | .                 | .                |
| Jordan             | 1890 | 11.6 | 19.0 | 21.3 | 45.8 | 2.3                    | 19.0 | 0.6     | 0.1            | 1.5  | 19.3              | 18.7             |
| Korea, Rep. of     | 2294 | 21.1 | 71.3 | 4.4  | 3.1  | 0.0                    | 71.3 | 0.0     | 0.0            | 0.0  | 69.6              | 73.0             |
| Latvia (LSS)       | .    | .    | .    | .    | .    | .                      | .    | .       | .              | .    | .                 | .                |
| Lithuania          | 900  | 17.0 | 32.4 | 19.0 | 26.2 | 5.5                    | 32.4 | 0.0     | 0.3            | 5.1  | 32.4              | 32.3             |
| Macedonia, Rep. of | 1506 | 10.1 | 56.6 | 19.7 | 8.9  | 4.7                    | 56.6 | 0.0     | 1.6            | 3.1  | 57.9              | 55.5             |
| Malaysia           | 2093 | 29.4 | 58.6 | 7.3  | 3.5  | 1.1                    | 58.6 | 0.0     | 0.4            | 0.7  | 57.7              | 59.7             |
| Moldova            | 1388 | 21.9 | 37.2 | 26.0 | 12.0 | 3.0                    | 37.2 | 0.4     | 1.0            | 1.6  | 34.3              | 40.6             |
| Morocco            | 2006 | 22.4 | 15.1 | 30.8 | 21.0 | 10.7                   | 15.1 | 1.2     | 4.6            | 4.8  | 13.4              | 16.4             |
| Netherlands        | 1123 | 10.6 | 61.0 | 17.5 | 10.1 | 0.9                    | 61.0 | 0.0     | 0.0            | 0.8  | 58.6              | 63.6             |
| New Zealand        | 1355 | 18.1 | 46.1 | 30.2 | 4.9  | 0.7                    | 46.1 | 0.0     | 0.2            | 0.4  | 44.6              | 47.6             |
| Philippines        | 2435 | 24.0 | 34.3 | 26.5 | 14.0 | 1.2                    | 34.3 | 0.0     | 0.5            | 0.7  | 35.1              | 33.3             |
| Romania            | 1273 | 6.4  | 63.3 | 17.6 | 9.5  | 3.2                    | 63.3 | 1.2     | 1.0            | 1.0  | 64.5              | 62.3             |
| Russian Federation | 1641 | 16.1 | 43.7 | 19.0 | 15.4 | 5.9                    | 43.7 | 0.7     | 1.9            | 3.3  | 43.4              | 44.0             |
| Singapore          | 1847 | 22.2 | 44.2 | 18.1 | 15.1 | 0.4                    | 44.2 | 0.0     | 0.0            | 0.4  | 40.6              | 47.7             |
| Slovak Republic    | 1298 | 4.7  | 88.0 | 3.0  | 3.0  | 1.4                    | 88.0 | 0.0     | 0.6            | 0.8  | 87.5              | 88.5             |
| Slovenia           | 1164 | 1.6  | 94.9 | 2.0  | 0.9  | 0.5                    | 94.9 | 0.0     | 0.2            | 0.3  | 95.3              | 94.6             |
| South Africa       | 3032 | 16.0 | 28.8 | 42.6 | 8.3  | 4.3                    | 28.8 | 0.2     | 2.7            | 1.4  | 29.5              | 28.1             |
| Thailand           | 2145 | 22.8 | 39.8 | 11.7 | 24.8 | 1.0                    | 39.8 | 0.0     | 0.3            | 0.6  | 39.9              | 39.5             |
| Tunisia            | .    | .    | .    | .    | .    | .                      | .    | .       | .              | .    | .                 | .                |
| Turkey             | 2926 | 26.5 | 30.3 | 25.1 | 14.2 | 4.0                    | 30.3 | 0.0     | 0.3            | 3.7  | 29.8              | 30.7             |
| United States      | 3380 | 18.4 | 45.8 | 29.0 | 5.6  | 1.1                    | 45.8 | 0.1     | 0.4            | 0.7  | 41.6              | 50.1             |
| International Avg. | .    | 15.0 | 51.7 | 19.5 | 11.2 | 2.6                    | 51.7 | 0.2     | 0.9            | 1.6  | 50.6              | 52.8             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Life Science  
 Label: Characteristic of mammal ( S012031 - F01 )  
 Item Type = MC Key = B

| COUNTRY            | N    | A    | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 1509 | 3.9  | 62.6 | 19.4 | 13.7 | 0.5                    | 62.6 | 0.3     | 0.0            | 0.2  | 60.5              | 64.7             |
| Belgium (Flemish)  | 1963 | 5.3  | 70.4 | 12.9 | 11.1 | 0.2                    | 70.4 | 0.0     | 0.0            | 0.2  | 73.3              | 67.3             |
| Bulgaria           | 1232 | 4.8  | 84.8 | 4.4  | 3.4  | 2.6                    | 84.8 | 2.1     | 0.1            | 0.5  | 85.8              | 83.6             |
| Canada             | 3286 | 8.3  | 66.3 | 11.3 | 13.4 | 0.6                    | 66.3 | 0.4     | 0.1            | 0.1  | 65.8              | 66.8             |
| Chile              | 2183 | 7.7  | 68.4 | 7.0  | 13.3 | 3.6                    | 68.4 | 0.0     | 1.4            | 2.3  | 70.5              | 66.3             |
| Chinese Taipei     | 2176 | 3.2  | 80.5 | 9.1  | 7.0  | 0.2                    | 80.5 | 0.1     | 0.0            | 0.1  | 78.8              | 82.1             |
| Cyprus             | 1163 | 2.8  | 79.8 | 9.8  | 6.5  | 1.1                    | 79.8 | 0.4     | 0.1            | 0.7  | 81.6              | 78.1             |
| Czech Republic     | 1316 | 7.0  | 78.9 | 4.1  | 9.5  | 0.5                    | 78.9 | 0.0     | 0.2            | 0.3  | 79.6              | 78.1             |
| England            | 1121 | 17.6 | 52.2 | 13.7 | 15.4 | 1.1                    | 52.2 | 0.7     | 0.0            | 0.4  | 53.6              | 50.8             |
| Finland            | 1093 | 2.5  | 70.9 | 10.2 | 15.1 | 1.3                    | 70.9 | 0.0     | 0.0            | 1.3  | 74.1              | 67.7             |
| Hong Kong, SAR     | 1945 | 3.2  | 83.3 | 7.3  | 5.6  | 0.7                    | 83.3 | 0.0     | 0.0            | 0.7  | 83.0              | 83.5             |
| Hungary            | 1192 | 1.5  | 78.3 | 7.4  | 10.4 | 2.5                    | 78.3 | 1.8     | 0.4            | 0.4  | 80.1              | 76.4             |
| Indonesia          | 2187 | 4.4  | 64.1 | 13.8 | 16.4 | 1.2                    | 64.1 | 0.0     | 0.1            | 1.2  | 68.0              | 60.2             |
| Iran, Islamic Rep. | 1987 | 4.5  | 83.9 | 4.4  | 5.6  | 1.6                    | 83.9 | 0.0     | 0.0            | 1.5  | 84.8              | 83.2             |
| Israel             | 1554 | 5.6  | 60.2 | 10.0 | 21.0 | 3.2                    | 60.2 | 0.1     | 0.7            | 2.4  | 60.5              | 59.9             |
| Italy              | 1238 | 10.7 | 69.6 | 6.7  | 10.9 | 2.1                    | 69.6 | 0.0     | 0.2            | 2.0  | 71.3              | 67.7             |
| Japan              | 1787 | 2.2  | 85.9 | 4.7  | 6.8  | 0.3                    | 85.9 | 0.2     | 0.0            | 0.1  | 85.6              | 86.3             |
| Jordan             | 1891 | 9.0  | 63.2 | 14.2 | 12.3 | 1.4                    | 63.2 | 0.4     | 0.0            | 1.0  | 66.5              | 60.2             |
| Korea, Rep. of     | 2290 | 5.2  | 77.0 | 5.4  | 12.3 | 0.1                    | 77.0 | 0.0     | 0.0            | 0.1  | 75.3              | 78.8             |
| Latvia (LSS)       | 1082 | 1.6  | 80.0 | 7.6  | 9.8  | 1.1                    | 80.0 | 0.6     | 0.1            | 0.4  | 83.6              | 76.1             |
| Lithuania          | 879  | 1.2  | 70.3 | 10.2 | 16.4 | 1.8                    | 70.3 | 0.0     | 0.3            | 1.5  | 71.5              | 69.2             |
| Macedonia, Rep. of | 1516 | 9.7  | 70.1 | 9.3  | 6.9  | 4.0                    | 70.1 | 0.5     | 0.4            | 3.0  | 73.7              | 66.6             |
| Malaysia           | 2094 | 5.1  | 78.4 | 7.6  | 8.3  | 0.6                    | 78.4 | 0.0     | 0.0            | 0.5  | 79.3              | 77.3             |
| Moldova            | 1385 | 9.9  | 68.0 | 8.6  | 11.6 | 1.9                    | 68.0 | 1.0     | 0.0            | 0.9  | 67.6              | 68.3             |
| Morocco            | 2015 | 8.6  | 45.5 | 13.4 | 27.3 | 5.2                    | 45.5 | 1.7     | 0.7            | 2.7  | 47.9              | 43.8             |
| Netherlands        | 1114 | 10.0 | 62.1 | 20.9 | 6.9  | 0.1                    | 62.1 | 0.1     | 0.0            | 0.1  | 64.3              | 59.7             |
| New Zealand        | 1370 | 8.1  | 53.8 | 14.4 | 22.7 | 1.0                    | 53.8 | 0.6     | 0.0            | 0.4  | 52.9              | 54.7             |
| Philippines        | 2467 | 26.9 | 30.4 | 23.5 | 18.3 | 0.9                    | 30.4 | 0.1     | 0.0            | 0.8  | 29.7              | 31.2             |
| Romania            | 1282 | 5.3  | 72.6 | 6.8  | 13.0 | 2.3                    | 72.6 | 1.4     | 0.1            | 0.8  | 73.7              | 71.5             |
| Russian Federation | 1615 | 2.5  | 76.0 | 6.4  | 12.7 | 2.4                    | 76.0 | 1.1     | 0.2            | 1.2  | 78.9              | 72.9             |
| Singapore          | 1860 | 4.2  | 76.6 | 8.5  | 10.6 | 0.1                    | 76.6 | 0.0     | 0.0            | 0.1  | 75.6              | 77.7             |
| Slovak Republic    | 1306 | 3.0  | 80.7 | 5.4  | 9.8  | 1.1                    | 80.7 | 0.0     | 0.0            | 1.1  | 80.8              | 80.5             |
| Slovenia           | 1165 | 0.8  | 89.0 | 3.5  | 6.1  | 0.6                    | 89.0 | 0.3     | 0.1            | 0.2  | 90.9              | 87.0             |
| South Africa       | 3090 | 20.3 | 45.6 | 21.3 | 11.0 | 1.8                    | 45.6 | 0.5     | 0.4            | 0.9  | 45.5              | 45.7             |
| Thailand           | 2144 | 3.4  | 71.1 | 12.4 | 12.5 | 0.5                    | 71.1 | 0.0     | 0.0            | 0.5  | 68.7              | 74.2             |
| Tunisia            | 1893 | 5.2  | 67.0 | 10.3 | 11.9 | 5.7                    | 67.0 | 3.7     | 0.6            | 1.4  | 66.2              | 67.8             |
| Turkey             | 2938 | 2.2  | 64.7 | 15.7 | 16.8 | 0.6                    | 64.7 | 0.0     | 0.0            | 0.6  | 62.7              | 66.0             |
| United States      | 3405 | 8.2  | 64.6 | 12.8 | 13.9 | 0.5                    | 64.6 | 0.1     | 0.1            | 0.3  | 63.5              | 65.7             |
| International Avg. | .    | 6.5  | 69.6 | 10.4 | 12.0 | 1.5                    | 69.6 | 0.5     | 0.2            | 0.9  | 70.4              | 68.9             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent



Science: Physics  
 Label: Why light-colored clothes are cooler ( S012032 - F02 )  
 Item Type = MC Key = A

| COUNTRY            | N    | A    | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 1509 | 76.9 | 2.2  | 6.3  | 14.2 | 0.4                    | 76.9 | 0.2     | 0.0            | 0.2  | 75.7              | 78.0             |
| Belgium (Flemish)  | 1963 | 86.1 | 0.8  | 4.6  | 8.4  | 0.1                    | 86.1 | 0.0     | 0.0            | 0.1  | 85.6              | 86.5             |
| Bulgaria           | 1232 | 71.2 | 4.2  | 9.7  | 12.7 | 2.1                    | 71.2 | 0.8     | 0.1            | 1.3  | 66.7              | 76.2             |
| Canada             | 3286 | 69.5 | 2.8  | 11.0 | 16.3 | 0.3                    | 69.5 | 0.0     | 0.1            | 0.1  | 69.1              | 69.8             |
| Chile              | 2183 | 36.6 | 9.0  | 21.0 | 30.5 | 2.8                    | 36.6 | 0.0     | 1.6            | 1.1  | 34.3              | 38.8             |
| Chinese Taipei     | 2176 | 86.8 | 1.3  | 1.4  | 10.3 | 0.2                    | 86.8 | 0.0     | 0.0            | 0.2  | 85.5              | 88.1             |
| Cyprus             | 1163 | 52.2 | 6.5  | 12.2 | 28.2 | 0.9                    | 52.2 | 0.4     | 0.1            | 0.5  | 47.9              | 56.5             |
| Czech Republic     | 1316 | 85.9 | 0.8  | 3.9  | 8.9  | 0.4                    | 85.9 | 0.2     | 0.2            | 0.0  | 82.2              | 89.8             |
| England            | 1121 | 74.4 | 3.1  | 6.0  | 16.1 | 0.3                    | 74.4 | 0.2     | 0.0            | 0.1  | 71.3              | 77.5             |
| Finland            | 1093 | 70.6 | 3.9  | 1.9  | 22.6 | 0.9                    | 70.6 | 0.0     | 0.0            | 0.9  | 66.4              | 74.9             |
| Hong Kong, SAR     | 1945 | 84.3 | 0.7  | 1.1  | 13.3 | 0.5                    | 84.3 | 0.0     | 0.0            | 0.5  | 84.3              | 84.3             |
| Hungary            | 1192 | 88.1 | 1.3  | 1.5  | 7.7  | 1.3                    | 88.1 | 0.5     | 0.4            | 0.4  | 87.3              | 89.3             |
| Indonesia          | 2187 | 52.2 | 8.0  | 6.8  | 32.2 | 0.8                    | 52.2 | 0.0     | 0.1            | 0.7  | 50.7              | 53.8             |
| Iran, Islamic Rep. | 1987 | 57.7 | 9.2  | 7.5  | 24.1 | 1.5                    | 57.7 | 0.0     | 0.2            | 1.3  | 50.5              | 62.6             |
| Israel             | 1554 | 71.8 | 5.0  | 6.6  | 14.8 | 1.8                    | 71.8 | 0.1     | 0.8            | 0.9  | 70.6              | 73.0             |
| Italy              | 1238 | 60.6 | 5.7  | 14.0 | 18.9 | 0.8                    | 60.6 | 0.0     | 0.2            | 0.6  | 56.7              | 65.0             |
| Japan              | 1787 | 79.4 | 2.0  | 5.3  | 13.2 | 0.1                    | 79.4 | 0.1     | 0.0            | 0.0  | 74.9              | 83.6             |
| Jordan             | 1891 | 46.6 | 10.0 | 12.1 | 29.7 | 1.6                    | 46.6 | 0.4     | 0.1            | 1.1  | 47.1              | 46.1             |
| Korea, Rep. of     | 2290 | 84.7 | 1.5  | 9.6  | 4.1  | 0.0                    | 84.7 | 0.0     | 0.0            | 0.0  | 83.4              | 86.0             |
| Latvia (LSS)       | 1082 | 76.7 | 3.7  | 4.6  | 14.2 | 0.8                    | 76.7 | 0.7     | 0.1            | 0.0  | 73.6              | 79.9             |
| Lithuania          | 879  | 74.7 | 2.7  | 4.0  | 16.8 | 1.9                    | 74.7 | 0.0     | 0.3            | 1.6  | 68.1              | 81.7             |
| Macedonia, Rep. of | 1516 | 68.7 | 8.4  | 8.5  | 11.7 | 2.8                    | 68.7 | 0.3     | 0.5            | 2.0  | 68.3              | 69.0             |
| Malaysia           | 2094 | 78.8 | 2.0  | 2.3  | 16.6 | 0.3                    | 78.8 | 0.0     | 0.0            | 0.2  | 77.0              | 81.0             |
| Moldova            | 1385 | 54.9 | 6.0  | 10.6 | 27.4 | 1.1                    | 54.9 | 0.7     | 0.0            | 0.3  | 48.9              | 61.9             |
| Morocco            | 2016 | 37.9 | 8.0  | 20.1 | 27.7 | 6.2                    | 37.9 | 1.4     | 0.9            | 3.9  | 37.7              | 38.1             |
| Netherlands        | 1114 | 87.6 | 1.2  | 2.3  | 8.9  | 0.0                    | 87.6 | 0.0     | 0.0            | 0.0  | 89.1              | 86.1             |
| New Zealand        | 1370 | 55.5 | 3.4  | 14.9 | 26.0 | 0.3                    | 55.5 | 0.0     | 0.0            | 0.3  | 54.6              | 56.2             |
| Philippines        | 2467 | 43.2 | 12.7 | 20.8 | 22.4 | 0.9                    | 43.2 | 0.0     | 0.1            | 0.8  | 44.3              | 42.0             |
| Romania            | 1283 | 58.5 | 6.2  | 7.3  | 25.6 | 2.4                    | 58.5 | 1.7     | 0.1            | 0.7  | 57.5              | 59.4             |
| Russian Federation | 1615 | 82.8 | 0.9  | 1.6  | 13.6 | 1.1                    | 82.8 | 0.4     | 0.2            | 0.5  | 77.6              | 88.3             |
| Singapore          | 1860 | 83.5 | 2.0  | 2.5  | 11.9 | 0.1                    | 83.5 | 0.0     | 0.0            | 0.1  | 81.8              | 85.2             |
| Slovak Republic    | 1306 | 85.1 | 2.4  | 2.2  | 9.7  | 0.6                    | 85.1 | 0.0     | 0.1            | 0.5  | 84.0              | 86.2             |
| Slovenia           | 1165 | 80.5 | 2.1  | 3.2  | 13.6 | 0.6                    | 80.5 | 0.2     | 0.1            | 0.3  | 79.1              | 82.1             |
| South Africa       | 3090 | 18.2 | 11.2 | 37.1 | 31.5 | 2.0                    | 18.2 | 0.3     | 0.6            | 1.1  | 17.4              | 19.2             |
| Thailand           | 2144 | 39.2 | 1.4  | 6.0  | 53.2 | 0.2                    | 39.2 | 0.0     | 0.1            | 0.0  | 39.4              | 38.8             |
| Tunisia            | 1893 | 30.9 | 9.9  | 10.2 | 37.5 | 11.6                   | 30.9 | 9.3     | 0.7            | 1.6  | 32.2              | 29.5             |
| Turkey             | 2938 | 33.7 | 23.6 | 12.8 | 28.8 | 1.1                    | 33.7 | 0.1     | 0.0            | 1.1  | 32.3              | 34.6             |
| United States      | 3405 | 60.8 | 3.4  | 14.8 | 20.5 | 0.5                    | 60.8 | 0.1     | 0.1            | 0.3  | 57.8              | 63.8             |
| International Avg. | .    | 65.4 | 5.0  | 8.6  | 19.6 | 1.4                    | 65.4 | 0.5     | 0.2            | 0.7  | 63.4              | 67.4             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Life Science  
 Label: Interpretation of senses ( S012033 - F03 )  
 Item Type = MC Key = A

| COUNTRY            | N    | A    | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 1509 | 72.0 | 2.2  | 23.9 | 1.2  | 0.6                    | 72.0 | 0.1     | 0.0            | 0.5  | 73.0              | 71.1             |
| Belgium (Flemish)  | 1963 | 39.8 | 1.2  | 58.2 | 0.6  | 0.3                    | 39.8 | 0.1     | 0.0            | 0.1  | 35.9              | 43.8             |
| Bulgaria           | 1232 | 91.4 | 1.1  | 4.5  | 1.5  | 1.5                    | 91.4 | 0.7     | 0.1            | 0.8  | 91.0              | 91.8             |
| Canada             | 3286 | 80.9 | 3.0  | 15.1 | 0.7  | 0.4                    | 80.9 | 0.1     | 0.1            | 0.1  | 83.4              | 78.5             |
| Chile              | 2183 | 65.1 | 5.6  | 20.5 | 5.0  | 3.8                    | 65.1 | 0.0     | 1.8            | 2.0  | 63.5              | 66.6             |
| Chinese Taipei     | 2176 | 80.3 | 3.2  | 15.4 | 1.0  | 0.1                    | 80.3 | 0.0     | 0.0            | 0.1  | 78.5              | 82.1             |
| Cyprus             | .    | .    | .    | .    | .    | .                      | .    | .       | .              | .    | .                 | .                |
| Czech Republic     | 1316 | 66.9 | 5.3  | 26.5 | 0.2  | 1.1                    | 66.9 | 0.3     | 0.2            | 0.6  | 60.0              | 74.3             |
| England            | 1121 | 81.5 | 1.9  | 13.5 | 2.3  | 0.8                    | 81.5 | 0.1     | 0.0            | 0.8  | 78.6              | 84.3             |
| Finland            | 1093 | 68.7 | 5.8  | 23.7 | 0.9  | 0.9                    | 68.7 | 0.0     | 0.0            | 0.9  | 64.1              | 73.4             |
| Hong Kong, SAR     | 1945 | 91.0 | 0.6  | 7.1  | 0.7  | 0.7                    | 91.0 | 0.0     | 0.0            | 0.6  | 89.2              | 92.8             |
| Hungary            | 1192 | 75.8 | 1.7  | 20.6 | 0.5  | 1.4                    | 75.8 | 0.4     | 0.4            | 0.6  | 75.0              | 76.9             |
| Indonesia          | 2187 | 60.8 | 3.3  | 32.4 | 3.0  | 0.5                    | 60.8 | 0.0     | 0.1            | 0.4  | 56.4              | 65.2             |
| Iran, Islamic Rep. | 1987 | 50.2 | 5.4  | 39.8 | 3.2  | 1.5                    | 50.2 | 0.0     | 0.2            | 1.2  | 44.9              | 53.8             |
| Israel             | 1554 | 59.6 | 1.9  | 34.1 | 2.3  | 2.1                    | 59.6 | 0.2     | 0.8            | 1.1  | 55.8              | 63.5             |
| Italy              | 1238 | 44.0 | 0.9  | 51.0 | 3.3  | 0.8                    | 44.0 | 0.0     | 0.3            | 0.5  | 41.0              | 47.4             |
| Japan              | 1787 | 54.0 | 2.3  | 42.9 | 0.5  | 0.3                    | 54.0 | 0.3     | 0.0            | 0.0  | 50.8              | 57.0             |
| Jordan             | 1891 | 58.1 | 5.8  | 32.2 | 2.7  | 1.3                    | 58.1 | 0.3     | 0.2            | 0.8  | 54.6              | 61.0             |
| Korea, Rep. of     | 2290 | 55.4 | 3.5  | 39.9 | 1.1  | 0.0                    | 55.4 | 0.0     | 0.0            | 0.0  | 48.2              | 62.5             |
| Latvia (LSS)       | 1082 | 64.6 | 0.6  | 32.3 | 1.4  | 1.1                    | 64.6 | 0.5     | 0.1            | 0.4  | 61.9              | 67.6             |
| Lithuania          | 879  | 67.2 | 0.7  | 29.7 | 1.0  | 1.4                    | 67.2 | 0.1     | 0.4            | 0.9  | 66.2              | 68.3             |
| Macedonia, Rep. of | 1516 | 64.5 | 6.1  | 23.2 | 3.5  | 2.6                    | 64.5 | 0.2     | 0.5            | 1.9  | 64.4              | 64.6             |
| Malaysia           | 2094 | 85.4 | 4.5  | 8.9  | 0.9  | 0.4                    | 85.4 | 0.0     | 0.1            | 0.3  | 84.7              | 86.2             |
| Moldova            | 1385 | 78.3 | 6.0  | 12.4 | 2.0  | 1.3                    | 78.3 | 0.5     | 0.1            | 0.7  | 77.4              | 79.4             |
| Morocco            | 2016 | 43.0 | 16.3 | 24.7 | 10.3 | 5.7                    | 43.0 | 1.5     | 1.4            | 2.8  | 39.3              | 45.5             |
| Netherlands        | 1114 | 83.1 | 1.5  | 13.8 | 1.4  | 0.2                    | 83.1 | 0.1     | 0.0            | 0.1  | 82.7              | 83.6             |
| New Zealand        | 1370 | 81.3 | 2.8  | 11.6 | 3.8  | 0.4                    | 81.3 | 0.0     | 0.0            | 0.4  | 82.7              | 80.1             |
| Philippines        | 2467 | 58.4 | 13.9 | 17.9 | 8.7  | 1.1                    | 58.4 | 0.0     | 0.1            | 1.0  | 58.4              | 58.3             |
| Romania            | 1282 | 62.9 | 3.6  | 27.6 | 3.7  | 2.1                    | 62.9 | 0.8     | 0.1            | 1.2  | 62.0              | 63.7             |
| Russian Federation | 1615 | 82.3 | 2.4  | 9.1  | 3.5  | 2.7                    | 82.3 | 0.1     | 0.2            | 2.4  | 82.3              | 82.4             |
| Singapore          | 1860 | 85.7 | 4.6  | 8.7  | 1.0  | 0.1                    | 85.7 | 0.0     | 0.0            | 0.1  | 83.7              | 87.7             |
| Slovak Republic    | .    | .    | .    | .    | .    | .                      | .    | .       | .              | .    | .                 | .                |
| Slovenia           | 1165 | 43.1 | 1.9  | 53.6 | 0.5  | 0.8                    | 43.1 | 0.5     | 0.1            | 0.2  | 36.9              | 49.8             |
| South Africa       | 3090 | 32.4 | 16.8 | 14.1 | 34.3 | 2.3                    | 32.4 | 0.3     | 0.8            | 1.2  | 29.9              | 35.3             |
| Thailand           | 2144 | 30.4 | 2.2  | 64.6 | 2.3  | 0.6                    | 30.4 | 0.0     | 0.1            | 0.5  | 27.2              | 34.2             |
| Tunisia            | 1893 | 23.6 | 2.5  | 66.4 | 2.0  | 5.6                    | 23.6 | 3.5     | 0.7            | 1.3  | 18.0              | 29.4             |
| Turkey             | 2938 | 77.7 | 6.3  | 8.1  | 7.4  | 0.5                    | 77.7 | 0.0     | 0.0            | 0.5  | 76.9              | 78.3             |
| United States      | 3405 | 85.3 | 2.7  | 10.0 | 1.3  | 0.7                    | 85.3 | 0.0     | 0.1            | 0.5  | 84.9              | 85.6             |
| International Avg. | .    | 65.1 | 4.2  | 26.1 | 3.3  | 1.3                    | 65.1 | 0.3     | 0.3            | 0.8  | 62.9              | 67.4             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Environmental and Resource Issues  
 Label: Area where soil is washed away ( S012034 - F04 )  
 Item Type = MC Key = D

| COUNTRY            | N    | A    | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 1509 | 14.6 | 3.2  | 4.1  | 77.8 | 0.3                    | 77.8 | 0.2     | 0.0            | 0.1  | 74.6              | 80.9             |
| Belgium (Flemish)  | 1963 | 15.7 | 7.4  | 8.1  | 68.4 | 0.5                    | 68.4 | 0.1     | 0.0            | 0.4  | 67.5              | 69.4             |
| Bulgaria           | 1232 | 24.9 | 16.0 | 4.6  | 52.2 | 2.3                    | 52.2 | 0.7     | 0.1            | 1.5  | 53.9              | 50.1             |
| Canada             | 3286 | 9.8  | 5.5  | 8.0  | 76.2 | 0.4                    | 76.2 | 0.0     | 0.1            | 0.2  | 75.6              | 76.7             |
| Chile              | 2183 | 19.9 | 9.8  | 14.0 | 51.6 | 4.7                    | 51.6 | 0.0     | 2.0            | 2.7  | 47.3              | 55.6             |
| Chinese Taipei     | 2176 | 3.5  | 1.2  | 3.6  | 91.6 | 0.0                    | 91.6 | 0.0     | 0.0            | 0.0  | 91.8              | 91.5             |
| Cyprus             | 1163 | 11.5 | 5.5  | 6.8  | 75.8 | 0.4                    | 75.8 | 0.1     | 0.1            | 0.3  | 75.0              | 76.6             |
| Czech Republic     | 1316 | 10.3 | 7.8  | 7.8  | 73.0 | 1.2                    | 73.0 | 0.2     | 0.2            | 0.8  | 68.9              | 77.3             |
| England            | 1121 | 11.8 | 4.9  | 4.5  | 78.1 | 0.6                    | 78.1 | 0.0     | 0.0            | 0.6  | 75.9              | 80.3             |
| Finland            | 1093 | 11.7 | 6.5  | 12.7 | 68.2 | 0.9                    | 68.2 | 0.0     | 0.0            | 0.9  | 68.3              | 68.1             |
| Hong Kong, SAR     | 1945 | 9.0  | 2.1  | 3.9  | 84.7 | 0.3                    | 84.7 | 0.0     | 0.0            | 0.3  | 82.5              | 86.8             |
| Hungary            | 1192 | 7.0  | 9.5  | 12.0 | 69.7 | 1.8                    | 69.7 | 0.6     | 0.4            | 0.8  | 67.5              | 71.9             |
| Indonesia          | 2187 | 7.5  | 4.9  | 14.3 | 72.7 | 0.6                    | 72.7 | 0.0     | 0.1            | 0.5  | 68.8              | 76.6             |
| Iran, Islamic Rep. | 1987 | 15.4 | 16.9 | 21.5 | 43.5 | 2.7                    | 43.5 | 0.0     | 0.2            | 2.5  | 37.9              | 47.5             |
| Israel             | 1554 | 10.5 | 7.9  | 15.5 | 63.2 | 2.9                    | 63.2 | 0.1     | 0.8            | 2.0  | 61.4              | 65.2             |
| Italy              | 1238 | 20.8 | 6.8  | 11.3 | 59.2 | 1.9                    | 59.2 | 0.0     | 0.4            | 1.5  | 58.8              | 59.8             |
| Japan              | 1787 | 10.2 | 4.0  | 5.9  | 79.5 | 0.4                    | 79.5 | 0.1     | 0.0            | 0.3  | 79.7              | 79.3             |
| Jordan             | 1893 | 16.8 | 7.3  | 9.3  | 65.4 | 1.2                    | 65.4 | 0.2     | 0.2            | 0.8  | 63.9              | 66.7             |
| Korea, Rep. of     | 2290 | 10.9 | 3.1  | 2.9  | 82.9 | 0.2                    | 82.9 | 0.0     | 0.0            | 0.1  | 82.2              | 83.6             |
| Latvia (LSS)       | 1082 | 11.9 | 5.0  | 7.0  | 75.5 | 0.6                    | 75.5 | 0.1     | 0.1            | 0.4  | 76.0              | 74.8             |
| Lithuania          | 879  | 10.7 | 9.6  | 11.4 | 66.4 | 1.9                    | 66.4 | 0.0     | 0.4            | 1.5  | 61.9              | 71.2             |
| Macedonia, Rep. of | 1516 | 11.0 | 11.9 | 17.5 | 55.4 | 4.1                    | 55.4 | 0.1     | 0.7            | 3.3  | 53.0              | 57.8             |
| Malaysia           | 2094 | 9.1  | 2.3  | 7.4  | 80.5 | 0.7                    | 80.5 | 0.0     | 0.1            | 0.6  | 78.9              | 82.5             |
| Moldova            | 1385 | 6.4  | 17.4 | 24.7 | 49.8 | 1.7                    | 49.8 | 0.4     | 0.1            | 1.2  | 46.7              | 53.4             |
| Morocco            | 2016 | 22.1 | 16.6 | 14.0 | 41.6 | 5.8                    | 41.6 | 1.3     | 1.5            | 3.0  | 40.3              | 42.5             |
| Netherlands        | 1114 | 3.3  | 1.7  | 11.5 | 83.4 | 0.1                    | 83.4 | 0.0     | 0.0            | 0.1  | 81.9              | 84.9             |
| New Zealand        | 1368 | 15.8 | 7.3  | 5.5  | 71.1 | 0.4                    | 71.1 | 0.1     | 0.0            | 0.2  | 69.3              | 72.8             |
| Philippines        | 2467 | 19.6 | 21.0 | 19.7 | 39.1 | 0.5                    | 39.1 | 0.0     | 0.1            | 0.4  | 39.5              | 38.6             |
| Romania            | 1282 | 8.2  | 10.9 | 14.3 | 64.6 | 2.0                    | 64.6 | 0.8     | 0.2            | 1.0  | 67.1              | 62.3             |
| Russian Federation | 1615 | 5.0  | 3.3  | 10.5 | 79.5 | 1.7                    | 79.5 | 0.0     | 0.2            | 1.5  | 79.1              | 80.0             |
| Singapore          | 1860 | 5.9  | 2.2  | 3.4  | 88.4 | 0.1                    | 88.4 | 0.0     | 0.0            | 0.1  | 88.3              | 88.5             |
| Slovak Republic    | 1306 | 5.8  | 1.7  | 6.0  | 85.3 | 1.1                    | 85.3 | 0.0     | 0.1            | 1.0  | 84.8              | 85.9             |
| Slovenia           | 1165 | 10.2 | 5.6  | 8.2  | 75.0 | 1.0                    | 75.0 | 0.2     | 0.1            | 0.7  | 73.4              | 76.7             |
| South Africa       | 3090 | 17.5 | 33.3 | 20.6 | 26.2 | 2.4                    | 26.2 | 0.4     | 0.9            | 1.1  | 24.7              | 28.0             |
| Thailand           | 2144 | 16.1 | 4.4  | 9.9  | 69.4 | 0.3                    | 69.4 | 0.0     | 0.1            | 0.1  | 66.4              | 73.1             |
| Tunisia            | 1893 | 9.1  | 2.5  | 8.3  | 73.5 | 6.5                    | 73.5 | 5.0     | 0.7            | 0.8  | 71.1              | 76.0             |
| Turkey             | 2938 | 13.6 | 10.0 | 25.6 | 49.4 | 1.4                    | 49.4 | 0.0     | 0.0            | 1.4  | 43.5              | 53.6             |
| United States      | 3405 | 9.5  | 8.2  | 9.2  | 72.7 | 0.4                    | 72.7 | 0.0     | 0.1            | 0.2  | 71.1              | 74.3             |
| International Avg. | .    | 11.9 | 8.0  | 10.7 | 67.9 | 1.5                    | 67.9 | 0.3     | 0.3            | 0.9  | 66.3              | 69.5             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Earth Science  
 Label: Oxygen equipment on mountain tops ( S012035 - F05 )  
 Item Type = MC Key = A

| COUNTRY            | N    | A    | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 1509 | 89.7 | 5.0  | 1.6  | 3.5  | 0.2                    | 89.7 | 0.2     | 0.0            | 0.0  | 86.9              | 92.4             |
| Belgium (Flemish)  | 1963 | 90.2 | 3.6  | 0.5  | 5.5  | 0.3                    | 90.2 | 0.1     | 0.0            | 0.1  | 91.6              | 88.8             |
| Bulgaria           | 1232 | 90.7 | 2.7  | 1.7  | 3.7  | 1.2                    | 90.7 | 0.2     | 0.2            | 0.8  | 92.6              | 88.6             |
| Canada             | 3286 | 91.9 | 2.9  | 1.1  | 3.9  | 0.2                    | 91.9 | 0.0     | 0.1            | 0.0  | 93.4              | 90.5             |
| Chile              | 2183 | 74.5 | 8.6  | 4.7  | 8.4  | 3.7                    | 74.5 | 0.0     | 2.7            | 1.1  | 72.2              | 76.7             |
| Chinese Taipei     | 2176 | 94.2 | 1.5  | 1.3  | 3.0  | 0.1                    | 94.2 | 0.0     | 0.0            | 0.0  | 93.9              | 94.4             |
| Cyprus             | 1161 | 70.0 | 12.9 | 6.6  | 9.7  | 0.7                    | 70.0 | 0.3     | 0.1            | 0.4  | 65.7              | 74.3             |
| Czech Republic     | 1316 | 92.1 | 3.1  | 0.4  | 4.0  | 0.4                    | 92.1 | 0.0     | 0.3            | 0.1  | 91.2              | 93.0             |
| England            | 1121 | 90.4 | 3.8  | 0.9  | 4.3  | 0.6                    | 90.4 | 0.1     | 0.1            | 0.4  | 88.1              | 92.6             |
| Finland            | 1093 | 89.7 | 3.0  | 0.3  | 6.1  | 1.0                    | 89.7 | 0.0     | 0.0            | 1.0  | 89.9              | 89.4             |
| Hong Kong, SAR     | 1945 | 94.5 | 1.0  | 0.6  | 3.6  | 0.4                    | 94.5 | 0.0     | 0.1            | 0.2  | 94.5              | 94.4             |
| Hungary            | 1192 | 90.2 | 1.6  | 1.0  | 5.9  | 1.3                    | 90.2 | 0.3     | 0.4            | 0.7  | 90.1              | 90.4             |
| Indonesia          | 2185 | 67.0 | 8.1  | 8.0  | 16.4 | 0.5                    | 67.0 | 0.0     | 0.1            | 0.4  | 66.0              | 68.1             |
| Iran, Islamic Rep. | 1987 | 78.6 | 5.8  | 4.5  | 9.9  | 1.3                    | 78.6 | 0.0     | 0.3            | 1.0  | 77.1              | 79.5             |
| Israel             | 1554 | 79.7 | 2.1  | 8.0  | 8.0  | 2.1                    | 79.7 | 0.0     | 1.4            | 0.7  | 78.1              | 81.4             |
| Italy              | 1238 | 77.8 | 7.2  | 5.0  | 9.3  | 0.8                    | 77.8 | 0.0     | 0.4            | 0.3  | 77.2              | 78.4             |
| Japan              | 1787 | 74.2 | 3.9  | 0.5  | 21.2 | 0.2                    | 74.2 | 0.1     | 0.0            | 0.2  | 73.0              | 75.3             |
| Jordan             | 1893 | 63.4 | 6.7  | 13.4 | 14.9 | 1.5                    | 63.4 | 0.3     | 0.2            | 0.9  | 66.0              | 61.3             |
| Korea, Rep. of     | 2289 | 93.5 | 3.0  | 0.6  | 2.9  | 0.0                    | 93.5 | 0.0     | 0.0            | 0.0  | 93.0              | 93.9             |
| Latvia (LSS)       | 1082 | 69.4 | 16.2 | 3.0  | 10.5 | 1.1                    | 69.4 | 0.4     | 0.1            | 0.5  | 67.3              | 71.5             |
| Lithuania          | 879  | 79.6 | 4.0  | 1.1  | 13.8 | 1.5                    | 79.6 | 0.0     | 0.5            | 1.0  | 80.6              | 78.6             |
| Macedonia, Rep. of | 1516 | 74.7 | 9.8  | 3.3  | 9.3  | 3.0                    | 74.7 | 0.2     | 0.8            | 2.0  | 75.0              | 74.5             |
| Malaysia           | 2094 | 90.5 | 2.9  | 1.7  | 4.6  | 0.3                    | 90.5 | 0.0     | 0.2            | 0.0  | 91.0              | 89.9             |
| Moldova            | 1385 | 64.5 | 3.9  | 4.1  | 25.8 | 1.7                    | 64.5 | 0.5     | 0.2            | 1.0  | 64.8              | 64.1             |
| Morocco            | 2016 | 38.7 | 16.5 | 20.9 | 17.0 | 6.9                    | 38.7 | 1.4     | 1.9            | 3.6  | 38.2              | 39.1             |
| Netherlands        | 1114 | 91.4 | 4.0  | 0.8  | 3.7  | 0.1                    | 91.4 | 0.0     | 0.0            | 0.1  | 90.7              | 92.3             |
| New Zealand        | 1368 | 87.3 | 3.8  | 3.0  | 5.7  | 0.3                    | 87.3 | 0.3     | 0.0            | 0.1  | 87.2              | 87.4             |
| Philippines        | 2467 | 48.0 | 14.6 | 20.6 | 16.3 | 0.5                    | 48.0 | 0.1     | 0.1            | 0.4  | 48.2              | 48.0             |
| Romania            | 1283 | 69.6 | 14.6 | 5.2  | 8.8  | 1.8                    | 69.6 | 0.8     | 0.2            | 0.9  | 69.4              | 69.7             |
| Russian Federation | 1615 | 84.0 | 5.4  | 2.2  | 6.6  | 1.8                    | 84.0 | 0.2     | 0.4            | 1.3  | 82.9              | 85.2             |
| Singapore          | 1860 | 95.3 | 1.3  | 0.5  | 2.8  | 0.0                    | 95.3 | 0.0     | 0.0            | 0.0  | 95.1              | 95.5             |
| Slovak Republic    | 1306 | 91.1 | 3.2  | 0.9  | 4.5  | 0.2                    | 91.1 | 0.0     | 0.1            | 0.1  | 91.7              | 90.6             |
| Slovenia           | 1165 | 86.8 | 2.6  | 1.6  | 8.5  | 0.6                    | 86.8 | 0.2     | 0.1            | 0.3  | 89.1              | 84.3             |
| South Africa       | 3090 | 43.9 | 12.7 | 8.8  | 32.0 | 2.6                    | 43.9 | 0.3     | 1.4            | 0.9  | 41.1              | 47.2             |
| Thailand           | 2144 | 76.0 | 3.3  | 8.8  | 11.5 | 0.4                    | 76.0 | 0.0     | 0.1            | 0.3  | 73.9              | 78.5             |
| Tunisia            | 1892 | 55.8 | 5.9  | 10.0 | 18.8 | 9.4                    | 55.8 | 7.4     | 0.8            | 1.1  | 50.1              | 61.8             |
| Turkey             | 2938 | 64.5 | 16.0 | 9.2  | 9.2  | 1.0                    | 64.5 | 0.1     | 0.1            | 0.9  | 65.4              | 63.9             |
| United States      | 3405 | 90.4 | 3.6  | 2.1  | 3.5  | 0.3                    | 90.4 | 0.0     | 0.1            | 0.2  | 89.1              | 91.8             |
| International Avg. | .    | 78.8 | 6.1  | 4.4  | 9.4  | 1.3                    | 78.8 | 0.4     | 0.4            | 0.6  | 78.2              | 79.4             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Chemistry  
 Label: Best reason for painting iron surfaces ( S012036 - F06 )  
 Item Type = MC Key = E

| COUNTRY            | N    | A    | B    | C    | D    | E    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 1509 | 5.1  | 7.5  | 8.7  | 5.6  | 72.2 | 1.0                    | 72.2 | 0.1     | 0.0            | 0.9  | 69.6              | 74.8             |
| Belgium (Flemish)  | 1963 | 4.0  | 12.1 | 7.4  | 5.4  | 69.7 | 1.4                    | 69.7 | 0.0     | 0.0            | 1.4  | 66.3              | 73.3             |
| Bulgaria           | 1232 | 4.9  | 3.1  | 6.1  | 7.4  | 76.3 | 2.2                    | 76.3 | 0.5     | 0.2            | 1.4  | 75.8              | 76.8             |
| Canada             | 3286 | 4.1  | 7.6  | 11.0 | 4.3  | 72.2 | 0.7                    | 72.2 | 0.0     | 0.1            | 0.6  | 70.5              | 73.8             |
| Chile              | 2183 | 4.0  | 7.7  | 10.0 | 8.9  | 63.9 | 5.5                    | 63.9 | 0.0     | 2.8            | 2.7  | 65.0              | 62.8             |
| Chinese Taipei     | 2176 | 1.9  | 2.1  | 4.1  | 1.0  | 90.8 | 0.1                    | 90.8 | 0.0     | 0.0            | 0.0  | 90.9              | 90.8             |
| Cyprus             | 1160 | 6.8  | 11.7 | 11.0 | 7.4  | 61.6 | 1.5                    | 61.6 | 0.1     | 0.1            | 1.4  | 60.0              | 63.1             |
| Czech Republic     | 1316 | 4.2  | 8.6  | 10.4 | 4.3  | 71.6 | 0.9                    | 71.6 | 0.0     | 0.3            | 0.5  | 64.5              | 79.2             |
| England            | 1121 | 4.4  | 6.2  | 8.1  | 3.4  | 76.4 | 1.5                    | 76.4 | 0.2     | 0.1            | 1.3  | 72.2              | 80.5             |
| Finland            | 1093 | 4.9  | 4.9  | 4.1  | 2.1  | 82.8 | 1.2                    | 82.8 | 0.0     | 0.0            | 1.2  | 81.0              | 84.6             |
| Hong Kong, SAR     | 1945 | 5.3  | 4.4  | 7.8  | 2.5  | 79.2 | 0.8                    | 79.2 | 0.1     | 0.1            | 0.6  | 77.1              | 81.3             |
| Hungary            | 1192 | 1.9  | 6.7  | 4.6  | 3.3  | 81.2 | 2.3                    | 81.2 | 0.7     | 0.4            | 1.3  | 76.7              | 85.9             |
| Indonesia          | 2185 | 9.1  | 14.2 | 9.9  | 18.4 | 46.8 | 1.5                    | 46.8 | 0.0     | 0.2            | 1.3  | 46.8              | 46.9             |
| Iran, Islamic Rep. | 1987 | 2.7  | 5.9  | 7.4  | 6.5  | 76.2 | 1.2                    | 76.2 | 0.0     | 0.3            | 0.9  | 74.6              | 77.4             |
| Israel             | 1554 | 5.9  | 8.5  | 9.3  | 6.6  | 65.9 | 3.9                    | 65.9 | 0.0     | 1.4            | 2.5  | 61.9              | 70.1             |
| Italy              | 1238 | 6.7  | 6.5  | 15.4 | 4.6  | 64.9 | 2.0                    | 64.9 | 0.0     | 0.4            | 1.6  | 65.7              | 64.0             |
| Japan              | 1787 | 5.0  | 6.3  | 14.9 | 3.2  | 69.7 | 0.8                    | 69.7 | 0.5     | 0.0            | 0.4  | 68.3              | 71.1             |
| Jordan             | 1893 | 3.0  | 7.4  | 6.7  | 3.8  | 77.9 | 1.2                    | 77.9 | 0.3     | 0.2            | 0.7  | 80.6              | 75.6             |
| Korea, Rep. of     | 2290 | 5.5  | 7.5  | 12.0 | 1.9  | 72.9 | 0.2                    | 72.9 | 0.0     | 0.0            | 0.2  | 69.8              | 76.0             |
| Latvia (LSS)       | 1082 | 3.2  | 8.7  | 5.5  | 12.2 | 68.6 | 1.7                    | 68.6 | 0.2     | 0.1            | 1.3  | 67.9              | 69.3             |
| Lithuania          | 879  | 5.1  | 6.6  | 4.4  | 5.3  | 74.3 | 4.2                    | 74.3 | 0.0     | 0.5            | 3.7  | 71.5              | 77.3             |
| Macedonia, Rep. of | 1516 | 4.2  | 11.4 | 5.7  | 9.0  | 64.5 | 5.1                    | 64.5 | 0.1     | 0.9            | 4.1  | 65.5              | 63.6             |
| Malaysia           | 2094 | 6.5  | 8.5  | 8.7  | 9.4  | 65.6 | 1.4                    | 65.6 | 0.0     | 0.2            | 1.2  | 64.2              | 67.3             |
| Moldova            | 1384 | 6.5  | 18.4 | 5.7  | 19.8 | 47.0 | 2.6                    | 47.0 | 0.5     | 0.3            | 1.7  | 42.9              | 51.9             |
| Morocco            | 2015 | 8.8  | 17.4 | 13.2 | 28.7 | 24.1 | 7.9                    | 24.1 | 1.1     | 2.2            | 4.6  | 24.1              | 24.1             |
| Netherlands        | 1114 | 4.1  | 4.8  | 7.0  | 3.3  | 80.2 | 0.6                    | 80.2 | 0.0     | 0.0            | 0.6  | 79.8              | 80.7             |
| New Zealand        | 1368 | 5.7  | 9.4  | 10.5 | 6.9  | 66.4 | 1.1                    | 66.4 | 0.1     | 0.0            | 1.0  | 65.3              | 67.4             |
| Philippines        | 2467 | 9.6  | 13.0 | 19.9 | 8.3  | 48.1 | 1.0                    | 48.1 | 0.0     | 0.1            | 0.9  | 50.7              | 45.0             |
| Romania            | 1283 | 3.5  | 7.6  | 5.7  | 10.0 | 71.2 | 2.0                    | 71.2 | 0.9     | 0.2            | 1.0  | 72.8              | 69.6             |
| Russian Federation | 1615 | 2.3  | 6.6  | 1.8  | 5.8  | 81.4 | 2.1                    | 81.4 | 0.2     | 0.4            | 1.5  | 78.5              | 84.6             |
| Singapore          | 1860 | 2.4  | 4.6  | 7.8  | 4.0  | 80.9 | 0.3                    | 80.9 | 0.0     | 0.0            | 0.3  | 78.9              | 82.9             |
| Slovak Republic    | 1306 | 3.8  | 8.6  | 6.2  | 6.0  | 73.4 | 2.0                    | 73.4 | 0.1     | 0.1            | 1.8  | 72.7              | 74.1             |
| Slovenia           | 1165 | 3.9  | 7.6  | 12.1 | 4.4  | 69.8 | 2.2                    | 69.8 | 0.2     | 0.1            | 2.0  | 68.0              | 71.6             |
| South Africa       | 3090 | 10.0 | 18.4 | 19.5 | 22.8 | 26.3 | 3.1                    | 26.3 | 0.2     | 1.5            | 1.3  | 26.5              | 26.0             |
| Thailand           | 2144 | 4.2  | 11.4 | 7.4  | 6.3  | 70.0 | 0.6                    | 70.0 | 0.0     | 0.3            | 0.3  | 69.6              | 70.6             |
| Tunisia            | 1893 | 4.2  | 11.1 | 13.3 | 17.9 | 43.7 | 9.9                    | 43.7 | 7.2     | 0.8            | 1.8  | 39.7              | 47.8             |
| Turkey             | 2938 | 7.2  | 11.4 | 10.0 | 11.5 | 58.1 | 1.9                    | 58.1 | 0.0     | 0.1            | 1.7  | 57.5              | 58.6             |
| United States      | 3405 | 4.9  | 10.0 | 12.3 | 6.2  | 66.0 | 0.7                    | 66.0 | 0.0     | 0.1            | 0.5  | 63.8              | 68.1             |
| International Avg. | .    | 5.0  | 8.8  | 9.1  | 7.9  | 67.2 | 2.1                    | 67.2 | 0.3     | 0.4            | 1.4  | 65.7              | 68.6             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Physics  
 Label: Diagram of batteries in a flashlight ( S012037 - G07 )  
 Item Type = MC Key = A

| COUNTRY            | N    | A    | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 1510 | 91.1 | 3.2  | 2.3  | 3.3  | 0.1                    | 91.1 | 0.0     | 0.1            | 0.1  | 88.8              | 93.5             |
| Belgium (Flemish)  | 1971 | 91.9 | 2.2  | 2.1  | 3.6  | 0.1                    | 91.9 | 0.0     | 0.0            | 0.1  | 89.3              | 94.6             |
| Bulgaria           | 1222 | 84.5 | 4.7  | 6.5  | 3.3  | 0.9                    | 84.5 | 0.0     | 0.2            | 0.7  | 80.6              | 88.7             |
| Canada             | 3311 | 88.6 | 4.0  | 2.4  | 4.7  | 0.2                    | 88.6 | 0.1     | 0.0            | 0.2  | 87.6              | 89.9             |
| Chile              | 2226 | 80.0 | 6.1  | 4.0  | 7.2  | 2.8                    | 80.0 | 0.0     | 1.7            | 1.1  | 76.8              | 83.3             |
| Chinese Taipei     | 2161 | 94.1 | 1.9  | 1.6  | 2.3  | 0.1                    | 94.1 | 0.0     | 0.0            | 0.0  | 93.9              | 94.4             |
| Cyprus             | 1164 | 86.3 | 4.7  | 3.7  | 5.1  | 0.2                    | 86.3 | 0.1     | 0.0            | 0.1  | 84.5              | 87.9             |
| Czech Republic     | 1306 | 96.6 | 1.1  | 1.1  | 1.1  | 0.1                    | 96.6 | 0.0     | 0.0            | 0.1  | 94.9              | 98.3             |
| England            | 1122 | 94.2 | 2.0  | 2.1  | 1.5  | 0.2                    | 94.2 | 0.0     | 0.0            | 0.2  | 94.1              | 94.3             |
| Finland            | 1103 | 88.1 | 4.2  | 2.3  | 4.8  | 0.6                    | 88.1 | 0.0     | 0.0            | 0.6  | 87.0              | 89.2             |
| Hong Kong, SAR     | 1951 | 94.0 | 2.1  | 1.7  | 2.1  | 0.1                    | 94.0 | 0.0     | 0.0            | 0.1  | 92.8              | 95.2             |
| Hungary            | 1185 | 92.1 | 2.5  | 2.1  | 2.4  | 0.9                    | 92.1 | 0.3     | 0.3            | 0.4  | 90.0              | 94.3             |
| Indonesia          | 2196 | 80.0 | 7.0  | 6.5  | 6.2  | 0.3                    | 80.0 | 0.0     | 0.0            | 0.3  | 71.6              | 88.1             |
| Iran, Islamic Rep. | 1983 | 71.8 | 5.9  | 11.2 | 10.4 | 0.7                    | 71.8 | 0.0     | 0.3            | 0.5  | 60.2              | 79.6             |
| Israel             | 1568 | 84.5 | 3.8  | 4.9  | 5.3  | 1.5                    | 84.5 | 0.1     | 0.8            | 0.6  | 81.2              | 87.5             |
| Italy              | 1242 | 83.9 | 8.1  | 3.7  | 3.4  | 0.9                    | 83.9 | 0.0     | 0.3            | 0.5  | 82.0              | 85.9             |
| Japan              | 1775 | 94.1 | 1.7  | 1.4  | 2.7  | 0.2                    | 94.1 | 0.1     | 0.0            | 0.1  | 93.4              | 94.7             |
| Jordan             | 1893 | 82.6 | 4.6  | 4.8  | 7.2  | 0.9                    | 82.6 | 0.3     | 0.0            | 0.5  | 81.9              | 83.2             |
| Korea, Rep. of     | 2288 | 96.3 | 1.0  | 1.0  | 1.7  | 0.0                    | 96.3 | 0.0     | 0.0            | 0.0  | 96.1              | 96.5             |
| Latvia (LSS)       | 1074 | 89.9 | 3.4  | 3.5  | 2.7  | 0.5                    | 89.9 | 0.3     | 0.1            | 0.1  | 86.9              | 93.1             |
| Lithuania          | 878  | 91.7 | 3.7  | 1.8  | 1.8  | 0.9                    | 91.7 | 0.0     | 0.2            | 0.7  | 87.9              | 96.0             |
| Macedonia, Rep. of | 1513 | 84.9 | 4.3  | 4.5  | 3.5  | 2.8                    | 84.9 | 0.3     | 0.8            | 1.7  | 81.6              | 87.9             |
| Malaysia           | 2094 | 90.5 | 2.5  | 3.2  | 3.4  | 0.4                    | 90.5 | 0.0     | 0.2            | 0.2  | 86.9              | 94.9             |
| Moldova            | 1388 | 65.9 | 10.5 | 13.2 | 9.4  | 1.0                    | 65.9 | 0.1     | 0.3            | 0.6  | 59.5              | 74.1             |
| Morocco            | 2047 | 55.9 | 9.7  | 15.8 | 13.6 | 5.1                    | 55.9 | 0.4     | 0.3            | 4.3  | 44.9              | 63.2             |
| Netherlands        | 1098 | 88.3 | 4.6  | 2.4  | 4.1  | 0.5                    | 88.3 | 0.0     | 0.1            | 0.4  | 87.1              | 89.9             |
| New Zealand        | 1356 | 88.2 | 3.8  | 3.3  | 4.3  | 0.4                    | 88.2 | 0.1     | 0.1            | 0.3  | 85.1              | 91.4             |
| Philippines        | 2479 | 68.4 | 11.0 | 8.5  | 11.6 | 0.6                    | 68.4 | 0.1     | 0.2            | 0.3  | 62.9              | 74.5             |
| Romania            | 1287 | 88.6 | 4.3  | 2.8  | 3.5  | 0.8                    | 88.6 | 0.2     | 0.3            | 0.4  | 85.3              | 91.6             |
| Russian Federation | 1641 | 91.4 | 2.6  | 2.8  | 2.2  | 1.0                    | 91.4 | 0.0     | 0.1            | 0.9  | 87.6              | 95.4             |
| Singapore          | 1872 | 97.7 | 0.8  | 0.4  | 1.2  | 0.0                    | 97.7 | 0.0     | 0.0            | 0.0  | 97.3              | 98.0             |
| Slovak Republic    | 1315 | 79.3 | 6.3  | 8.6  | 4.9  | 0.9                    | 79.3 | 0.0     | 0.1            | 0.7  | 73.8              | 85.3             |
| Slovenia           | 1179 | 92.5 | 2.6  | 2.2  | 2.4  | 0.3                    | 92.5 | 0.0     | 0.1            | 0.2  | 91.2              | 94.0             |
| South Africa       | 3109 | 57.3 | 10.9 | 14.9 | 15.1 | 1.8                    | 57.3 | 0.1     | 0.9            | 0.8  | 46.4              | 69.7             |
| Thailand           | 2152 | 89.8 | 2.7  | 3.9  | 3.1  | 0.5                    | 89.8 | 0.0     | 0.4            | 0.2  | 87.3              | 92.8             |
| Tunisia            | 1897 | 75.5 | 6.1  | 6.4  | 9.5  | 2.5                    | 75.5 | 1.1     | 0.6            | 0.8  | 70.3              | 81.1             |
| Turkey             | 2931 | 89.4 | 3.6  | 2.9  | 3.8  | 0.3                    | 89.4 | 0.0     | 0.0            | 0.3  | 86.5              | 91.4             |
| United States      | 3388 | 88.3 | 4.2  | 2.3  | 5.0  | 0.2                    | 88.3 | 0.0     | 0.1            | 0.1  | 87.3              | 89.3             |
| International Avg. | .    | 85.5 | 4.4  | 4.4  | 4.8  | 0.8                    | 85.5 | 0.1     | 0.2            | 0.5  | 82.2              | 88.8             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Life Science  
 Label: Main function of red blood cells ( S012038 - G08 )  
 Item Type = MC Key = B

| COUNTRY            | N    | A    | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 1510 | 12.9 | 79.0 | 3.0  | 4.6  | 0.5                    | 79.0 | 0.1     | 0.1            | 0.3  | 78.9              | 79.2             |
| Belgium (Flemish)  | 1971 | 19.1 | 65.4 | 2.6  | 12.0 | 0.9                    | 65.4 | 0.2     | 0.0            | 0.6  | 59.3              | 71.7             |
| Bulgaria           | 1222 | 19.0 | 63.3 | 2.4  | 12.0 | 3.3                    | 63.3 | 1.1     | 0.2            | 2.0  | 66.9              | 59.6             |
| Canada             | 3311 | 18.3 | 71.0 | 3.1  | 7.0  | 0.5                    | 71.0 | 0.0     | 0.0            | 0.5  | 69.3              | 73.1             |
| Chile              | 2226 | 39.7 | 30.4 | 3.9  | 21.2 | 4.8                    | 30.4 | 0.0     | 2.3            | 2.5  | 25.5              | 35.3             |
| Chinese Taipei     | 2161 | 7.1  | 78.7 | 2.5  | 11.5 | 0.1                    | 78.7 | 0.0     | 0.0            | 0.0  | 74.6              | 83.0             |
| Cyprus             | 1163 | 21.6 | 57.9 | 4.6  | 15.0 | 1.0                    | 57.9 | 0.1     | 0.0            | 0.8  | 59.5              | 56.4             |
| Czech Republic     | 1306 | 6.6  | 76.9 | 1.1  | 15.3 | 0.1                    | 76.9 | 0.0     | 0.0            | 0.1  | 73.0              | 80.8             |
| England            | 1122 | 14.0 | 79.0 | 1.9  | 4.9  | 0.2                    | 79.0 | 0.1     | 0.0            | 0.1  | 76.5              | 81.3             |
| Finland            | 1103 | 16.8 | 63.7 | 1.6  | 16.5 | 1.4                    | 63.7 | 0.0     | 0.0            | 1.4  | 62.7              | 64.7             |
| Hong Kong, SAR     | 1951 | 22.6 | 51.3 | 3.7  | 22.3 | 0.1                    | 51.3 | 0.0     | 0.1            | 0.0  | 46.3              | 56.3             |
| Hungary            | 1185 | 7.7  | 70.6 | 3.0  | 16.1 | 2.6                    | 70.6 | 1.4     | 0.3            | 1.0  | 66.9              | 74.3             |
| Indonesia          | 2193 | 20.6 | 64.6 | 5.6  | 8.3  | 0.8                    | 64.6 | 0.0     | 0.1            | 0.8  | 63.7              | 65.4             |
| Iran, Islamic Rep. | 1983 | 29.2 | 33.8 | 7.7  | 28.0 | 1.3                    | 33.8 | 0.0     | 0.3            | 1.1  | 26.8              | 38.4             |
| Israel             | 1568 | 18.7 | 58.4 | 7.4  | 12.9 | 2.6                    | 58.4 | 0.0     | 0.8            | 1.7  | 57.1              | 59.7             |
| Italy              | 1242 | 7.9  | 76.3 | 2.0  | 12.9 | 1.0                    | 76.3 | 0.0     | 0.5            | 0.4  | 72.8              | 79.8             |
| Japan              | 1775 | 8.5  | 78.9 | 2.7  | 9.6  | 0.3                    | 78.9 | 0.2     | 0.0            | 0.1  | 79.2              | 78.7             |
| Jordan             | 1893 | 13.4 | 66.7 | 5.9  | 13.2 | 0.9                    | 66.7 | 0.0     | 0.0            | 0.9  | 66.8              | 66.6             |
| Korea, Rep. of     | 2288 | 14.2 | 61.0 | 6.2  | 18.6 | 0.0                    | 61.0 | 0.0     | 0.0            | 0.0  | 57.2              | 64.8             |
| Latvia (LSS)       | 1074 | 24.4 | 42.2 | 5.4  | 25.6 | 2.4                    | 42.2 | 0.8     | 0.1            | 1.5  | 36.4              | 48.2             |
| Lithuania          | 878  | 30.6 | 40.6 | 4.5  | 21.0 | 3.3                    | 40.6 | 0.0     | 0.2            | 3.1  | 39.1              | 42.3             |
| Macedonia, Rep. of | 1513 | 25.2 | 54.8 | 4.5  | 10.8 | 4.8                    | 54.8 | 0.5     | 1.0            | 3.3  | 55.1              | 54.6             |
| Malaysia           | 2094 | 12.3 | 77.0 | 4.1  | 6.0  | 0.5                    | 77.0 | 0.0     | 0.2            | 0.3  | 77.3              | 76.6             |
| Moldova            | 1388 | 27.7 | 45.8 | 6.4  | 17.4 | 2.7                    | 45.8 | 1.2     | 0.5            | 0.9  | 46.7              | 44.6             |
| Morocco            | 2046 | 36.3 | 39.5 | 6.7  | 13.3 | 4.2                    | 39.5 | 0.4     | 0.4            | 3.3  | 36.2              | 41.5             |
| Netherlands        | 1098 | 13.3 | 71.3 | 2.3  | 12.6 | 0.5                    | 71.3 | 0.1     | 0.1            | 0.4  | 67.9              | 75.4             |
| New Zealand        | 1356 | 16.8 | 69.5 | 4.7  | 8.4  | 0.6                    | 69.5 | 0.0     | 0.1            | 0.5  | 67.3              | 71.7             |
| Philippines        | 2479 | 23.9 | 37.6 | 20.7 | 17.1 | 0.7                    | 37.6 | 0.0     | 0.2            | 0.5  | 39.4              | 35.7             |
| Romania            | 1287 | 20.9 | 45.7 | 5.6  | 25.2 | 2.6                    | 45.7 | 0.6     | 0.3            | 1.7  | 44.8              | 46.5             |
| Russian Federation | 1641 | 17.2 | 59.1 | 3.6  | 15.9 | 4.1                    | 59.1 | 1.1     | 0.1            | 2.9  | 57.1              | 61.1             |
| Singapore          | 1872 | 8.7  | 87.0 | 0.7  | 3.4  | 0.2                    | 87.0 | 0.1     | 0.0            | 0.1  | 84.5              | 89.2             |
| Slovak Republic    | 1315 | 6.9  | 80.1 | 2.3  | 10.1 | 0.6                    | 80.1 | 0.3     | 0.1            | 0.1  | 77.7              | 82.5             |
| Slovenia           | 1179 | 14.7 | 57.8 | 3.0  | 23.3 | 1.3                    | 57.8 | 0.2     | 0.1            | 0.9  | 55.7              | 60.1             |
| South Africa       | 3109 | 27.3 | 34.4 | 11.7 | 24.1 | 2.5                    | 34.4 | 0.2     | 1.2            | 1.1  | 34.9              | 33.8             |
| Thailand           | 2152 | 23.0 | 46.0 | 10.3 | 20.1 | 0.6                    | 46.0 | 0.0     | 0.4            | 0.2  | 45.7              | 46.4             |
| Tunisia            | 1897 | 31.5 | 46.6 | 5.5  | 8.2  | 8.3                    | 46.6 | 5.9     | 0.9            | 1.4  | 45.1              | 48.2             |
| Turkey             | 2931 | 29.8 | 34.0 | 6.8  | 27.3 | 2.0                    | 34.0 | 0.0     | 0.0            | 2.0  | 34.3              | 33.8             |
| United States      | 3388 | 15.8 | 74.8 | 4.1  | 4.9  | 0.4                    | 74.8 | 0.0     | 0.1            | 0.3  | 73.0              | 76.6             |
| International Avg. | .    | 19.1 | 59.8 | 4.8  | 14.6 | 1.7                    | 59.8 | 0.4     | 0.3            | 1.0  | 57.9              | 61.5             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Life Science  
 Label: Traits transferred from generations ( S012039 - G09 )  
 Item Type = MC Key = C

| COUNTRY            | N    | A    | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 1510 | 13.4 | 5.3  | 73.1 | 6.8  | 1.4                    | 73.1 | 0.2     | 0.2            | 1.1  | 76.0              | 69.9             |
| Belgium (Flemish)  | 1971 | 10.4 | 4.7  | 83.0 | 1.8  | 0.2                    | 83.0 | 0.1     | 0.0            | 0.1  | 85.4              | 80.5             |
| Bulgaria           | 1222 | 8.8  | 2.2  | 85.3 | 1.9  | 1.7                    | 85.3 | 0.4     | 0.3            | 1.0  | 86.4              | 84.2             |
| Canada             | 3311 | 11.7 | 2.3  | 80.7 | 4.3  | 0.9                    | 80.7 | 0.0     | 0.0            | 0.9  | 83.7              | 77.4             |
| Chile              | 2225 | 8.4  | 2.7  | 78.2 | 5.2  | 5.5                    | 78.2 | 0.0     | 2.7            | 2.8  | 79.5              | 76.9             |
| Chinese Taipei     | 2161 | 1.7  | 0.5  | 97.2 | 0.5  | 0.1                    | 97.2 | 0.0     | 0.0            | 0.0  | 98.6              | 95.8             |
| Cyprus             | 1162 | 16.1 | 8.1  | 68.7 | 6.4  | 0.6                    | 68.7 | 0.0     | 0.0            | 0.6  | 73.6              | 64.3             |
| Czech Republic     | 1306 | 9.9  | 1.4  | 88.2 | 0.2  | 0.3                    | 88.2 | 0.0     | 0.0            | 0.3  | 89.3              | 87.1             |
| England            | 1122 | 8.6  | 2.3  | 83.6 | 5.0  | 0.5                    | 83.6 | 0.0     | 0.0            | 0.5  | 83.1              | 84.1             |
| Finland            | 1103 | 12.6 | 3.4  | 80.0 | 2.9  | 1.1                    | 80.0 | 0.0     | 0.0            | 1.1  | 85.8              | 74.3             |
| Hong Kong, SAR     | 1951 | 4.7  | 0.7  | 93.8 | 0.8  | 0.1                    | 93.8 | 0.0     | 0.1            | 0.0  | 95.1              | 92.5             |
| Hungary            | 1185 | 4.8  | 3.1  | 89.1 | 1.5  | 1.6                    | 89.1 | 0.0     | 0.4            | 1.2  | 89.9              | 88.1             |
| Indonesia          | 2193 | 15.0 | 0.7  | 67.9 | 15.8 | 0.6                    | 67.9 | 0.0     | 0.2            | 0.5  | 75.0              | 61.1             |
| Iran, Islamic Rep. | 1983 | 8.9  | 18.8 | 43.9 | 25.4 | 3.0                    | 43.9 | 0.0     | 0.3            | 2.7  | 42.2              | 45.1             |
| Israel             | 1568 | 9.9  | 2.7  | 79.8 | 5.0  | 2.6                    | 79.8 | 0.0     | 0.8            | 1.8  | 82.4              | 77.5             |
| Italy              | 1242 | 13.4 | 4.2  | 73.5 | 6.1  | 2.8                    | 73.5 | 0.0     | 0.5            | 2.2  | 75.1              | 71.9             |
| Japan              | 1775 | 16.9 | 2.2  | 73.4 | 7.2  | 0.3                    | 73.4 | 0.0     | 0.0            | 0.3  | 76.3              | 70.5             |
| Jordan             | 1893 | 15.2 | 10.1 | 55.8 | 18.1 | 0.8                    | 55.8 | 0.2     | 0.0            | 0.7  | 58.4              | 53.5             |
| Korea, Rep. of     | 2288 | 6.4  | 1.7  | 82.3 | 9.5  | 0.0                    | 82.3 | 0.0     | 0.0            | 0.0  | 83.0              | 81.7             |
| Latvia (LSS)       | 1074 | 12.1 | 2.1  | 75.1 | 9.3  | 1.4                    | 75.1 | 0.5     | 0.1            | 0.8  | 77.6              | 72.4             |
| Lithuania          | 878  | 13.3 | 3.4  | 66.3 | 14.4 | 2.6                    | 66.3 | 0.0     | 0.3            | 2.4  | 67.7              | 64.7             |
| Macedonia, Rep. of | 1513 | 11.8 | 11.7 | 67.0 | 5.1  | 4.3                    | 67.0 | 0.1     | 1.3            | 2.9  | 69.0              | 65.1             |
| Malaysia           | 2094 | 10.3 | 2.8  | 78.1 | 7.7  | 1.3                    | 78.1 | 0.0     | 0.2            | 1.0  | 78.3              | 77.8             |
| Moldova            | 1388 | 16.1 | 6.4  | 68.0 | 7.8  | 1.8                    | 68.0 | 0.0     | 0.7            | 1.0  | 70.7              | 64.4             |
| Morocco            | 2047 | 14.7 | 6.1  | 61.2 | 13.1 | 4.9                    | 61.2 | 0.5     | 0.5            | 3.9  | 65.1              | 58.5             |
| Netherlands        | 1098 | 11.6 | 5.2  | 78.4 | 3.8  | 1.0                    | 78.4 | 0.1     | 0.1            | 0.8  | 80.6              | 75.8             |
| New Zealand        | 1356 | 20.4 | 4.4  | 63.4 | 10.3 | 1.6                    | 63.4 | 0.0     | 0.1            | 1.4  | 67.5              | 59.0             |
| Philippines        | 2479 | 11.1 | 4.9  | 66.2 | 16.7 | 1.1                    | 66.2 | 0.0     | 0.2            | 0.8  | 69.4              | 62.7             |
| Romania            | 1287 | 11.5 | 3.7  | 75.3 | 7.6  | 2.0                    | 75.3 | 0.2     | 0.4            | 1.4  | 79.2              | 71.7             |
| Russian Federation | 1641 | 12.2 | 3.8  | 73.2 | 8.5  | 2.3                    | 73.2 | 0.1     | 0.1            | 2.1  | 74.4              | 71.8             |
| Singapore          | 1872 | 11.1 | 2.0  | 77.8 | 8.7  | 0.4                    | 77.8 | 0.1     | 0.0            | 0.4  | 79.0              | 76.7             |
| Slovak Republic    | 1315 | 10.0 | 1.2  | 83.2 | 4.5  | 1.1                    | 83.2 | 0.0     | 0.1            | 0.9  | 87.4              | 78.8             |
| Slovenia           | 1179 | 7.7  | 8.1  | 77.3 | 5.2  | 1.7                    | 77.3 | 0.1     | 0.1            | 1.4  | 80.6              | 73.7             |
| South Africa       | 3109 | 19.9 | 10.6 | 47.7 | 19.0 | 2.8                    | 47.7 | 0.2     | 1.4            | 1.3  | 49.4              | 45.7             |
| Thailand           | 2152 | 10.5 | 2.5  | 76.2 | 10.1 | 0.7                    | 76.2 | 0.0     | 0.4            | 0.4  | 78.1              | 73.9             |
| Tunisia            | 1897 | 10.6 | 5.1  | 63.1 | 15.8 | 5.4                    | 63.1 | 2.5     | 1.1            | 1.8  | 65.5              | 60.5             |
| Turkey             | 2931 | 13.5 | 6.7  | 67.1 | 11.2 | 1.5                    | 67.1 | 0.0     | 0.0            | 1.5  | 72.1              | 63.7             |
| United States      | 3388 | 10.2 | 2.2  | 82.2 | 4.6  | 0.8                    | 82.2 | 0.0     | 0.1            | 0.6  | 86.0              | 78.5             |
| International Avg. | .    | 11.5 | 4.5  | 74.3 | 8.1  | 1.7                    | 74.3 | 0.1     | 0.3            | 1.2  | 76.7              | 71.9             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent



Science: Chemistry  
 Label: Atoms removed from chair ( S012040 - G10 )  
 Item Type = MC Key = C

| COUNTRY            | N    | A    | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 1510 | 17.7 | 10.7 | 62.8 | 7.7  | 1.1                    | 62.8 | 0.1     | 0.2            | 0.8  | 58.2              | 67.7             |
| Belgium (Flemish)  | 1971 | 23.2 | 15.2 | 46.1 | 14.4 | 1.1                    | 46.1 | 0.3     | 0.0            | 0.8  | 38.5              | 53.8             |
| Bulgaria           | 1222 | 13.4 | 14.0 | 64.7 | 4.7  | 3.2                    | 64.7 | 0.3     | 0.3            | 2.6  | 60.0              | 69.7             |
| Canada             | 3311 | 17.2 | 10.5 | 63.1 | 8.7  | 0.5                    | 63.1 | 0.0     | 0.0            | 0.5  | 59.0              | 67.5             |
| Chile              | 2226 | 25.7 | 10.0 | 48.0 | 10.1 | 6.2                    | 48.0 | 0.0     | 3.2            | 3.0  | 47.3              | 48.7             |
| Chinese Taipei     | 2161 | 27.4 | 13.0 | 53.3 | 6.0  | 0.2                    | 53.3 | 0.0     | 0.0            | 0.2  | 47.8              | 59.0             |
| Cyprus             | 1160 | 29.0 | 17.0 | 47.0 | 6.1  | 0.9                    | 47.0 | 0.0     | 0.0            | 0.9  | 50.0              | 44.3             |
| Czech Republic     | 1306 | 14.1 | 18.8 | 61.5 | 4.6  | 1.0                    | 61.5 | 0.1     | 0.0            | 0.9  | 53.5              | 69.5             |
| England            | 1122 | 22.2 | 11.4 | 58.9 | 7.3  | 0.3                    | 58.9 | 0.1     | 0.0            | 0.2  | 52.6              | 64.5             |
| Finland            | 1103 | 19.3 | 7.3  | 64.4 | 8.0  | 0.9                    | 64.4 | 0.0     | 0.0            | 0.9  | 54.3              | 74.3             |
| Hong Kong, SAR     | 1951 | 39.7 | 8.7  | 38.2 | 13.2 | 0.3                    | 38.2 | 0.0     | 0.1            | 0.2  | 32.9              | 43.4             |
| Hungary            | 1185 | 15.0 | 10.9 | 69.3 | 2.2  | 2.6                    | 69.3 | 0.1     | 0.4            | 2.1  | 65.4              | 73.4             |
| Indonesia          | 2193 | 59.0 | 12.1 | 13.5 | 14.0 | 1.4                    | 13.5 | 0.0     | 0.2            | 1.3  | 11.9              | 15.1             |
| Iran, Islamic Rep. | 1983 | 26.3 | 16.1 | 43.7 | 12.7 | 1.3                    | 43.7 | 0.0     | 0.3            | 1.0  | 36.3              | 48.7             |
| Israel             | 1568 | 22.6 | 11.4 | 56.8 | 5.3  | 3.8                    | 56.8 | 0.0     | 0.8            | 3.0  | 52.3              | 61.0             |
| Italy              | 1242 | 23.8 | 7.7  | 54.7 | 10.8 | 3.0                    | 54.7 | 0.0     | 0.6            | 2.4  | 52.1              | 57.4             |
| Japan              | 1775 | 24.5 | 12.4 | 59.0 | 3.6  | 0.5                    | 59.0 | 0.1     | 0.0            | 0.4  | 53.6              | 64.4             |
| Jordan             | 1889 | 22.5 | 14.0 | 54.4 | 7.4  | 1.8                    | 54.4 | 0.1     | 0.0            | 1.7  | 56.2              | 52.8             |
| Korea, Rep. of     | 2287 | 14.7 | 16.7 | 62.1 | 6.5  | 0.1                    | 62.1 | 0.0     | 0.0            | 0.1  | 57.2              | 66.8             |
| Latvia (LSS)       | 1074 | 14.8 | 12.4 | 66.5 | 4.7  | 1.6                    | 66.5 | 0.0     | 0.1            | 1.5  | 63.2              | 70.0             |
| Lithuania          | 878  | 18.4 | 14.2 | 59.2 | 5.7  | 2.5                    | 59.2 | 0.0     | 0.3            | 2.2  | 59.9              | 58.4             |
| Macedonia, Rep. of | 1513 | 23.7 | 11.6 | 51.9 | 7.0  | 5.9                    | 51.9 | 0.1     | 1.4            | 4.5  | 54.6              | 49.3             |
| Malaysia           | 2094 | 50.5 | 8.6  | 30.1 | 9.7  | 1.2                    | 30.1 | 0.0     | 0.2            | 1.0  | 27.5              | 33.1             |
| Moldova            | 1388 | 25.4 | 21.1 | 44.8 | 6.5  | 2.2                    | 44.8 | 0.2     | 0.7            | 1.3  | 43.4              | 46.5             |
| Morocco            | 1740 | 46.2 | 12.1 | 12.4 | 24.0 | 5.3                    | 12.4 | 0.3     | 0.7            | 4.2  | 11.8              | 12.8             |
| Netherlands        | 1098 | 27.6 | 8.3  | 47.5 | 15.1 | 1.5                    | 47.5 | 0.2     | 0.1            | 1.3  | 42.6              | 53.7             |
| New Zealand        | 1357 | 21.9 | 11.2 | 56.2 | 9.9  | 0.8                    | 56.2 | 0.1     | 0.2            | 0.5  | 52.7              | 59.7             |
| Philippines        | 2479 | 33.9 | 24.0 | 25.0 | 15.8 | 1.3                    | 25.0 | 0.0     | 0.2            | 1.0  | 22.6              | 27.7             |
| Romania            | 1287 | 22.0 | 17.6 | 53.0 | 5.4  | 2.0                    | 53.0 | 0.1     | 0.4            | 1.6  | 52.5              | 53.4             |
| Russian Federation | 1641 | 12.6 | 8.7  | 70.4 | 6.0  | 2.4                    | 70.4 | 0.0     | 0.3            | 2.0  | 67.7              | 73.1             |
| Singapore          | 1872 | 14.3 | 8.9  | 70.9 | 5.4  | 0.6                    | 70.9 | 0.1     | 0.0            | 0.5  | 66.9              | 74.4             |
| Slovak Republic    | 1315 | 12.7 | 17.4 | 64.7 | 3.9  | 1.3                    | 64.7 | 0.0     | 0.1            | 1.2  | 61.0              | 68.6             |
| Slovenia           | 1179 | 17.2 | 18.6 | 58.2 | 4.7  | 1.3                    | 58.2 | 0.0     | 0.1            | 1.3  | 53.4              | 63.4             |
| South Africa       | 3109 | 26.5 | 13.2 | 38.9 | 18.2 | 3.2                    | 38.9 | 0.0     | 1.6            | 1.6  | 39.6              | 38.1             |
| Thailand           | 2152 | 33.0 | 18.4 | 26.3 | 21.2 | 1.0                    | 26.3 | 0.0     | 0.4            | 0.6  | 25.1              | 27.6             |
| Tunisia            | 1897 | 41.2 | 9.5  | 31.9 | 10.2 | 7.0                    | 31.9 | 1.5     | 1.2            | 4.3  | 32.6              | 31.2             |
| Turkey             | 2932 | 32.0 | 12.3 | 41.7 | 12.7 | 1.3                    | 41.7 | 0.0     | 0.0            | 1.3  | 41.2              | 42.1             |
| United States      | 3388 | 16.5 | 8.8  | 67.8 | 6.6  | 0.3                    | 67.8 | 0.0     | 0.1            | 0.2  | 63.9              | 71.6             |
| International Avg. | .    | 25.0 | 13.0 | 51.0 | 9.1  | 1.9                    | 51.0 | 0.1     | 0.4            | 1.4  | 47.9              | 54.1             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Earth Science  
 Label: Rock at bottom of lake/ocean ( S012041 - G11 )  
 Item Type = MC Key = C

| COUNTRY            | N    | A    | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 1510 | 12.2 | 15.4 | 58.3 | 13.2 | 0.8                    | 58.3 | 0.1     | 0.2            | 0.6  | 56.4              | 60.3             |
| Belgium (Flemish)  | 1971 | 25.7 | 15.9 | 26.9 | 29.6 | 2.0                    | 26.9 | 0.2     | 0.0            | 1.8  | 26.6              | 27.2             |
| Bulgaria           | 1222 | 8.5  | 15.4 | 51.3 | 21.2 | 3.7                    | 51.3 | 0.3     | 0.4            | 2.9  | 50.7              | 51.9             |
| Canada             | 3311 | 10.9 | 13.2 | 58.1 | 17.6 | 0.3                    | 58.1 | 0.0     | 0.0            | 0.3  | 58.0              | 58.1             |
| Chile              | 2226 | 18.5 | 33.5 | 18.5 | 20.6 | 8.9                    | 18.5 | 0.0     | 3.6            | 5.2  | 17.5              | 19.5             |
| Chinese Taipei     | 2161 | 4.6  | 9.8  | 79.8 | 5.8  | 0.1                    | 79.8 | 0.0     | 0.0            | 0.0  | 81.6              | 77.9             |
| Cyprus             | 1153 | 18.4 | 28.1 | 32.4 | 18.9 | 2.2                    | 32.4 | 0.1     | 0.0            | 2.1  | 33.1              | 31.7             |
| Czech Republic     | 1306 | 17.1 | 11.6 | 58.4 | 11.6 | 1.2                    | 58.4 | 0.0     | 0.0            | 1.2  | 62.8              | 53.9             |
| England            | 1122 | 6.2  | 10.0 | 63.9 | 19.5 | 0.3                    | 63.9 | 0.1     | 0.0            | 0.3  | 67.2              | 61.1             |
| Finland            | 1103 | 10.4 | 39.3 | 22.7 | 25.5 | 2.2                    | 22.7 | 0.0     | 0.0            | 2.2  | 22.3              | 23.2             |
| Hong Kong, SAR     | 1951 | 3.3  | 7.1  | 78.4 | 11.0 | 0.2                    | 78.4 | 0.0     | 0.1            | 0.1  | 79.5              | 77.4             |
| Hungary            | 1185 | 1.9  | 3.7  | 88.8 | 4.2  | 1.4                    | 88.8 | 0.1     | 0.5            | 0.8  | 88.2              | 89.4             |
| Indonesia          | 2193 | 11.1 | 38.5 | 35.1 | 13.7 | 1.6                    | 35.1 | 0.0     | 0.2            | 1.4  | 34.7              | 35.4             |
| Iran, Islamic Rep. | 1983 | 4.0  | 5.5  | 80.9 | 8.7  | 0.9                    | 80.9 | 0.0     | 0.3            | 0.6  | 80.8              | 81.0             |
| Israel             | 1568 | 12.9 | 13.2 | 60.6 | 9.1  | 4.1                    | 60.6 | 0.1     | 1.0            | 3.1  | 64.6              | 56.9             |
| Italy              | 1242 | 10.7 | 15.1 | 54.2 | 17.2 | 2.9                    | 54.2 | 0.1     | 0.8            | 2.0  | 56.1              | 52.1             |
| Japan              | 1775 | 5.4  | 12.2 | 62.1 | 19.9 | 0.4                    | 62.1 | 0.0     | 0.1            | 0.2  | 63.5              | 60.8             |
| Jordan             | 1889 | 8.7  | 15.2 | 64.2 | 10.9 | 1.0                    | 64.2 | 0.1     | 0.0            | 1.0  | 69.6              | 59.4             |
| Korea, Rep. of     | 2288 | 4.6  | 1.6  | 86.2 | 7.6  | 0.0                    | 86.2 | 0.0     | 0.0            | 0.0  | 88.1              | 84.3             |
| Latvia (LSS)       | 1074 | 7.8  | 4.4  | 73.4 | 12.1 | 2.1                    | 73.4 | 0.0     | 0.4            | 1.7  | 72.5              | 74.4             |
| Lithuania          | 878  | 1.6  | 4.8  | 89.2 | 2.8  | 1.6                    | 89.2 | 0.0     | 0.4            | 1.2  | 90.6              | 87.7             |
| Macedonia, Rep. of | 1513 | 27.2 | 29.0 | 20.8 | 15.7 | 7.3                    | 20.8 | 0.3     | 1.7            | 5.3  | 20.2              | 21.5             |
| Malaysia           | 2094 | 10.3 | 16.3 | 52.1 | 19.0 | 2.3                    | 52.1 | 0.0     | 0.2            | 2.0  | 53.6              | 50.3             |
| Moldova            | 1388 | 9.3  | 17.4 | 62.4 | 8.5  | 2.5                    | 62.4 | 0.1     | 0.8            | 1.6  | 64.8              | 59.2             |
| Morocco            | 1740 | 27.7 | 18.4 | 37.9 | 12.8 | 3.3                    | 37.9 | 0.3     | 1.3            | 1.7  | 36.0              | 39.0             |
| Netherlands        | 1098 | 11.0 | 22.6 | 45.9 | 19.2 | 1.3                    | 45.9 | 0.0     | 0.1            | 1.2  | 41.4              | 51.4             |
| New Zealand        | 1357 | 11.4 | 27.2 | 40.3 | 20.5 | 0.6                    | 40.3 | 0.0     | 0.2            | 0.4  | 41.3              | 39.2             |
| Philippines        | 2479 | 11.0 | 16.0 | 50.9 | 21.0 | 1.1                    | 50.9 | 0.0     | 0.4            | 0.7  | 51.1              | 50.7             |
| Romania            | 1287 | 26.0 | 13.0 | 39.3 | 19.1 | 2.7                    | 39.3 | 0.2     | 0.4            | 2.0  | 40.9              | 37.8             |
| Russian Federation | 1641 | 5.8  | 15.3 | 64.5 | 10.7 | 3.8                    | 64.5 | 0.1     | 0.5            | 3.2  | 65.7              | 63.2             |
| Singapore          | 1872 | 6.5  | 8.5  | 63.8 | 20.9 | 0.3                    | 63.8 | 0.0     | 0.0            | 0.3  | 65.0              | 62.7             |
| Slovak Republic    | 1315 | 38.1 | 10.6 | 20.0 | 29.9 | 1.4                    | 20.0 | 0.0     | 0.3            | 1.1  | 18.8              | 21.2             |
| Slovenia           | 1179 | 18.9 | 5.7  | 52.8 | 21.1 | 1.5                    | 52.8 | 0.2     | 0.1            | 1.2  | 55.4              | 49.9             |
| South Africa       | 3109 | 12.9 | 29.5 | 24.3 | 30.0 | 3.3                    | 24.3 | 0.1     | 1.9            | 1.4  | 23.7              | 24.9             |
| Thailand           | 2152 | 16.4 | 13.5 | 45.5 | 24.0 | 0.6                    | 45.5 | 0.0     | 0.4            | 0.2  | 44.7              | 46.4             |
| Tunisia            | 1897 | 3.2  | 7.7  | 79.0 | 5.9  | 4.3                    | 79.0 | 1.9     | 1.4            | 1.0  | 78.9              | 79.1             |
| Turkey             | 2932 | 10.1 | 30.6 | 34.9 | 20.3 | 4.0                    | 34.9 | 0.0     | 0.1            | 4.0  | 37.0              | 33.5             |
| United States      | 3388 | 11.6 | 14.4 | 55.2 | 18.3 | 0.4                    | 55.2 | 0.0     | 0.1            | 0.3  | 55.9              | 54.6             |
| International Avg. | .    | 12.2 | 16.0 | 53.5 | 16.3 | 2.1                    | 53.5 | 0.1     | 0.5            | 1.5  | 54.2              | 52.8             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Environmental and Resource Issues  
 Label: Nonrenewable natural resource ( S012042 - G12 )  
 Item Type = MC Key = D

| COUNTRY            | N    | A    | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 1510 | 10.2 | 10.3 | 20.3 | 58.4 | 0.7                    | 58.4 | 0.1     | 0.2            | 0.5  | 55.4              | 61.6             |
| Belgium (Flemish)  | 1971 | 12.8 | 6.1  | 28.2 | 52.1 | 0.8                    | 52.1 | 0.3     | 0.0            | 0.4  | 48.8              | 55.5             |
| Bulgaria           | 1222 | 8.7  | 6.6  | 16.1 | 64.6 | 4.1                    | 64.6 | 1.5     | 0.4            | 2.2  | 63.6              | 65.7             |
| Canada             | 3311 | 10.0 | 7.3  | 19.1 | 63.1 | 0.5                    | 63.1 | 0.1     | 0.0            | 0.4  | 58.7              | 68.0             |
| Chile              | 2226 | 12.8 | 13.5 | 22.1 | 45.6 | 6.0                    | 45.6 | 0.0     | 4.0            | 2.0  | 44.9              | 46.3             |
| Chinese Taipei     | 2161 | 6.2  | 3.3  | 15.0 | 75.2 | 0.3                    | 75.2 | 0.2     | 0.0            | 0.1  | 71.4              | 79.1             |
| Cyprus             | 1163 | 12.0 | 13.6 | 18.2 | 55.1 | 1.1                    | 55.1 | 0.6     | 0.0            | 0.4  | 54.6              | 55.6             |
| Czech Republic     | 1306 | 7.0  | 5.9  | 38.4 | 47.5 | 1.2                    | 47.5 | 0.5     | 0.1            | 0.6  | 41.4              | 53.7             |
| England            | 1122 | 13.3 | 4.6  | 10.4 | 71.3 | 0.3                    | 71.3 | 0.3     | 0.0            | 0.1  | 66.9              | 75.3             |
| Finland            | 1103 | 5.3  | 11.0 | 17.2 | 65.1 | 1.4                    | 65.1 | 0.0     | 0.0            | 1.4  | 65.0              | 65.2             |
| Hong Kong, SAR     | 1951 | 4.0  | 6.0  | 22.7 | 67.2 | 0.1                    | 67.2 | 0.0     | 0.1            | 0.0  | 63.3              | 71.0             |
| Hungary            | 1185 | 7.6  | 19.0 | 18.8 | 52.2 | 2.4                    | 52.2 | 0.9     | 0.6            | 1.0  | 46.3              | 58.4             |
| Indonesia          | 2194 | 5.9  | 6.0  | 25.5 | 62.1 | 0.5                    | 62.1 | 0.0     | 0.2            | 0.3  | 57.1              | 66.8             |
| Iran, Islamic Rep. | 1983 | 10.3 | 13.6 | 34.8 | 40.1 | 1.2                    | 40.1 | 0.0     | 0.3            | 0.9  | 36.9              | 42.3             |
| Israel             | 1568 | 8.2  | 13.5 | 23.2 | 51.4 | 3.7                    | 51.4 | 0.4     | 1.0            | 2.3  | 50.9              | 51.8             |
| Italy              | 1242 | 9.5  | 6.6  | 16.7 | 65.0 | 2.2                    | 65.0 | 0.1     | 0.9            | 1.3  | 66.9              | 63.0             |
| Japan              | 1775 | 7.5  | 9.4  | 47.9 | 34.5 | 0.7                    | 34.5 | 0.5     | 0.1            | 0.1  | 30.4              | 38.5             |
| Jordan             | 1889 | 11.0 | 9.0  | 13.5 | 65.7 | 0.8                    | 65.7 | 0.3     | 0.0            | 0.5  | 65.6              | 65.8             |
| Korea, Rep. of     | 2288 | 4.2  | 3.3  | 10.7 | 81.8 | 0.0                    | 81.8 | 0.0     | 0.0            | 0.0  | 79.6              | 84.0             |
| Latvia (LSS)       | 1074 | 8.0  | 8.0  | 44.7 | 36.9 | 2.4                    | 36.9 | 1.2     | 0.5            | 0.6  | 31.7              | 42.2             |
| Lithuania          | 878  | 17.1 | 11.4 | 21.9 | 46.7 | 3.0                    | 46.7 | 0.0     | 0.4            | 2.6  | 43.9              | 49.8             |
| Macedonia, Rep. of | 1513 | 15.1 | 9.2  | 35.8 | 34.6 | 5.3                    | 34.6 | 0.7     | 2.0            | 2.6  | 35.6              | 33.6             |
| Malaysia           | 2094 | 5.0  | 8.7  | 33.7 | 52.2 | 0.5                    | 52.2 | 0.0     | 0.2            | 0.2  | 50.0              | 54.8             |
| Moldova            | .    | .    | .    | .    | .    | .                      | .    | .       | .              | .    | .                 | .                |
| Morocco            | 1739 | 17.7 | 16.7 | 17.8 | 39.0 | 8.8                    | 39.0 | 4.6     | 1.5            | 2.7  | 38.1              | 39.6             |
| Netherlands        | 1098 | 7.9  | 7.5  | 28.3 | 55.5 | 0.8                    | 55.5 | 0.1     | 0.1            | 0.7  | 49.1              | 63.5             |
| New Zealand        | 1357 | 13.0 | 9.9  | 20.8 | 55.6 | 0.6                    | 55.6 | 0.1     | 0.2            | 0.3  | 53.0              | 58.3             |
| Philippines        | 2479 | 21.3 | 22.0 | 21.7 | 33.8 | 1.3                    | 33.8 | 0.0     | 0.4            | 0.9  | 34.5              | 33.0             |
| Romania            | 1286 | 11.8 | 12.0 | 15.7 | 56.9 | 3.6                    | 56.9 | 1.8     | 0.5            | 1.2  | 55.6              | 58.1             |
| Russian Federation | 1641 | 6.9  | 8.7  | 21.2 | 60.0 | 3.2                    | 60.0 | 0.5     | 1.0            | 1.7  | 56.1              | 64.1             |
| Singapore          | 1872 | 3.9  | 3.0  | 6.9  | 86.1 | 0.2                    | 86.1 | 0.0     | 0.0            | 0.1  | 84.8              | 87.3             |
| Slovak Republic    | 1315 | 4.0  | 3.5  | 38.5 | 52.4 | 1.7                    | 52.4 | 0.8     | 0.3            | 0.6  | 46.0              | 59.2             |
| Slovenia           | 1179 | 8.9  | 7.3  | 25.3 | 56.8 | 1.6                    | 56.8 | 0.5     | 0.1            | 1.0  | 50.7              | 63.5             |
| South Africa       | 3109 | 15.0 | 26.2 | 23.1 | 32.5 | 3.3                    | 32.5 | 0.3     | 2.0            | 1.0  | 30.0              | 35.3             |
| Thailand           | 2152 | 14.8 | 8.5  | 23.4 | 52.6 | 0.7                    | 52.6 | 0.0     | 0.5            | 0.3  | 49.3              | 56.5             |
| Tunisia            | 1896 | 6.4  | 13.2 | 21.2 | 42.0 | 17.1                   | 42.0 | 13.5    | 1.8            | 1.8  | 40.4              | 43.8             |
| Turkey             | 2932 | 8.8  | 12.8 | 49.5 | 27.6 | 1.3                    | 27.6 | 0.0     | 0.1            | 1.2  | 27.0              | 28.0             |
| United States      | 3388 | 10.2 | 8.0  | 21.7 | 59.5 | 0.6                    | 59.5 | 0.1     | 0.1            | 0.4  | 55.6              | 63.2             |
| International Avg. | .    | 9.8  | 9.9  | 24.1 | 54.0 | 2.3                    | 54.0 | 0.8     | 0.5            | 0.9  | 51.3              | 56.8             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Life Science  
 Label: NOT a function of blood ( S012043 - H01 )  
 Item Type = MC Key = A

| COUNTRY            | N    | A    | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 1509 | 79.8 | 8.0  | 8.8  | 3.0  | 0.4                    | 79.8 | 0.4     | 0.0            | 0.1  | 80.6              | 78.9             |
| Belgium (Flemish)  | 1986 | 77.2 | 14.0 | 5.3  | 3.2  | 0.4                    | 77.2 | 0.2     | 0.0            | 0.2  | 75.5              | 78.8             |
| Bulgaria           | 1223 | 78.9 | 7.8  | 5.4  | 4.1  | 3.8                    | 78.9 | 1.6     | 0.1            | 2.1  | 75.9              | 82.2             |
| Canada             | 3272 | 80.8 | 8.0  | 6.8  | 3.9  | 0.5                    | 80.8 | 0.2     | 0.0            | 0.3  | 82.2              | 79.3             |
| Chile              | 2214 | 68.6 | 8.2  | 10.6 | 10.5 | 2.1                    | 68.6 | 0.0     | 0.3            | 1.8  | 67.9              | 69.3             |
| Chinese Taipei     | 2167 | 88.5 | 6.3  | 2.5  | 2.5  | 0.3                    | 88.5 | 0.1     | 0.0            | 0.2  | 90.3              | 86.6             |
| Cyprus             | .    | .    | .    | .    | .    | .                      | .    | .       | .              | .    | .                 | .                |
| Czech Republic     | 1287 | 88.0 | 7.5  | 2.3  | 2.0  | 0.2                    | 88.0 | 0.2     | 0.0            | 0.0  | 85.4              | 90.7             |
| England            | 1090 | 80.7 | 8.4  | 7.9  | 1.9  | 1.2                    | 80.7 | 0.9     | 0.0            | 0.2  | 79.9              | 81.3             |
| Finland            | 1084 | 80.0 | 8.1  | 4.0  | 3.4  | 4.6                    | 80.0 | 0.0     | 0.0            | 4.6  | 81.9              | 77.9             |
| Hong Kong, SAR     | 1933 | 76.3 | 8.0  | 6.0  | 8.9  | 0.9                    | 76.3 | 0.1     | 0.0            | 0.8  | 77.9              | 74.7             |
| Hungary            | 1189 | 84.8 | 4.3  | 6.2  | 2.0  | 2.6                    | 84.8 | 1.3     | 0.2            | 1.0  | 84.4              | 85.3             |
| Indonesia          | 2185 | 52.6 | 14.2 | 22.1 | 10.1 | 1.1                    | 52.6 | 0.0     | 0.0            | 1.0  | 50.1              | 55.0             |
| Iran, Islamic Rep. | 1988 | 56.1 | 17.8 | 13.3 | 11.0 | 1.9                    | 56.1 | 0.0     | 0.0            | 1.8  | 55.9              | 56.2             |
| Israel             | 1575 | 63.6 | 13.2 | 10.8 | 9.0  | 3.5                    | 63.6 | 0.5     | 0.3            | 2.7  | 64.7              | 62.5             |
| Italy              | 1235 | 77.0 | 11.0 | 5.9  | 5.6  | 0.5                    | 77.0 | 0.0     | 0.0            | 0.5  | 79.4              | 74.6             |
| Japan              | 1793 | 83.7 | 7.5  | 4.4  | 3.7  | 0.7                    | 83.7 | 0.6     | 0.0            | 0.1  | 83.3              | 84.2             |
| Jordan             | 1885 | 62.7 | 16.1 | 12.0 | 7.6  | 1.6                    | 62.7 | 0.3     | 0.1            | 1.2  | 67.4              | 58.5             |
| Korea, Rep. of     | 2292 | 77.2 | 9.9  | 7.1  | 5.7  | 0.1                    | 77.2 | 0.0     | 0.0            | 0.0  | 76.7              | 77.7             |
| Latvia (LSS)       | 1080 | 58.3 | 14.4 | 13.9 | 10.9 | 2.4                    | 58.3 | 1.0     | 0.0            | 1.4  | 57.7              | 59.1             |
| Lithuania          | 896  | 69.3 | 16.8 | 4.3  | 8.4  | 1.2                    | 69.3 | 0.0     | 0.0            | 1.2  | 69.8              | 68.8             |
| Macedonia, Rep. of | 1512 | 65.0 | 11.8 | 8.4  | 10.3 | 4.7                    | 65.0 | 1.3     | 0.2            | 3.1  | 67.0              | 63.0             |
| Malaysia           | 2084 | 56.9 | 22.7 | 11.8 | 7.6  | 0.9                    | 56.9 | 0.0     | 0.0            | 0.9  | 56.2              | 57.8             |
| Moldova            | 1396 | 56.1 | 18.2 | 11.3 | 11.4 | 2.9                    | 56.1 | 1.1     | 0.1            | 1.7  | 56.2              | 55.9             |
| Morocco            | 2042 | 42.7 | 11.9 | 17.3 | 23.0 | 5.2                    | 42.7 | 1.7     | 0.7            | 2.8  | 44.3              | 41.4             |
| Netherlands        | 1107 | 78.6 | 12.5 | 3.6  | 5.2  | 0.2                    | 78.6 | 0.1     | 0.0            | 0.1  | 79.7              | 77.6             |
| New Zealand        | 1358 | 72.5 | 10.4 | 10.2 | 6.2  | 0.8                    | 72.5 | 0.4     | 0.1            | 0.3  | 72.6              | 72.3             |
| Philippines        | 2452 | 50.0 | 17.8 | 15.5 | 15.5 | 1.1                    | 50.0 | 0.0     | 0.1            | 1.0  | 51.3              | 48.7             |
| Romania            | 1273 | 66.4 | 12.5 | 7.7  | 9.2  | 4.1                    | 66.4 | 2.4     | 0.2            | 1.6  | 67.5              | 65.3             |
| Russian Federation | 1634 | 74.7 | 10.3 | 5.6  | 6.6  | 2.8                    | 74.7 | 1.2     | 0.2            | 1.4  | 74.4              | 75.1             |
| Singapore          | 1849 | 74.1 | 16.6 | 6.8  | 2.4  | 0.1                    | 74.1 | 0.0     | 0.0            | 0.1  | 73.2              | 74.9             |
| Slovak Republic    | 1318 | 80.6 | 8.6  | 5.7  | 3.9  | 1.2                    | 80.6 | 0.7     | 0.0            | 0.5  | 79.4              | 81.8             |
| Slovenia           | 1172 | 72.9 | 15.8 | 5.5  | 2.9  | 2.9                    | 72.9 | 2.0     | 0.0            | 0.9  | 70.8              | 75.1             |
| South Africa       | 3069 | 35.1 | 22.7 | 20.5 | 19.5 | 2.3                    | 35.1 | 0.5     | 0.6            | 1.3  | 34.4              | 35.9             |
| Thailand           | 2162 | 90.2 | 3.6  | 2.2  | 3.9  | 0.0                    | 90.2 | 0.0     | 0.0            | 0.0  | 90.9              | 89.5             |
| Tunisia            | 1899 | 44.4 | 6.2  | 14.1 | 11.3 | 23.9                   | 44.4 | 22.4    | 0.2            | 1.3  | 44.8              | 44.0             |
| Turkey             | 2936 | 50.9 | 15.0 | 17.7 | 15.1 | 1.3                    | 50.9 | 0.0     | 0.0            | 1.3  | 53.7              | 48.8             |
| United States      | 3356 | 82.6 | 6.7  | 7.2  | 3.3  | 0.2                    | 82.6 | 0.0     | 0.0            | 0.2  | 83.0              | 82.1             |
| International Avg. | .    | 69.7 | 11.7 | 8.9  | 7.4  | 2.3                    | 69.7 | 1.1     | 0.1            | 1.1  | 69.9              | 69.5             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Life Science  
 Label: Role of vitamins ( S012044 - H02 )  
 Item Type = MC Key = D

| COUNTRY            | N    | A    | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 1509 | 2.9  | 3.3  | 10.8 | 82.8 | 0.3                    | 82.8 | 0.0     | 0.0            | 0.3  | 85.6              | 79.8             |
| Belgium (Flemish)  | 1986 | 1.5  | 3.2  | 7.9  | 87.3 | 0.2                    | 87.3 | 0.0     | 0.0            | 0.2  | 86.1              | 88.4             |
| Bulgaria           | 1223 | 5.9  | 2.7  | 2.1  | 87.3 | 2.0                    | 87.3 | 0.5     | 0.3            | 1.2  | 86.1              | 88.6             |
| Canada             | 3272 | 2.4  | 1.9  | 13.7 | 81.7 | 0.4                    | 81.7 | 0.0     | 0.0            | 0.3  | 81.3              | 82.1             |
| Chile              | 2214 | 2.8  | 3.8  | 13.3 | 78.5 | 1.6                    | 78.5 | 0.0     | 0.5            | 1.2  | 80.4              | 76.6             |
| Chinese Taipei     | 2166 | 4.8  | 4.4  | 19.9 | 70.6 | 0.3                    | 70.6 | 0.1     | 0.0            | 0.2  | 69.6              | 71.6             |
| Cyprus             | 1158 | 4.8  | 10.3 | 16.3 | 68.1 | 0.5                    | 68.1 | 0.0     | 0.0            | 0.5  | 71.7              | 64.5             |
| Czech Republic     | 1287 | 1.6  | 7.1  | 6.2  | 84.4 | 0.8                    | 84.4 | 0.1     | 0.0            | 0.6  | 84.0              | 84.8             |
| England            | 1090 | 2.1  | 2.0  | 12.8 | 82.9 | 0.3                    | 82.9 | 0.1     | 0.0            | 0.2  | 80.4              | 85.1             |
| Finland            | 1084 | 0.5  | 2.1  | 8.9  | 87.7 | 0.9                    | 87.7 | 0.0     | 0.0            | 0.9  | 88.6              | 86.6             |
| Hong Kong, SAR     | 1933 | 7.6  | 6.8  | 15.5 | 68.9 | 1.2                    | 68.9 | 0.0     | 0.0            | 1.1  | 69.3              | 68.7             |
| Hungary            | 1189 | 1.0  | 1.9  | 1.3  | 94.7 | 1.1                    | 94.7 | 0.4     | 0.2            | 0.4  | 95.5              | 94.1             |
| Indonesia          | 2185 | 5.5  | 3.0  | 6.9  | 83.6 | 0.9                    | 83.6 | 0.0     | 0.1            | 0.9  | 84.8              | 82.4             |
| Iran, Islamic Rep. | 1988 | 5.6  | 12.8 | 9.5  | 70.0 | 2.1                    | 70.0 | 0.0     | 0.0            | 2.1  | 69.6              | 70.2             |
| Israel             | 1575 | 5.1  | 13.7 | 3.9  | 74.9 | 2.5                    | 74.9 | 0.0     | 0.6            | 1.9  | 77.6              | 72.2             |
| Italy              | 1235 | 1.7  | 6.2  | 8.7  | 82.9 | 0.4                    | 82.9 | 0.0     | 0.0            | 0.4  | 82.8              | 82.9             |
| Japan              | 1793 | 4.5  | 13.3 | 16.9 | 65.2 | 0.1                    | 65.2 | 0.1     | 0.0            | 0.0  | 64.9              | 65.5             |
| Jordan             | 1885 | 4.9  | 11.2 | 9.1  | 72.9 | 1.9                    | 72.9 | 0.1     | 0.1            | 1.7  | 77.5              | 68.7             |
| Korea, Rep. of     | 2292 | 2.0  | 1.7  | 4.1  | 92.2 | 0.0                    | 92.2 | 0.0     | 0.0            | 0.0  | 93.3              | 91.1             |
| Latvia (LSS)       | 1081 | 1.3  | 1.2  | 1.6  | 95.5 | 0.4                    | 95.5 | 0.2     | 0.0            | 0.2  | 94.8              | 96.3             |
| Lithuania          | 896  | 3.2  | 4.1  | 5.9  | 86.0 | 0.8                    | 86.0 | 0.0     | 0.0            | 0.8  | 88.5              | 83.4             |
| Macedonia, Rep. of | 1512 | 8.4  | 11.1 | 7.1  | 71.1 | 2.2                    | 71.1 | 0.2     | 0.2            | 1.8  | 72.9              | 69.5             |
| Malaysia           | 2084 | 4.0  | 4.2  | 5.2  | 86.3 | 0.4                    | 86.3 | 0.0     | 0.0            | 0.4  | 87.8              | 84.4             |
| Moldova            | 1396 | 5.1  | 7.5  | 14.6 | 71.1 | 1.6                    | 71.1 | 0.6     | 0.3            | 0.6  | 70.2              | 72.2             |
| Morocco            | 2042 | 11.8 | 14.2 | 11.1 | 59.0 | 3.9                    | 59.0 | 0.6     | 0.9            | 2.4  | 65.0              | 54.8             |
| Netherlands        | 1107 | 0.9  | 3.3  | 2.5  | 93.3 | 0.0                    | 93.3 | 0.0     | 0.0            | 0.0  | 95.1              | 91.5             |
| New Zealand        | 1358 | 3.1  | 3.6  | 17.2 | 75.7 | 0.4                    | 75.7 | 0.2     | 0.1            | 0.1  | 77.8              | 73.6             |
| Philippines        | 2452 | 5.3  | 4.6  | 20.9 | 68.0 | 1.2                    | 68.0 | 0.0     | 0.2            | 1.0  | 73.2              | 62.1             |
| Romania            | 1275 | 5.4  | 4.5  | 14.3 | 74.4 | 1.5                    | 74.4 | 0.9     | 0.2            | 0.3  | 75.4              | 73.3             |
| Russian Federation | 1635 | 1.7  | 1.6  | 1.0  | 95.1 | 0.6                    | 95.1 | 0.2     | 0.2            | 0.3  | 96.5              | 93.7             |
| Singapore          | 1849 | 2.0  | 3.5  | 14.4 | 80.1 | 0.1                    | 80.1 | 0.0     | 0.0            | 0.1  | 78.5              | 81.7             |
| Slovak Republic    | 1318 | 1.3  | 3.3  | 5.6  | 89.2 | 0.7                    | 89.2 | 0.2     | 0.0            | 0.5  | 90.5              | 88.0             |
| Slovenia           | 1172 | 4.2  | 2.7  | 2.7  | 89.7 | 0.6                    | 89.7 | 0.3     | 0.0            | 0.4  | 90.6              | 88.8             |
| South Africa       | 3069 | 8.6  | 22.7 | 31.1 | 34.9 | 2.6                    | 34.9 | 0.5     | 0.7            | 1.4  | 35.2              | 34.6             |
| Thailand           | 2162 | 3.7  | 4.4  | 13.0 | 78.9 | 0.0                    | 78.9 | 0.0     | 0.0            | 0.0  | 79.9              | 77.8             |
| Tunisia            | 1900 | 2.4  | 29.2 | 4.4  | 54.5 | 9.5                    | 54.5 | 8.2     | 0.3            | 1.0  | 55.5              | 53.3             |
| Turkey             | 2936 | 3.5  | 11.1 | 15.5 | 69.0 | 0.9                    | 69.0 | 0.0     | 0.0            | 0.9  | 72.1              | 66.7             |
| United States      | 3356 | 2.3  | 2.1  | 17.6 | 77.8 | 0.2                    | 77.8 | 0.0     | 0.0            | 0.1  | 79.5              | 76.1             |
| International Avg. | .    | 3.8  | 6.6  | 10.4 | 78.1 | 1.2                    | 78.1 | 0.4     | 0.1            | 0.7  | 79.2              | 77.0             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Earth Science  
 Label: Why moon shines ( S012045 - H03 )  
 Item Type = MC Key = A

| COUNTRY            | N    | A    | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 1509 | 83.5 | 3.1  | 2.4  | 10.6 | 0.4                    | 83.5 | 0.0     | 0.0            | 0.4  | 79.2              | 88.1             |
| Belgium (Flemish)  | 1986 | 86.4 | 4.4  | 1.3  | 7.3  | 0.6                    | 86.4 | 0.0     | 0.0            | 0.6  | 80.7              | 92.0             |
| Bulgaria           | 1223 | 93.5 | 1.6  | 0.5  | 2.8  | 1.5                    | 93.5 | 0.4     | 0.3            | 0.9  | 92.6              | 94.5             |
| Canada             | 3272 | 86.6 | 3.0  | 2.5  | 7.6  | 0.4                    | 86.6 | 0.1     | 0.0            | 0.3  | 82.6              | 90.6             |
| Chile              | 2213 | 63.6 | 6.9  | 3.8  | 23.2 | 2.5                    | 63.6 | 0.0     | 0.6            | 1.9  | 57.1              | 70.1             |
| Chinese Taipei     | 2167 | 94.8 | 2.4  | 1.3  | 1.4  | 0.2                    | 94.8 | 0.0     | 0.0            | 0.2  | 94.4              | 95.1             |
| Cyprus             | 1158 | 83.7 | 8.5  | 1.3  | 5.9  | 0.7                    | 83.7 | 0.1     | 0.0            | 0.6  | 83.8              | 83.5             |
| Czech Republic     | 1287 | 85.9 | 4.4  | 1.6  | 8.0  | 0.1                    | 85.9 | 0.0     | 0.0            | 0.1  | 79.1              | 92.8             |
| England            | 1090 | 88.3 | 2.1  | 1.5  | 7.8  | 0.2                    | 88.3 | 0.1     | 0.0            | 0.1  | 83.6              | 92.4             |
| Finland            | 1084 | 86.2 | 0.7  | 1.6  | 10.7 | 0.8                    | 86.2 | 0.0     | 0.0            | 0.8  | 84.8              | 87.8             |
| Hong Kong, SAR     | 1933 | 95.7 | 1.3  | 0.5  | 1.7  | 0.9                    | 95.7 | 0.0     | 0.0            | 0.9  | 95.1              | 96.2             |
| Hungary            | 1189 | 86.1 | 1.2  | 1.9  | 9.2  | 1.6                    | 86.1 | 0.0     | 0.2            | 1.4  | 81.8              | 90.3             |
| Indonesia          | 2185 | 76.3 | 14.1 | 3.9  | 4.7  | 1.0                    | 76.3 | 0.0     | 0.1            | 0.9  | 71.1              | 81.3             |
| Iran, Islamic Rep. | 1988 | 82.1 | 7.1  | 5.2  | 3.9  | 1.6                    | 82.1 | 0.0     | 0.1            | 1.5  | 77.8              | 85.0             |
| Israel             | 1575 | 72.3 | 14.7 | 2.7  | 6.8  | 3.6                    | 72.3 | 0.0     | 0.6            | 3.0  | 67.8              | 76.6             |
| Italy              | 1235 | 75.4 | 6.0  | 4.2  | 13.9 | 0.5                    | 75.4 | 0.0     | 0.0            | 0.5  | 72.2              | 78.6             |
| Japan              | 1793 | 89.2 | 0.8  | 0.3  | 9.6  | 0.1                    | 89.2 | 0.1     | 0.0            | 0.1  | 86.9              | 91.3             |
| Jordan             | 1885 | 82.8 | 7.9  | 3.2  | 5.1  | 0.9                    | 82.8 | 0.1     | 0.1            | 0.7  | 81.0              | 84.4             |
| Korea, Rep. of     | 2292 | 80.1 | 3.2  | 5.2  | 11.4 | 0.1                    | 80.1 | 0.0     | 0.0            | 0.1  | 77.2              | 82.9             |
| Latvia (LSS)       | 1081 | 83.4 | 3.4  | 2.5  | 10.0 | 0.6                    | 83.4 | 0.2     | 0.0            | 0.4  | 80.4              | 86.7             |
| Lithuania          | 896  | 72.0 | 4.0  | 6.9  | 16.6 | 0.5                    | 72.0 | 0.0     | 0.0            | 0.5  | 71.0              | 73.1             |
| Macedonia, Rep. of | 1512 | 80.0 | 8.8  | 1.5  | 6.2  | 3.5                    | 80.0 | 0.2     | 0.2            | 3.1  | 79.3              | 80.7             |
| Malaysia           | 2084 | 86.6 | 1.6  | 3.6  | 7.3  | 0.8                    | 86.6 | 0.0     | 0.0            | 0.8  | 86.2              | 87.2             |
| Moldova            | 1396 | 75.3 | 8.7  | 4.7  | 9.4  | 1.9                    | 75.3 | 0.1     | 0.3            | 1.4  | 72.9              | 78.0             |
| Morocco            | 2042 | 64.1 | 12.1 | 8.6  | 10.9 | 4.3                    | 64.1 | 1.2     | 1.0            | 2.1  | 66.1              | 62.7             |
| Netherlands        | 1107 | 91.1 | 2.0  | 0.7  | 6.0  | 0.2                    | 91.1 | 0.0     | 0.0            | 0.2  | 89.9              | 92.3             |
| New Zealand        | 1358 | 83.7 | 3.2  | 1.9  | 10.8 | 0.4                    | 83.7 | 0.2     | 0.1            | 0.1  | 79.1              | 88.0             |
| Philippines        | 2452 | 73.1 | 10.8 | 7.5  | 7.1  | 1.5                    | 73.1 | 0.0     | 0.2            | 1.3  | 70.6              | 76.0             |
| Romania            | 1275 | 78.4 | 9.6  | 1.9  | 8.3  | 1.8                    | 78.4 | 0.3     | 0.2            | 1.2  | 73.3              | 83.8             |
| Russian Federation | 1635 | 81.1 | 3.8  | 2.8  | 11.2 | 1.2                    | 81.1 | 0.2     | 0.2            | 0.7  | 79.3              | 83.1             |
| Singapore          | 1849 | 95.4 | 1.3  | 0.5  | 2.8  | 0.0                    | 95.4 | 0.0     | 0.0            | 0.0  | 93.7              | 97.1             |
| Slovak Republic    | 1318 | 83.3 | 2.4  | 1.3  | 12.3 | 0.7                    | 83.3 | 0.1     | 0.0            | 0.6  | 80.4              | 86.0             |
| Slovenia           | 1172 | 78.8 | 3.9  | 1.6  | 14.6 | 1.1                    | 78.8 | 0.1     | 0.0            | 1.0  | 77.2              | 80.6             |
| South Africa       | 3069 | 57.5 | 16.3 | 13.2 | 10.1 | 2.9                    | 57.5 | 0.4     | 0.9            | 1.6  | 57.3              | 57.7             |
| Thailand           | 2162 | 78.5 | 6.3  | 8.6  | 6.5  | 0.1                    | 78.5 | 0.0     | 0.0            | 0.1  | 76.7              | 80.6             |
| Tunisia            | 1901 | 71.2 | 7.3  | 7.0  | 9.1  | 5.5                    | 71.2 | 3.5     | 0.3            | 1.6  | 66.9              | 76.0             |
| Turkey             | 2936 | 83.6 | 3.0  | 4.3  | 8.4  | 0.7                    | 83.6 | 0.1     | 0.0            | 0.6  | 81.5              | 85.1             |
| United States      | 3356 | 86.3 | 2.9  | 4.0  | 6.4  | 0.4                    | 86.3 | 0.0     | 0.0            | 0.3  | 83.0              | 89.8             |
| International Avg. | .    | 81.5 | 5.4  | 3.4  | 8.6  | 1.2                    | 81.5 | 0.2     | 0.1            | 0.9  | 78.8              | 84.2             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Earth Science  
 Label: Diagram of soil layers ( S012046 - H04 )  
 Item Type = MC Key = A

| COUNTRY            | N    | A    | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 1509 | 50.5 | 36.7 | 4.3  | 8.2  | 0.3                    | 50.5 | 0.2     | 0.0            | 0.1  | 46.2              | 55.2             |
| Belgium (Flemish)  | 1986 | 63.3 | 27.3 | 5.6  | 3.4  | 0.3                    | 63.3 | 0.3     | 0.0            | 0.0  | 63.4              | 63.3             |
| Bulgaria           | 1223 | 49.9 | 40.3 | 3.1  | 2.9  | 3.8                    | 49.9 | 1.4     | 0.3            | 2.1  | 44.6              | 55.4             |
| Canada             | 3272 | 50.2 | 35.5 | 4.6  | 9.3  | 0.4                    | 50.2 | 0.0     | 0.0            | 0.4  | 45.6              | 54.9             |
| Chile              | 2214 | 46.7 | 36.3 | 5.4  | 8.4  | 3.2                    | 46.7 | 0.0     | 0.6            | 2.5  | 38.8              | 54.6             |
| Chinese Taipei     | 2166 | 28.5 | 51.6 | 8.0  | 11.8 | 0.1                    | 28.5 | 0.1     | 0.0            | 0.0  | 29.3              | 27.6             |
| Cyprus             | 1158 | 47.3 | 30.5 | 4.9  | 16.7 | 0.7                    | 47.3 | 0.0     | 0.0            | 0.7  | 45.3              | 49.3             |
| Czech Republic     | 1287 | 70.7 | 19.1 | 2.5  | 6.8  | 1.0                    | 70.7 | 0.1     | 0.0            | 0.9  | 64.6              | 76.8             |
| England            | 1090 | 48.5 | 31.3 | 4.8  | 15.1 | 0.3                    | 48.5 | 0.0     | 0.0            | 0.3  | 42.4              | 53.9             |
| Finland            | 1084 | 47.9 | 27.5 | 8.4  | 15.2 | 1.1                    | 47.9 | 0.0     | 0.0            | 1.1  | 42.7              | 53.6             |
| Hong Kong, SAR     | 1933 | 15.3 | 36.2 | 14.6 | 33.7 | 0.3                    | 15.3 | 0.2     | 0.0            | 0.1  | 13.0              | 17.5             |
| Hungary            | 1189 | 60.3 | 29.2 | 4.4  | 4.5  | 1.6                    | 60.3 | 0.5     | 0.2            | 0.9  | 54.8              | 65.0             |
| Indonesia          | 2184 | 40.7 | 39.6 | 7.9  | 10.3 | 1.6                    | 40.7 | 0.0     | 0.1            | 1.4  | 36.7              | 44.6             |
| Iran, Islamic Rep. | 1987 | 34.4 | 25.9 | 5.7  | 31.8 | 2.2                    | 34.4 | 0.0     | 0.1            | 2.1  | 33.4              | 35.1             |
| Israel             | 1575 | 27.6 | 42.6 | 10.2 | 17.4 | 2.2                    | 27.6 | 0.2     | 0.6            | 1.4  | 26.8              | 28.3             |
| Italy              | 1235 | 53.0 | 31.4 | 4.9  | 9.4  | 1.2                    | 53.0 | 0.0     | 0.0            | 1.2  | 49.0              | 57.2             |
| Japan              | 1793 | 50.3 | 29.8 | 9.2  | 10.5 | 0.2                    | 50.3 | 0.0     | 0.0            | 0.2  | 53.5              | 47.3             |
| Jordan             | 1889 | 31.7 | 36.4 | 8.2  | 22.8 | 1.0                    | 31.7 | 0.1     | 0.1            | 0.8  | 29.4              | 33.8             |
| Korea, Rep. of     | 2292 | 52.5 | 36.1 | 4.1  | 7.2  | 0.1                    | 52.5 | 0.0     | 0.0            | 0.1  | 52.5              | 52.6             |
| Latvia (LSS)       | 1081 | 59.4 | 32.1 | 2.6  | 4.5  | 1.4                    | 59.4 | 0.5     | 0.0            | 0.8  | 52.9              | 66.4             |
| Lithuania          | 896  | 67.3 | 25.0 | 3.9  | 2.4  | 1.3                    | 67.3 | 0.0     | 0.0            | 1.3  | 60.9              | 74.0             |
| Macedonia, Rep. of | 1512 | 76.0 | 16.0 | 1.7  | 3.3  | 3.0                    | 76.0 | 0.3     | 0.2            | 2.5  | 74.3              | 77.6             |
| Malaysia           | 2084 | 21.6 | 55.7 | 9.8  | 12.1 | 0.9                    | 21.6 | 0.0     | 0.0            | 0.9  | 19.6              | 24.0             |
| Moldova            | 1395 | 50.7 | 37.3 | 2.6  | 7.2  | 2.2                    | 50.7 | 0.4     | 0.5            | 1.3  | 44.8              | 57.5             |
| Morocco            | 2041 | 35.5 | 34.8 | 15.3 | 9.8  | 4.6                    | 35.5 | 1.9     | 1.0            | 1.7  | 32.2              | 37.8             |
| Netherlands        | 1107 | 52.7 | 31.8 | 6.8  | 8.7  | 0.0                    | 52.7 | 0.0     | 0.0            | 0.0  | 49.6              | 56.0             |
| New Zealand        | 1358 | 46.3 | 38.3 | 5.6  | 9.4  | 0.5                    | 46.3 | 0.1     | 0.1            | 0.2  | 42.7              | 49.6             |
| Philippines        | 2452 | 44.3 | 33.4 | 5.8  | 15.9 | 0.5                    | 44.3 | 0.2     | 0.2            | 0.2  | 40.2              | 49.0             |
| Romania            | 1275 | 63.4 | 21.7 | 5.0  | 7.7  | 2.3                    | 63.4 | 1.1     | 0.3            | 0.8  | 59.3              | 67.6             |
| Russian Federation | 1635 | 75.5 | 13.1 | 2.6  | 7.3  | 1.5                    | 75.5 | 0.2     | 0.2            | 1.1  | 73.1              | 78.2             |
| Singapore          | 1849 | 43.0 | 37.6 | 5.6  | 13.4 | 0.4                    | 43.0 | 0.0     | 0.0            | 0.4  | 39.7              | 46.4             |
| Slovak Republic    | 1318 | 56.9 | 33.8 | 2.5  | 5.4  | 1.4                    | 56.9 | 0.0     | 0.0            | 1.4  | 51.8              | 61.8             |
| Slovenia           | 1172 | 74.5 | 19.6 | 2.8  | 2.4  | 0.6                    | 74.5 | 0.2     | 0.0            | 0.4  | 70.7              | 78.7             |
| South Africa       | 3069 | 35.5 | 36.1 | 9.2  | 15.7 | 3.4                    | 35.5 | 0.3     | 0.9            | 2.2  | 30.6              | 41.1             |
| Thailand           | 2162 | 49.2 | 32.9 | 3.7  | 14.2 | 0.1                    | 49.2 | 0.0     | 0.0            | 0.1  | 49.7              | 48.6             |
| Tunisia            | 1900 | 41.5 | 31.2 | 4.0  | 17.8 | 5.4                    | 41.5 | 4.0     | 0.5            | 1.0  | 37.4              | 46.1             |
| Turkey             | 2936 | 28.7 | 46.7 | 7.4  | 16.1 | 1.0                    | 28.7 | 0.0     | 0.0            | 1.0  | 25.5              | 31.0             |
| United States      | 3356 | 40.1 | 42.9 | 5.4  | 11.5 | 0.2                    | 40.1 | 0.0     | 0.0            | 0.1  | 34.8              | 45.5             |
| International Avg. | .    | 48.2 | 33.2 | 5.9  | 11.3 | 1.4                    | 48.2 | 0.3     | 0.2            | 0.9  | 44.8              | 51.6             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Physics  
 Label: Energy stored in food ( S012047 - H05 )  
 Item Type = MC Key = B

| COUNTRY            | N    | A    | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 1509 | 2.0  | 32.7 | 54.5 | 10.3 | 0.5                    | 32.7 | 0.1     | 0.0            | 0.3  | 31.5              | 34.0             |
| Belgium (Flemish)  | 1986 | 4.2  | 9.4  | 62.1 | 23.8 | 0.5                    | 9.4  | 0.2     | 0.0            | 0.3  | 9.0               | 9.8              |
| Bulgaria           | 1223 | 1.9  | 22.0 | 60.8 | 11.9 | 3.5                    | 22.0 | 2.0     | 0.3            | 1.3  | 21.3              | 22.6             |
| Canada             | 3272 | 3.7  | 22.7 | 55.1 | 17.7 | 0.8                    | 22.7 | 0.2     | 0.0            | 0.6  | 21.5              | 23.9             |
| Chile              | 2214 | 7.4  | 11.1 | 47.7 | 31.2 | 2.6                    | 11.1 | 0.0     | 0.9            | 1.7  | 9.1               | 13.1             |
| Chinese Taipei     | 2166 | 5.8  | 25.3 | 57.1 | 11.6 | 0.3                    | 25.3 | 0.2     | 0.0            | 0.1  | 24.1              | 26.6             |
| Cyprus             | 1160 | 4.3  | 16.4 | 54.8 | 23.6 | 0.9                    | 16.4 | 0.2     | 0.0            | 0.8  | 16.1              | 16.7             |
| Czech Republic     | 1287 | 1.9  | 18.0 | 44.3 | 35.0 | 0.9                    | 18.0 | 0.0     | 0.0            | 0.9  | 18.1              | 17.9             |
| England            | 1090 | 3.8  | 41.8 | 46.8 | 7.3  | 0.3                    | 41.8 | 0.1     | 0.0            | 0.2  | 40.5              | 42.9             |
| Finland            | 1084 | 0.4  | 38.4 | 44.6 | 15.1 | 1.5                    | 38.4 | 0.0     | 0.0            | 1.5  | 38.7              | 38.0             |
| Hong Kong, SAR     | 1933 | 13.9 | 38.6 | 34.2 | 13.1 | 0.2                    | 38.6 | 0.1     | 0.0            | 0.1  | 37.7              | 39.3             |
| Hungary            | 1189 | 1.2  | 19.3 | 57.6 | 19.5 | 2.4                    | 19.3 | 1.3     | 0.2            | 0.9  | 17.8              | 20.5             |
| Indonesia          | 2184 | 4.0  | 31.6 | 50.2 | 13.6 | 0.5                    | 31.6 | 0.0     | 0.2            | 0.3  | 33.5              | 29.8             |
| Iran, Islamic Rep. | 1987 | 1.9  | 52.8 | 34.5 | 9.6  | 1.1                    | 52.8 | 0.0     | 0.1            | 1.0  | 49.8              | 54.8             |
| Israel             | 1575 | 6.6  | 10.6 | 72.1 | 8.4  | 2.3                    | 10.6 | 0.2     | 0.6            | 1.5  | 9.7               | 11.5             |
| Italy              | 1235 | 3.0  | 17.9 | 61.6 | 16.0 | 1.5                    | 17.9 | 0.0     | 0.0            | 1.5  | 17.0              | 18.8             |
| Japan              | 1793 | 11.0 | 44.6 | 12.2 | 31.6 | 0.6                    | 44.6 | 0.5     | 0.0            | 0.1  | 51.4              | 38.1             |
| Jordan             | 1889 | 4.7  | 34.1 | 47.8 | 12.1 | 1.3                    | 34.1 | 0.4     | 0.1            | 0.9  | 36.9              | 31.6             |
| Korea, Rep. of     | 2292 | 4.6  | 40.6 | 20.0 | 34.7 | 0.1                    | 40.6 | 0.0     | 0.0            | 0.1  | 39.0              | 42.2             |
| Latvia (LSS)       | 1081 | 2.3  | 15.2 | 62.8 | 17.6 | 2.2                    | 15.2 | 1.9     | 0.0            | 0.3  | 16.1              | 14.2             |
| Lithuania          | 896  | 3.9  | 10.6 | 50.8 | 32.7 | 2.0                    | 10.6 | 0.0     | 0.0            | 2.0  | 9.9               | 11.3             |
| Macedonia, Rep. of | 1512 | 4.8  | 18.0 | 51.3 | 23.0 | 3.0                    | 18.0 | 0.7     | 0.2            | 2.0  | 18.0              | 17.9             |
| Malaysia           | 2084 | 3.5  | 43.8 | 41.8 | 10.3 | 0.7                    | 43.8 | 0.0     | 0.0            | 0.6  | 44.3              | 43.1             |
| Moldova            | 1395 | 9.2  | 13.8 | 63.3 | 11.6 | 2.0                    | 13.8 | 0.5     | 0.6            | 1.0  | 13.2              | 14.6             |
| Morocco            | 2039 | 13.4 | 11.5 | 52.4 | 18.7 | 4.0                    | 11.5 | 2.0     | 1.1            | 0.9  | 11.2              | 11.8             |
| Netherlands        | 1107 | 0.8  | 18.7 | 61.1 | 18.9 | 0.5                    | 18.7 | 0.3     | 0.0            | 0.2  | 16.9              | 20.6             |
| New Zealand        | 1358 | 5.7  | 25.0 | 56.0 | 12.7 | 0.6                    | 25.0 | 0.0     | 0.1            | 0.4  | 24.0              | 26.0             |
| Philippines        | 2452 | 11.2 | 37.8 | 34.1 | 16.4 | 0.4                    | 37.8 | 0.0     | 0.2            | 0.3  | 38.7              | 36.7             |
| Romania            | 1274 | 5.3  | 10.7 | 67.5 | 14.6 | 1.9                    | 10.7 | 1.0     | 0.3            | 0.6  | 9.5               | 11.9             |
| Russian Federation | 1635 | 5.3  | 28.6 | 41.6 | 22.1 | 2.3                    | 28.6 | 1.1     | 0.2            | 1.1  | 29.3              | 27.9             |
| Singapore          | 1849 | 9.1  | 55.2 | 25.9 | 9.7  | 0.2                    | 55.2 | 0.0     | 0.0            | 0.2  | 51.0              | 59.4             |
| Slovak Republic    | 1318 | 1.6  | 16.9 | 47.2 | 33.5 | 0.8                    | 16.9 | 0.2     | 0.0            | 0.6  | 20.7              | 13.3             |
| Slovenia           | 1172 | 3.3  | 14.2 | 48.1 | 33.0 | 1.3                    | 14.2 | 0.6     | 0.0            | 0.8  | 16.4              | 11.9             |
| South Africa       | 3069 | 6.9  | 15.4 | 44.5 | 30.6 | 2.7                    | 15.4 | 0.6     | 1.2            | 0.8  | 14.4              | 16.5             |
| Thailand           | 2162 | 5.3  | 20.7 | 54.0 | 19.9 | 0.1                    | 20.7 | 0.0     | 0.0            | 0.1  | 23.6              | 17.2             |
| Tunisia            | 1901 | 4.3  | 5.8  | 69.1 | 13.6 | 7.2                    | 5.8  | 5.2     | 0.5            | 1.5  | 5.5               | 6.2              |
| Turkey             | 2936 | 3.8  | 14.2 | 51.8 | 29.5 | 0.7                    | 14.2 | 0.0     | 0.0            | 0.7  | 15.1              | 13.6             |
| United States      | 3356 | 3.8  | 26.0 | 57.6 | 12.2 | 0.4                    | 26.0 | 0.0     | 0.0            | 0.3  | 25.5              | 26.5             |
| International Avg. | .    | 5.0  | 24.5 | 50.0 | 19.1 | 1.4                    | 24.5 | 0.5     | 0.2            | 0.7  | 24.4              | 24.5             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent



Science: Chemistry  
 Label: Burning wood absorbs/releases energy ( S012048 - H06 )  
 Item Type = MC Key = A

| COUNTRY            | N    | A    | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 1509 | 58.3 | 12.2 | 8.8  | 20.6 | 0.2                    | 58.3 | 0.0     | 0.0            | 0.2  | 51.9              | 65.1             |
| Belgium (Flemish)  | 1986 | 61.2 | 14.0 | 10.9 | 13.1 | 0.8                    | 61.2 | 0.3     | 0.0            | 0.5  | 57.5              | 64.8             |
| Bulgaria           | 1223 | 62.9 | 10.2 | 12.8 | 11.3 | 2.9                    | 62.9 | 0.8     | 0.3            | 1.8  | 57.4              | 68.7             |
| Canada             | 3272 | 65.6 | 10.9 | 6.0  | 17.1 | 0.3                    | 65.6 | 0.0     | 0.0            | 0.3  | 60.7              | 70.6             |
| Chile              | 2213 | 33.5 | 15.4 | 13.2 | 34.8 | 3.1                    | 33.5 | 0.0     | 1.0            | 2.1  | 23.5              | 43.3             |
| Chinese Taipei     | 2167 | 82.0 | 12.6 | 1.3  | 4.0  | 0.1                    | 82.0 | 0.0     | 0.0            | 0.1  | 79.1              | 85.0             |
| Cyprus             | 1157 | 54.2 | 13.8 | 13.2 | 17.8 | 1.0                    | 54.2 | 0.0     | 0.0            | 1.0  | 51.3              | 57.0             |
| Czech Republic     | 1287 | 46.5 | 30.9 | 6.4  | 15.3 | 0.9                    | 46.5 | 0.0     | 0.1            | 0.8  | 37.3              | 55.9             |
| England            | 1090 | 68.4 | 12.4 | 5.9  | 12.9 | 0.5                    | 68.4 | 0.1     | 0.0            | 0.4  | 61.4              | 74.7             |
| Finland            | 1084 | 74.6 | 9.5  | 6.4  | 9.1  | 0.4                    | 74.6 | 0.0     | 0.0            | 0.4  | 70.5              | 79.0             |
| Hong Kong, SAR     | 1933 | 69.9 | 4.4  | 7.5  | 17.7 | 0.5                    | 69.9 | 0.0     | 0.0            | 0.5  | 66.0              | 73.6             |
| Hungary            | 1189 | 76.7 | 9.8  | 3.0  | 8.8  | 1.6                    | 76.7 | 0.3     | 0.3            | 1.0  | 72.5              | 80.6             |
| Indonesia          | 2183 | 35.5 | 18.7 | 5.3  | 39.4 | 1.1                    | 35.5 | 0.1     | 0.2            | 0.8  | 30.0              | 40.8             |
| Iran, Islamic Rep. | 1987 | 66.3 | 3.8  | 8.0  | 19.8 | 2.1                    | 66.3 | 0.0     | 0.1            | 1.9  | 62.1              | 69.1             |
| Israel             | 1575 | 58.3 | 11.6 | 10.4 | 16.6 | 3.1                    | 58.3 | 0.2     | 0.6            | 2.3  | 55.1              | 61.5             |
| Italy              | 1235 | 54.3 | 14.8 | 10.8 | 18.7 | 1.4                    | 54.3 | 0.0     | 0.0            | 1.4  | 46.5              | 62.1             |
| Japan              | 1793 | 59.1 | 11.1 | 16.3 | 13.3 | 0.2                    | 59.1 | 0.0     | 0.1            | 0.1  | 56.3              | 61.8             |
| Jordan             | 1888 | 51.1 | 13.3 | 6.2  | 28.1 | 1.3                    | 51.1 | 0.1     | 0.1            | 1.1  | 45.2              | 56.4             |
| Korea, Rep. of     | 2292 | 65.3 | 19.6 | 5.6  | 9.3  | 0.1                    | 65.3 | 0.0     | 0.0            | 0.1  | 61.8              | 68.8             |
| Latvia (LSS)       | 1081 | 39.8 | 17.7 | 13.3 | 27.0 | 2.3                    | 39.8 | 0.0     | 0.0            | 2.3  | 35.4              | 44.7             |
| Lithuania          | 896  | 60.8 | 5.9  | 6.9  | 25.2 | 1.2                    | 60.8 | 0.0     | 0.0            | 1.2  | 55.7              | 66.1             |
| Macedonia, Rep. of | 1512 | 73.5 | 3.3  | 3.8  | 16.1 | 3.2                    | 73.5 | 0.0     | 0.3            | 2.9  | 70.1              | 76.8             |
| Malaysia           | 2084 | 65.1 | 11.1 | 4.9  | 18.0 | 0.8                    | 65.1 | 0.0     | 0.0            | 0.8  | 64.2              | 66.1             |
| Moldova            | 1396 | 52.8 | 8.3  | 11.2 | 24.9 | 2.7                    | 52.8 | 0.2     | 0.6            | 1.9  | 51.0              | 54.9             |
| Morocco            | 2040 | 16.6 | 20.2 | 11.6 | 46.8 | 4.8                    | 16.6 | 1.3     | 1.1            | 2.4  | 15.4              | 17.4             |
| Netherlands        | 1107 | 63.6 | 13.8 | 9.1  | 12.3 | 1.1                    | 63.6 | 0.0     | 0.0            | 1.1  | 56.5              | 70.8             |
| New Zealand        | 1357 | 57.5 | 11.6 | 7.8  | 22.4 | 0.6                    | 57.5 | 0.1     | 0.1            | 0.4  | 51.2              | 63.5             |
| Philippines        | 2452 | 29.9 | 16.0 | 7.2  | 45.8 | 1.1                    | 29.9 | 0.0     | 0.2            | 0.9  | 27.1              | 33.0             |
| Romania            | 1275 | 46.1 | 10.9 | 12.8 | 28.3 | 2.0                    | 46.1 | 0.3     | 0.3            | 1.4  | 39.8              | 52.6             |
| Russian Federation | 1635 | 65.3 | 9.7  | 6.3  | 16.8 | 1.9                    | 65.3 | 0.0     | 0.2            | 1.6  | 62.9              | 68.0             |
| Singapore          | 1849 | 68.2 | 14.0 | 6.2  | 11.2 | 0.4                    | 68.2 | 0.0     | 0.0            | 0.4  | 63.2              | 73.1             |
| Slovak Republic    | 1318 | 53.9 | 23.2 | 9.5  | 12.3 | 1.1                    | 53.9 | 0.0     | 0.0            | 1.1  | 49.2              | 58.5             |
| Slovenia           | 1172 | 56.8 | 29.3 | 4.4  | 8.1  | 1.4                    | 56.8 | 0.1     | 0.0            | 1.4  | 54.1              | 59.8             |
| South Africa       | 3069 | 19.6 | 24.2 | 10.4 | 42.8 | 3.0                    | 19.6 | 0.3     | 1.3            | 1.4  | 18.5              | 20.9             |
| Thailand           | 2162 | 43.3 | 11.6 | 4.7  | 40.2 | 0.2                    | 43.3 | 0.0     | 0.0            | 0.2  | 42.0              | 44.8             |
| Tunisia            | 1901 | 25.5 | 10.6 | 9.3  | 50.5 | 4.1                    | 25.5 | 1.5     | 0.6            | 2.0  | 19.7              | 32.0             |
| Turkey             | 2936 | 57.7 | 10.2 | 7.9  | 23.4 | 0.8                    | 57.7 | 0.0     | 0.0            | 0.7  | 57.7              | 57.7             |
| United States      | 3356 | 63.9 | 12.2 | 6.5  | 17.1 | 0.2                    | 63.9 | 0.0     | 0.0            | 0.2  | 58.8              | 69.3             |
| International Avg. | .    | 55.4 | 13.5 | 8.2  | 21.5 | 1.4                    | 55.4 | 0.1     | 0.2            | 1.1  | 51.0              | 59.7             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Chemistry  
 Label: Gas needed for rust to form ( S022183 - I10 )  
 Item Type = MC Key = B

| COUNTRY            | N    | A    | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 496  | 30.3 | 37.0 | 26.6 | 5.3  | 0.8                    | 37.0 | 0.0     | 0.5            | 0.3  | 31.5              | 42.7             |
| Belgium (Flemish)  | 647  | 61.9 | 20.1 | 8.7  | 8.3  | 1.1                    | 20.1 | 0.1     | 0.4            | 0.6  | 17.0              | 23.1             |
| Bulgaria           | 412  | 13.7 | 51.0 | 18.4 | 11.8 | 5.2                    | 51.0 | 0.2     | 0.7            | 4.3  | 46.1              | 55.5             |
| Canada             | 1092 | 32.5 | 34.9 | 25.9 | 6.4  | 0.2                    | 34.9 | 0.0     | 0.1            | 0.2  | 33.2              | 36.7             |
| Chile              | 734  | 24.0 | 16.5 | 25.8 | 29.9 | 3.8                    | 16.5 | 0.0     | 1.2            | 2.6  | 12.1              | 21.4             |
| Chinese Taipei     | 726  | 3.9  | 89.6 | 3.8  | 2.5  | 0.1                    | 89.6 | 0.0     | 0.0            | 0.1  | 89.3              | 89.9             |
| Cyprus             | 391  | 33.0 | 13.3 | 33.9 | 18.7 | 1.1                    | 13.3 | 0.3     | 0.0            | 0.8  | 8.0               | 18.9             |
| Czech Republic     | 420  | 35.6 | 36.8 | 13.5 | 11.3 | 2.7                    | 36.8 | 0.4     | 0.0            | 2.3  | 28.1              | 46.8             |
| England            | 365  | 23.3 | 53.6 | 17.9 | 3.0  | 2.1                    | 53.6 | 0.0     | 1.8            | 0.2  | 47.7              | 60.6             |
| Finland            | 362  | 31.6 | 27.6 | 31.3 | 9.1  | 0.4                    | 27.6 | 0.0     | 0.0            | 0.4  | 23.3              | 31.6             |
| Hong Kong, SAR     | 647  | 10.7 | 62.1 | 15.2 | 11.3 | 0.7                    | 62.1 | 0.0     | 0.5            | 0.2  | 58.1              | 65.6             |
| Hungary            | 405  | 12.1 | 55.1 | 19.5 | 10.0 | 3.3                    | 55.1 | 0.7     | 0.0            | 2.5  | 45.3              | 64.4             |
| Indonesia          | 738  | 21.3 | 10.1 | 25.4 | 42.1 | 1.1                    | 10.1 | 0.0     | 0.0            | 1.1  | 8.7               | 11.8             |
| Iran, Islamic Rep. | 657  | 13.3 | 59.6 | 14.3 | 12.0 | 0.8                    | 59.6 | 0.0     | 0.1            | 0.7  | 63.8              | 56.6             |
| Israel             | 532  | 22.4 | 36.8 | 20.3 | 18.2 | 2.4                    | 36.8 | 0.0     | 0.9            | 1.5  | 28.2              | 45.4             |
| Italy              | 428  | 24.8 | 41.1 | 19.9 | 12.1 | 2.1                    | 41.1 | 0.0     | 0.3            | 1.8  | 40.7              | 41.6             |
| Japan              | 584  | 20.2 | 55.3 | 12.6 | 11.5 | 0.4                    | 55.3 | 0.0     | 0.2            | 0.2  | 51.5              | 59.3             |
| Jordan             | 620  | 9.0  | 61.9 | 13.0 | 14.6 | 1.5                    | 61.9 | 0.5     | 0.3            | 0.7  | 66.0              | 58.1             |
| Korea, Rep. of     | 761  | 22.4 | 42.5 | 23.4 | 11.4 | 0.2                    | 42.5 | 0.0     | 0.0            | 0.2  | 37.5              | 47.4             |
| Latvia (LSS)       | 363  | 44.8 | 15.3 | 14.3 | 20.9 | 4.7                    | 15.3 | 1.1     | 0.2            | 3.4  | 13.3              | 17.2             |
| Lithuania          | 297  | 43.9 | 28.5 | 16.8 | 8.9  | 1.9                    | 28.5 | 0.0     | 0.0            | 1.9  | 22.7              | 34.2             |
| Macedonia, Rep. of | 497  | 20.9 | 40.1 | 22.0 | 14.2 | 2.8                    | 40.1 | 0.6     | 0.2            | 2.0  | 41.3              | 39.1             |
| Malaysia           | 696  | 21.2 | 42.0 | 14.0 | 22.2 | 0.5                    | 42.0 | 0.0     | 0.0            | 0.5  | 35.9              | 48.7             |
| Moldova            | 459  | 15.1 | 40.3 | 28.2 | 13.0 | 3.4                    | 40.3 | 0.4     | 0.9            | 2.2  | 38.4              | 42.5             |
| Morocco            | 644  | 27.1 | 21.5 | 26.1 | 20.5 | 4.7                    | 21.5 | 0.0     | 1.7            | 3.0  | 21.9              | 21.3             |
| Netherlands        | 378  | 63.7 | 11.0 | 10.5 | 13.9 | 0.8                    | 11.0 | 0.0     | 0.0            | 0.8  | 8.7               | 13.8             |
| New Zealand        | 452  | 25.2 | 28.9 | 32.9 | 11.9 | 1.1                    | 28.9 | 0.0     | 0.5            | 0.6  | 22.7              | 34.6             |
| Philippines        | 820  | 17.4 | 21.6 | 20.5 | 39.6 | 0.8                    | 21.6 | 0.0     | 0.2            | 0.6  | 20.3              | 23.1             |
| Romania            | 426  | 14.1 | 43.8 | 25.8 | 13.0 | 3.3                    | 43.8 | 1.1     | 0.4            | 1.7  | 45.2              | 42.3             |
| Russian Federation | 547  | 19.5 | 46.8 | 19.5 | 11.4 | 2.8                    | 46.8 | 0.3     | 1.0            | 1.6  | 41.2              | 53.5             |
| Singapore          | 616  | 14.8 | 58.3 | 13.4 | 13.3 | 0.3                    | 58.3 | 0.0     | 0.0            | 0.3  | 53.7              | 62.7             |
| Slovak Republic    | 437  | 36.4 | 32.5 | 17.0 | 11.3 | 2.7                    | 32.5 | 0.3     | 0.0            | 2.4  | 27.6              | 38.0             |
| Slovenia           | 376  | 29.2 | 37.9 | 18.2 | 14.3 | 0.3                    | 37.9 | 0.0     | 0.0            | 0.3  | 31.7              | 45.1             |
| South Africa       | 805  | 19.9 | 37.6 | 19.9 | 20.5 | 2.0                    | 37.6 | 0.5     | 0.8            | 0.7  | 39.0              | 36.0             |
| Thailand           | 717  | 14.4 | 17.5 | 16.4 | 51.3 | 0.4                    | 17.5 | 0.0     | 0.1            | 0.3  | 16.2              | 19.1             |
| Tunisia            | 625  | 23.5 | 13.4 | 38.8 | 21.0 | 3.3                    | 13.4 | 0.7     | 0.3            | 2.3  | 12.3              | 14.4             |
| Turkey             | 975  | 28.1 | 24.3 | 19.4 | 26.6 | 1.5                    | 24.3 | 0.0     | 0.1            | 1.4  | 21.5              | 26.3             |
| United States      | 1112 | 28.0 | 30.4 | 33.7 | 7.2  | 0.6                    | 30.4 | 0.0     | 0.1            | 0.5  | 23.9              | 37.0             |
| International Avg. | .    | 25.1 | 36.8 | 20.4 | 15.9 | 1.8                    | 36.8 | 0.2     | 0.4            | 1.2  | 33.5              | 40.2             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Scientific Inquiry and the Nature of Science  
 Label: Observation of bubbling electrode ( S022276 - I11 )  
 Item Type = MC Key = A

| COUNTRY            | N    | A    | B    | C    | D    | E    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 496  | 72.3 | 4.0  | 12.6 | 6.7  | 3.8  | 0.7                    | 72.3 | 0.0     | 0.5            | 0.2  | 77.8              | 66.4             |
| Belgium (Flemish)  | 647  | 64.2 | 1.0  | 27.1 | 4.2  | 2.0  | 1.4                    | 64.2 | 0.0     | 0.4            | 1.0  | 64.9              | 63.5             |
| Bulgaria           | 412  | 52.5 | 9.5  | 25.6 | 3.4  | 5.4  | 3.7                    | 52.5 | 0.4     | 0.8            | 2.5  | 52.7              | 51.8             |
| Canada             | 1092 | 73.3 | 2.5  | 14.4 | 5.7  | 3.8  | 0.2                    | 73.3 | 0.1     | 0.1            | 0.0  | 74.1              | 72.6             |
| Chile              | 734  | 49.4 | 5.5  | 18.7 | 10.3 | 13.7 | 2.4                    | 49.4 | 0.0     | 1.2            | 1.2  | 49.3              | 49.4             |
| Chinese Taipei     | 726  | 64.2 | 2.6  | 23.4 | 4.3  | 5.3  | 0.3                    | 64.2 | 0.0     | 0.0            | 0.3  | 66.2              | 62.1             |
| Cyprus             | 391  | 46.7 | 4.5  | 37.3 | 4.8  | 5.5  | 1.1                    | 46.7 | 0.0     | 0.0            | 1.1  | 49.6              | 43.7             |
| Czech Republic     | 420  | 63.7 | 3.0  | 24.2 | 5.9  | 1.8  | 1.5                    | 63.7 | 0.0     | 0.0            | 1.5  | 64.2              | 63.1             |
| England            | 365  | 64.3 | 4.7  | 18.0 | 6.3  | 4.2  | 2.6                    | 64.3 | 0.3     | 1.8            | 0.4  | 69.1              | 58.7             |
| Finland            | 362  | 75.0 | 2.3  | 16.8 | 3.1  | 1.7  | 1.1                    | 75.0 | 0.0     | 0.0            | 1.1  | 74.1              | 75.9             |
| Hong Kong, SAR     | 647  | 56.2 | 3.0  | 32.9 | 5.0  | 1.8  | 1.0                    | 56.2 | 0.0     | 0.5            | 0.5  | 58.6              | 54.1             |
| Hungary            | 405  | 80.6 | 0.3  | 11.9 | 3.6  | 2.7  | 1.0                    | 80.6 | 0.2     | 0.0            | 0.8  | 76.9              | 83.8             |
| Indonesia          | 738  | 52.8 | 1.5  | 24.8 | 15.8 | 4.8  | 0.3                    | 52.8 | 0.0     | 0.0            | 0.3  | 55.0              | 50.3             |
| Iran, Islamic Rep. | 657  | 30.0 | 11.8 | 45.3 | 8.1  | 3.7  | 1.1                    | 30.0 | 0.0     | 0.1            | 0.9  | 30.2              | 29.9             |
| Israel             | 532  | 35.7 | 6.8  | 38.4 | 10.0 | 6.8  | 2.3                    | 35.7 | 0.3     | 0.9            | 1.1  | 34.9              | 36.8             |
| Italy              | 428  | 56.7 | 4.4  | 20.4 | 7.8  | 7.9  | 2.8                    | 56.7 | 0.0     | 0.5            | 2.3  | 57.5              | 55.9             |
| Japan              | 584  | 59.6 | 1.0  | 30.3 | 6.6  | 2.3  | 0.2                    | 59.6 | 0.0     | 0.2            | 0.0  | 61.9              | 57.3             |
| Jordan             | 620  | 24.7 | 3.1  | 54.3 | 12.8 | 4.0  | 1.1                    | 24.7 | 0.3     | 0.4            | 0.4  | 30.1              | 19.8             |
| Korea, Rep. of     | 761  | 51.5 | 1.5  | 43.0 | 2.4  | 1.5  | 0.1                    | 51.5 | 0.0     | 0.0            | 0.1  | 53.6              | 49.4             |
| Latvia (LSS)       | 363  | 61.3 | 1.8  | 28.5 | 4.1  | 2.2  | 2.1                    | 61.3 | 1.0     | 0.2            | 0.9  | 62.8              | 59.7             |
| Lithuania          | 297  | 40.1 | 10.8 | 34.2 | 4.2  | 8.0  | 2.7                    | 40.1 | 0.0     | 0.0            | 2.7  | 46.3              | 34.1             |
| Macedonia, Rep. of | .    | .    | .    | .    | .    | .    | .                      | .    | .       | .              | .    | .                 | .                |
| Malaysia           | 696  | 58.8 | 12.1 | 22.2 | 3.5  | 3.1  | 0.2                    | 58.8 | 0.0     | 0.0            | 0.2  | 60.6              | 56.9             |
| Moldova            | 459  | 51.3 | 7.0  | 31.6 | 3.5  | 2.9  | 3.7                    | 51.3 | 0.3     | 1.1            | 2.4  | 50.5              | 52.2             |
| Morocco            | 644  | 40.0 | 6.9  | 29.1 | 10.6 | 8.9  | 4.5                    | 40.0 | 0.0     | 1.7            | 2.7  | 43.3              | 37.3             |
| Netherlands        | 378  | 64.0 | 3.8  | 28.0 | 3.4  | 0.0  | 0.8                    | 64.0 | 0.0     | 0.0            | 0.8  | 66.0              | 61.9             |
| New Zealand        | 452  | 56.4 | 4.3  | 22.5 | 8.2  | 7.7  | 0.9                    | 56.4 | 0.2     | 0.5            | 0.2  | 54.8              | 57.9             |
| Philippines        | 820  | 60.2 | 7.2  | 15.4 | 6.3  | 10.2 | 0.8                    | 60.2 | 0.0     | 0.2            | 0.6  | 65.5              | 53.9             |
| Romania            | 426  | 34.9 | 3.5  | 38.1 | 11.5 | 9.2  | 2.8                    | 34.9 | 0.6     | 0.4            | 1.8  | 34.2              | 35.7             |
| Russian Federation | 547  | 62.2 | 2.3  | 27.6 | 2.5  | 2.9  | 2.5                    | 62.2 | 0.5     | 1.3            | 0.6  | 64.6              | 59.3             |
| Singapore          | 616  | 82.2 | 2.4  | 10.8 | 2.4  | 2.0  | 0.1                    | 82.2 | 0.1     | 0.0            | 0.0  | 84.4              | 80.2             |
| Slovak Republic    | 437  | 39.9 | 9.6  | 32.7 | 10.8 | 4.9  | 2.2                    | 39.9 | 0.0     | 0.0            | 2.2  | 36.7              | 43.4             |
| Slovenia           | 376  | 79.1 | 1.2  | 6.7  | 8.8  | 4.0  | 0.3                    | 79.1 | 0.0     | 0.0            | 0.3  | 82.8              | 74.7             |
| South Africa       | 971  | 28.4 | 15.0 | 22.4 | 14.5 | 17.4 | 2.3                    | 28.4 | 0.2     | 0.8            | 1.4  | 26.1              | 31.1             |
| Thailand           | 717  | 67.7 | 4.9  | 17.7 | 3.4  | 5.8  | 0.4                    | 67.7 | 0.0     | 0.1            | 0.3  | 71.1              | 63.8             |
| Tunisia            | 625  | 59.5 | 4.0  | 21.3 | 6.9  | 3.1  | 5.2                    | 59.5 | 3.1     | 0.3            | 1.8  | 58.5              | 60.5             |
| Turkey             | 975  | 43.1 | 5.8  | 39.2 | 6.3  | 4.3  | 1.4                    | 43.1 | 0.0     | 0.2            | 1.2  | 49.3              | 38.7             |
| United States      | 1112 | 62.6 | 6.1  | 14.4 | 8.4  | 7.8  | 0.7                    | 62.6 | 0.0     | 0.1            | 0.6  | 66.4              | 58.8             |
| International Avg. | .    | 55.8 | 4.9  | 26.0 | 6.7  | 5.1  | 1.6                    | 55.8 | 0.2     | 0.4            | 1.0  | 57.4              | 54.2             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Life Science  
 Label: Oxygen/carbon dioxide cycle ( S022115 - I12 )  
 Item Type = MC Key = D

| COUNTRY            | N    | A    | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 496  | 3.5  | 22.8 | 9.4  | 63.5 | 0.7                    | 63.5 | 0.0     | 0.5            | 0.2  | 61.1              | 66.1             |
| Belgium (Flemish)  | 647  | 3.3  | 16.2 | 7.3  | 72.9 | 0.4                    | 72.9 | 0.0     | 0.4            | 0.0  | 77.0              | 68.8             |
| Bulgaria           | 412  | 5.7  | 31.9 | 5.8  | 48.5 | 8.0                    | 48.5 | 0.2     | 0.8            | 7.0  | 51.3              | 45.3             |
| Canada             | 1092 | 3.5  | 18.8 | 6.5  | 70.6 | 0.5                    | 70.6 | 0.1     | 0.1            | 0.3  | 71.2              | 70.1             |
| Chile              | 734  | 4.2  | 33.8 | 10.6 | 47.4 | 4.1                    | 47.4 | 0.0     | 1.2            | 2.9  | 47.0              | 47.8             |
| Chinese Taipei     | 726  | 3.8  | 18.7 | 4.9  | 72.6 | 0.0                    | 72.6 | 0.0     | 0.0            | 0.0  | 70.5              | 74.6             |
| Cyprus             | 390  | 5.4  | 32.2 | 6.5  | 54.9 | 0.9                    | 54.9 | 0.6     | 0.0            | 0.4  | 56.7              | 53.1             |
| Czech Republic     | 420  | 2.7  | 20.7 | 3.3  | 71.2 | 2.0                    | 71.2 | 0.3     | 0.0            | 1.8  | 67.4              | 75.7             |
| England            | 365  | 3.2  | 28.4 | 6.8  | 58.2 | 3.3                    | 58.2 | 0.5     | 1.8            | 1.0  | 55.1              | 61.4             |
| Finland            | 362  | 2.1  | 25.3 | 5.6  | 66.7 | 0.3                    | 66.7 | 0.0     | 0.0            | 0.3  | 65.2              | 68.1             |
| Hong Kong, SAR     | 647  | 4.2  | 17.2 | 4.6  | 73.0 | 1.0                    | 73.0 | 0.0     | 0.5            | 0.5  | 69.6              | 76.0             |
| Hungary            | 405  | 1.2  | 27.1 | 6.3  | 62.6 | 2.8                    | 62.6 | 1.0     | 0.4            | 1.4  | 57.9              | 66.8             |
| Indonesia          | .    | .    | .    | .    | .    | .                      | .    | .       | .              | .    | .                 | .                |
| Iran, Islamic Rep. | 657  | 4.0  | 38.8 | 9.0  | 46.5 | 1.7                    | 46.5 | 0.0     | 0.1            | 1.5  | 45.6              | 47.1             |
| Israel             | 532  | 8.6  | 31.0 | 9.6  | 48.4 | 2.5                    | 48.4 | 0.0     | 1.1            | 1.3  | 47.5              | 49.6             |
| Italy              | 428  | 6.8  | 35.6 | 7.2  | 46.2 | 4.2                    | 46.2 | 0.0     | 0.5            | 3.7  | 44.3              | 48.1             |
| Japan              | 584  | 2.0  | 11.3 | 1.8  | 84.6 | 0.3                    | 84.6 | 0.0     | 0.2            | 0.2  | 80.9              | 88.4             |
| Jordan             | 625  | 5.3  | 29.1 | 7.9  | 54.7 | 2.9                    | 54.7 | 0.9     | 0.4            | 1.6  | 60.1              | 49.9             |
| Korea, Rep. of     | 766  | 2.6  | 21.6 | 1.6  | 74.0 | 0.1                    | 74.0 | 0.0     | 0.0            | 0.1  | 73.3              | 74.7             |
| Latvia (LSS)       | 363  | 9.4  | 26.8 | 4.9  | 54.9 | 4.0                    | 54.9 | 1.7     | 0.2            | 2.1  | 57.7              | 52.1             |
| Lithuania          | 297  | 3.5  | 24.4 | 6.0  | 63.2 | 2.8                    | 63.2 | 0.0     | 0.2            | 2.6  | 62.2              | 64.2             |
| Macedonia, Rep. of | 497  | 4.5  | 39.1 | 4.7  | 47.2 | 4.5                    | 47.2 | 1.0     | 0.4            | 3.1  | 48.8              | 45.8             |
| Malaysia           | 696  | 1.9  | 18.4 | 2.2  | 77.5 | 0.0                    | 77.5 | 0.0     | 0.0            | 0.0  | 78.5              | 76.4             |
| Moldova            | 459  | 5.6  | 34.4 | 12.9 | 42.7 | 4.5                    | 42.7 | 0.3     | 1.4            | 2.9  | 45.6              | 39.2             |
| Morocco            | 642  | 7.3  | 31.2 | 13.8 | 43.0 | 4.6                    | 43.0 | 0.0     | 1.7            | 2.9  | 41.2              | 44.3             |
| Netherlands        | 378  | 1.6  | 24.6 | 5.3  | 67.7 | 0.8                    | 67.7 | 0.0     | 0.0            | 0.8  | 65.8              | 69.8             |
| New Zealand        | 451  | 3.3  | 27.1 | 9.9  | 57.8 | 1.9                    | 57.8 | 0.5     | 0.5            | 0.9  | 56.6              | 58.9             |
| Philippines        | 820  | 13.6 | 33.2 | 10.7 | 41.4 | 1.1                    | 41.4 | 0.3     | 0.3            | 0.5  | 43.6              | 38.8             |
| Romania            | 426  | 7.1  | 30.1 | 9.0  | 49.9 | 3.9                    | 49.9 | 1.2     | 0.4            | 2.3  | 53.7              | 45.8             |
| Russian Federation | 547  | 2.6  | 26.0 | 4.9  | 62.7 | 3.9                    | 62.7 | 0.7     | 1.3            | 1.9  | 60.6              | 65.1             |
| Singapore          | 616  | 2.1  | 10.4 | 1.4  | 86.1 | 0.0                    | 86.1 | 0.0     | 0.0            | 0.0  | 85.5              | 86.6             |
| Slovak Republic    | 437  | 3.7  | 24.4 | 3.9  | 66.2 | 1.8                    | 66.2 | 0.3     | 0.0            | 1.5  | 63.4              | 69.3             |
| Slovenia           | 376  | 2.0  | 22.9 | 7.4  | 66.1 | 1.7                    | 66.1 | 0.4     | 0.0            | 1.3  | 68.8              | 62.8             |
| South Africa       | 971  | 13.7 | 37.5 | 13.6 | 28.1 | 7.0                    | 28.1 | 3.4     | 0.8            | 2.8  | 26.0              | 30.4             |
| Thailand           | 717  | 6.4  | 22.3 | 5.3  | 65.6 | 0.5                    | 65.6 | 0.0     | 0.1            | 0.3  | 67.3              | 63.6             |
| Tunisia            | 629  | 1.9  | 33.5 | 7.5  | 53.5 | 3.6                    | 53.5 | 1.9     | 0.3            | 1.4  | 54.2              | 52.9             |
| Turkey             | 975  | 3.9  | 33.7 | 9.3  | 51.1 | 2.0                    | 51.1 | 0.0     | 0.2            | 1.7  | 54.8              | 48.5             |
| United States      | 1112 | 5.5  | 25.3 | 6.7  | 61.9 | 0.6                    | 61.9 | 0.0     | 0.1            | 0.5  | 63.7              | 60.1             |
| International Avg. | .    | 4.6  | 26.6 | 6.9  | 59.5 | 2.3                    | 59.5 | 0.4     | 0.4            | 1.5  | 59.4              | 59.6             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Physics  
 Label: Current/voltage table ( S022022 - I13 )  
 Item Type = SA Key = X

| COUNTRY            | N    | 10   | 70   | 79   | 99   | V1   | NOT REACHED |      | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------|-------------|------|-------------------|------------------|
|                    |      |      |      |      |      |      | ED          | OMIT |                   |                  |
| Australia          | 496  | 46.0 | 43.3 | 4.1  | 6.6  | 46.0 | 0.5         | 6.1  | 39.6              | 52.7             |
| Belgium (Flemish)  | 647  | 75.9 | 15.8 | 3.2  | 5.1  | 75.9 | 0.4         | 4.8  | 73.5              | 78.3             |
| Bulgaria           | 412  | 46.9 | 30.9 | 5.0  | 17.2 | 46.9 | 1.0         | 16.2 | 43.8              | 49.5             |
| Canada             | 1092 | 49.0 | 44.0 | 3.6  | 3.5  | 49.0 | 0.1         | 3.4  | 47.4              | 50.5             |
| Chile              | 734  | 23.0 | 43.9 | 8.8  | 24.3 | 23.0 | 1.6         | 22.7 | 18.7              | 27.7             |
| Chinese Taipei     | 726  | 61.0 | 33.2 | 3.8  | 2.0  | 61.0 | 0.0         | 2.0  | 58.8              | 63.3             |
| Cyprus             | 388  | 49.6 | 35.0 | 4.5  | 10.9 | 49.6 | 0.0         | 10.9 | 45.4              | 54.0             |
| Czech Republic     | 420  | 47.4 | 36.2 | 7.2  | 9.2  | 47.4 | 0.0         | 9.2  | 41.6              | 54.2             |
| England            | 365  | 41.4 | 49.0 | 3.5  | 6.1  | 41.4 | 1.8         | 4.3  | 34.5              | 48.6             |
| Finland            | 362  | 48.6 | 41.3 | 5.9  | 4.2  | 48.6 | 0.0         | 4.2  | 43.9              | 52.9             |
| Hong Kong, SAR     | 647  | 64.1 | 29.8 | 3.1  | 3.0  | 64.1 | 0.5         | 2.4  | 58.6              | 69.1             |
| Hungary            | 405  | 66.1 | 24.0 | 3.1  | 6.8  | 66.1 | 0.4         | 6.4  | 63.4              | 68.4             |
| Indonesia          | 738  | 42.0 | 40.7 | 6.7  | 10.6 | 42.0 | 0.0         | 10.6 | 41.3              | 42.8             |
| Iran, Islamic Rep. | 657  | 44.0 | 36.4 | 8.6  | 11.0 | 44.0 | 0.2         | 10.7 | 40.7              | 46.3             |
| Israel             | 532  | 40.8 | 34.3 | 6.5  | 18.4 | 40.8 | 1.3         | 17.1 | 36.3              | 45.7             |
| Italy              | 428  | 42.2 | 33.8 | 4.8  | 19.2 | 42.2 | 0.5         | 18.7 | 35.1              | 49.9             |
| Japan              | 584  | 63.6 | 32.2 | 2.6  | 1.6  | 63.6 | 0.2         | 1.4  | 59.0              | 68.3             |
| Jordan             | 612  | 33.8 | 41.2 | 15.0 | 10.0 | 33.8 | 0.4         | 9.5  | 36.4              | 31.4             |
| Korea, Rep. of     | 762  | 61.9 | 35.1 | 2.0  | 1.1  | 61.9 | 0.0         | 1.1  | 58.3              | 65.4             |
| Latvia (LSS)       | 363  | 43.6 | 42.6 | 3.1  | 10.6 | 43.6 | 0.2         | 10.4 | 37.8              | 49.4             |
| Lithuania          | 297  | 48.5 | 31.9 | 5.1  | 14.5 | 48.5 | 0.2         | 14.2 | 44.6              | 52.2             |
| Macedonia, Rep. of | 497  | 36.6 | 40.8 | 5.1  | 17.5 | 36.6 | 0.4         | 17.1 | 30.4              | 42.2             |
| Malaysia           | 696  | 58.1 | 30.6 | 8.6  | 2.8  | 58.1 | 0.0         | 2.8  | 55.2              | 61.2             |
| Moldova            | 459  | 37.6 | 33.9 | 8.7  | 19.7 | 37.6 | 1.4         | 18.4 | 34.2              | 41.6             |
| Morocco            | 647  | 40.3 | 32.4 | 9.9  | 17.4 | 40.3 | 1.7         | 15.6 | 34.7              | 44.4             |
| Netherlands        | 378  | 67.5 | 28.5 | 1.3  | 2.6  | 67.5 | 0.0         | 2.6  | 66.8              | 68.3             |
| New Zealand        | 452  | 38.8 | 48.9 | 4.0  | 8.3  | 38.8 | 0.5         | 7.8  | 33.8              | 43.5             |
| Philippines        | 820  | 18.4 | 54.6 | 8.8  | 18.2 | 18.4 | 0.5         | 17.7 | 18.4              | 18.4             |
| Romania            | 426  | 36.9 | 37.0 | 7.0  | 19.1 | 36.9 | 0.6         | 18.5 | 37.8              | 35.8             |
| Russian Federation | 547  | 49.6 | 32.3 | 4.2  | 13.8 | 49.6 | 1.5         | 12.4 | 43.6              | 56.7             |
| Singapore          | 616  | 66.5 | 28.9 | 3.0  | 1.6  | 66.5 | 0.0         | 1.6  | 62.9              | 69.8             |
| Slovak Republic    | 437  | 53.3 | 35.2 | 4.5  | 7.0  | 53.3 | 0.0         | 7.0  | 46.0              | 61.3             |
| Slovenia           | 376  | 56.3 | 31.0 | 4.3  | 8.4  | 56.3 | 0.0         | 8.4  | 53.9              | 59.1             |
| South Africa       | 971  | 14.6 | 35.6 | 15.7 | 34.1 | 14.6 | 0.8         | 33.4 | 11.1              | 18.6             |
| Thailand           | 717  | 35.7 | 52.2 | 4.6  | 7.5  | 35.7 | 0.1         | 7.4  | 34.7              | 36.9             |
| Tunisia            | 624  | 54.4 | 31.3 | 4.2  | 10.1 | 54.4 | 0.6         | 9.5  | 49.2              | 59.2             |
| Turkey             | 975  | 39.6 | 41.8 | 6.7  | 11.9 | 39.6 | 0.3         | 11.5 | 35.4              | 42.6             |
| United States      | 1112 | 33.9 | 53.0 | 4.0  | 9.1  | 33.9 | 0.2         | 8.9  | 29.3              | 38.6             |
| International Avg. | .    | 46.8 | 36.9 | 5.7  | 10.6 | 46.8 | 0.5         | 10.2 | 43.1              | 50.5             |

V1 = % Scoring 1 or better V2 = % Scoring 2 or better V3 = % Scoring 3 or better  
 Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.  
 Because of missing gender information, some totals may appear inconsistent

Science: Physics  
 Label: Transmission of sound on the moon ( S022019 - I14 )  
 Item Type = MC Key = C

| COUNTRY            | N    | A    | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 496  | 15.0 | 3.8  | 72.9 | 7.6  | 0.8                    | 72.9 | 0.0     | 0.8            | 0.0  | 72.6              | 73.3             |
| Belgium (Flemish)  | 647  | 19.6 | 1.3  | 64.2 | 13.6 | 1.3                    | 64.2 | 0.3     | 0.4            | 0.6  | 62.7              | 65.7             |
| Bulgaria           | 412  | 12.6 | 7.7  | 64.2 | 10.1 | 5.4                    | 64.2 | 0.2     | 1.2            | 4.0  | 62.9              | 65.2             |
| Canada             | 1092 | 12.0 | 2.8  | 75.9 | 9.3  | 0.1                    | 75.9 | 0.0     | 0.1            | 0.0  | 73.4              | 78.3             |
| Chile              | 734  | 12.6 | 9.7  | 50.1 | 22.6 | 5.0                    | 50.1 | 0.0     | 2.1            | 2.8  | 46.4              | 54.2             |
| Chinese Taipei     | 725  | 3.5  | 1.4  | 89.7 | 5.1  | 0.3                    | 89.7 | 0.0     | 0.2            | 0.1  | 86.9              | 92.4             |
| Cyprus             | 390  | 22.3 | 7.6  | 56.7 | 11.8 | 1.6                    | 56.7 | 0.3     | 0.0            | 1.3  | 53.6              | 59.9             |
| Czech Republic     | 420  | 7.7  | 1.1  | 73.3 | 15.7 | 2.2                    | 73.3 | 0.1     | 0.0            | 2.1  | 70.5              | 76.5             |
| England            | 365  | 12.4 | 2.0  | 73.7 | 8.8  | 3.1                    | 73.7 | 0.2     | 2.1            | 0.8  | 64.8              | 83.4             |
| Finland            | 362  | 8.5  | 1.7  | 82.9 | 6.7  | 0.2                    | 82.9 | 0.0     | 0.0            | 0.2  | 83.3              | 82.5             |
| Hong Kong, SAR     | 646  | 4.3  | 0.7  | 91.5 | 2.5  | 1.0                    | 91.5 | 0.0     | 0.5            | 0.5  | 90.6              | 92.3             |
| Hungary            | 405  | 7.9  | 1.2  | 83.5 | 6.7  | 0.8                    | 83.5 | 0.0     | 0.4            | 0.4  | 79.3              | 87.4             |
| Indonesia          | 738  | 7.9  | 3.6  | 75.7 | 12.6 | 0.1                    | 75.7 | 0.0     | 0.1            | 0.0  | 74.3              | 77.5             |
| Iran, Islamic Rep. | 657  | 15.2 | 7.3  | 55.4 | 20.8 | 1.3                    | 55.4 | 0.0     | 0.6            | 0.7  | 46.2              | 62.1             |
| Israel             | 532  | 12.5 | 11.1 | 58.0 | 15.3 | 3.1                    | 58.0 | 0.0     | 2.1            | 1.1  | 57.6              | 58.7             |
| Italy              | 428  | 13.1 | 4.7  | 71.4 | 9.3  | 1.5                    | 71.4 | 0.0     | 0.5            | 1.1  | 70.4              | 72.4             |
| Japan              | 584  | 7.1  | 2.6  | 85.3 | 4.8  | 0.2                    | 85.3 | 0.0     | 0.2            | 0.0  | 83.2              | 87.5             |
| Jordan             | 612  | 7.1  | 8.7  | 71.9 | 10.8 | 1.5                    | 71.9 | 0.4     | 0.4            | 0.6  | 75.9              | 68.4             |
| Korea, Rep. of     | 766  | 8.9  | 1.4  | 82.9 | 6.6  | 0.2                    | 82.9 | 0.0     | 0.0            | 0.2  | 79.4              | 86.3             |
| Latvia (LSS)       | 363  | 17.0 | 2.1  | 68.2 | 11.6 | 1.2                    | 68.2 | 0.5     | 0.2            | 0.5  | 61.5              | 74.7             |
| Lithuania          | 297  | 8.2  | 3.4  | 69.8 | 16.0 | 2.7                    | 69.8 | 0.0     | 0.2            | 2.5  | 65.8              | 73.7             |
| Macedonia, Rep. of | 497  | 12.8 | 5.8  | 62.4 | 15.9 | 3.1                    | 62.4 | 0.3     | 0.4            | 2.4  | 62.9              | 62.0             |
| Malaysia           | 696  | 21.2 | 3.5  | 67.8 | 7.3  | 0.3                    | 67.8 | 0.0     | 0.3            | 0.0  | 61.7              | 74.4             |
| Moldova            | 459  | 15.8 | 2.9  | 59.0 | 18.8 | 3.6                    | 59.0 | 0.0     | 2.0            | 1.6  | 61.4              | 56.1             |
| Morocco            | 644  | 16.4 | 8.3  | 43.2 | 26.1 | 6.0                    | 43.2 | 0.0     | 2.4            | 3.6  | 40.4              | 45.5             |
| Netherlands        | 378  | 13.6 | 3.5  | 70.4 | 10.9 | 1.5                    | 70.4 | 0.0     | 0.0            | 1.5  | 66.9              | 74.5             |
| New Zealand        | 452  | 13.9 | 3.8  | 67.8 | 12.3 | 2.3                    | 67.8 | 0.3     | 0.5            | 1.5  | 63.3              | 71.9             |
| Philippines        | 820  | 17.6 | 11.1 | 55.4 | 14.4 | 1.6                    | 55.4 | 0.2     | 0.5            | 1.0  | 57.7              | 52.6             |
| Romania            | 426  | 12.9 | 9.4  | 62.8 | 12.3 | 2.6                    | 62.8 | 1.2     | 0.6            | 0.8  | 59.2              | 66.7             |
| Russian Federation | 547  | 12.1 | 5.0  | 66.1 | 12.1 | 4.7                    | 66.1 | 0.4     | 1.9            | 2.3  | 61.5              | 71.5             |
| Singapore          | 616  | 13.0 | 1.5  | 80.0 | 5.4  | 0.0                    | 80.0 | 0.0     | 0.0            | 0.0  | 76.3              | 83.6             |
| Slovak Republic    | 437  | 8.2  | 1.5  | 72.4 | 16.8 | 1.1                    | 72.4 | 0.0     | 0.0            | 1.1  | 70.0              | 75.1             |
| Slovenia           | 376  | 12.2 | 3.9  | 75.3 | 7.4  | 1.2                    | 75.3 | 0.0     | 0.0            | 1.2  | 75.3              | 75.4             |
| South Africa       | 805  | 14.3 | 34.3 | 32.6 | 16.4 | 2.4                    | 32.6 | 0.3     | 0.8            | 1.3  | 29.9              | 35.8             |
| Thailand           | 717  | 23.8 | 7.7  | 55.8 | 12.0 | 0.7                    | 55.8 | 0.0     | 0.6            | 0.1  | 53.9              | 57.9             |
| Tunisia            | 626  | 17.3 | 2.6  | 58.6 | 15.2 | 6.3                    | 58.6 | 4.5     | 0.9            | 0.8  | 54.1              | 62.6             |
| Turkey             | 975  | 24.9 | 6.2  | 53.3 | 13.7 | 1.9                    | 53.3 | 0.3     | 0.4            | 1.2  | 49.8              | 55.8             |
| United States      | 1112 | 18.2 | 6.4  | 62.2 | 12.1 | 1.0                    | 62.2 | 0.0     | 0.3            | 0.7  | 62.2              | 62.2             |
| International Avg. | .    | 13.2 | 5.3  | 67.4 | 12.0 | 1.9                    | 67.4 | 0.2     | 0.6            | 1.1  | 64.9              | 69.9             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Physics  
 Label: Heat conductivity experiment ( S022002 - I15 )  
 Item Type = MC Key = C

| COUNTRY            | N    | A    | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 496  | 13.1 | 3.6  | 60.1 | 22.1 | 1.2                    | 60.1 | 0.4     | 0.8            | 0.0  | 58.4              | 61.9             |
| Belgium (Flemish)  | 647  | 11.6 | 4.4  | 42.5 | 40.6 | 0.8                    | 42.5 | 0.0     | 0.4            | 0.4  | 38.0              | 47.0             |
| Bulgaria           | 412  | 18.4 | 5.6  | 50.1 | 21.8 | 4.0                    | 50.1 | 0.0     | 1.2            | 2.8  | 43.5              | 57.2             |
| Canada             | 1092 | 8.7  | 2.5  | 67.9 | 20.6 | 0.3                    | 67.9 | 0.1     | 0.1            | 0.1  | 64.5              | 71.2             |
| Chile              | 734  | 11.8 | 6.8  | 27.7 | 49.1 | 4.6                    | 27.7 | 0.0     | 2.3            | 2.3  | 21.9              | 34.0             |
| Chinese Taipei     | 725  | 3.6  | 5.1  | 71.8 | 19.3 | 0.2                    | 71.8 | 0.0     | 0.2            | 0.0  | 64.2              | 79.5             |
| Cyprus             | 390  | 13.7 | 6.8  | 61.3 | 17.1 | 1.0                    | 61.3 | 0.0     | 0.0            | 1.0  | 59.1              | 63.7             |
| Czech Republic     | 420  | 22.4 | 5.2  | 54.1 | 16.5 | 1.9                    | 54.1 | 0.0     | 0.0            | 1.9  | 44.7              | 64.9             |
| England            | 365  | 10.2 | 2.9  | 62.3 | 21.8 | 2.8                    | 62.3 | 0.0     | 2.1            | 0.7  | 56.2              | 69.5             |
| Finland            | 362  | 17.8 | 4.5  | 54.5 | 22.5 | 0.6                    | 54.5 | 0.0     | 0.0            | 0.6  | 50.5              | 58.3             |
| Hong Kong, SAR     | 646  | 2.5  | 3.9  | 82.3 | 10.6 | 0.8                    | 82.3 | 0.0     | 0.5            | 0.3  | 79.4              | 84.9             |
| Hungary            | 405  | 21.3 | 6.3  | 48.9 | 22.1 | 1.5                    | 48.9 | 0.6     | 0.4            | 0.5  | 44.1              | 53.0             |
| Indonesia          | 738  | 6.4  | 3.8  | 29.4 | 59.8 | 0.6                    | 29.4 | 0.1     | 0.1            | 0.4  | 23.7              | 36.3             |
| Iran, Islamic Rep. | 657  | 18.4 | 7.1  | 36.2 | 37.2 | 1.1                    | 36.2 | 0.0     | 0.7            | 0.4  | 33.0              | 38.6             |
| Israel             | 532  | 10.4 | 8.3  | 59.3 | 18.5 | 3.5                    | 59.3 | 0.2     | 2.1            | 1.3  | 57.0              | 61.9             |
| Italy              | 428  | 12.8 | 5.9  | 49.4 | 30.6 | 1.3                    | 49.4 | 0.0     | 0.5            | 0.8  | 40.6              | 58.8             |
| Japan              | 584  | 8.2  | 7.1  | 71.3 | 13.0 | 0.3                    | 71.3 | 0.0     | 0.2            | 0.2  | 69.7              | 73.0             |
| Jordan             | 625  | 8.9  | 4.2  | 57.6 | 28.0 | 1.3                    | 57.6 | 0.3     | 0.4            | 0.5  | 58.9              | 56.3             |
| Korea, Rep. of     | 766  | 12.4 | 10.0 | 60.8 | 16.7 | 0.1                    | 60.8 | 0.0     | 0.0            | 0.1  | 58.6              | 63.0             |
| Latvia (LSS)       | 363  | 18.0 | 4.5  | 47.6 | 29.6 | 0.2                    | 47.6 | 0.0     | 0.2            | 0.0  | 42.2              | 53.0             |
| Lithuania          | 297  | 17.8 | 5.1  | 48.0 | 25.8 | 3.3                    | 48.0 | 0.0     | 0.2            | 3.1  | 46.8              | 49.2             |
| Macedonia, Rep. of | 497  | 25.2 | 8.2  | 33.4 | 30.4 | 2.8                    | 33.4 | 0.0     | 0.4            | 2.4  | 31.8              | 34.7             |
| Malaysia           | 696  | 8.7  | 3.9  | 56.0 | 31.0 | 0.3                    | 56.0 | 0.0     | 0.3            | 0.1  | 53.0              | 59.3             |
| Moldova            | 459  | 20.0 | 5.9  | 52.4 | 17.3 | 4.5                    | 52.4 | 1.3     | 2.0            | 1.2  | 51.3              | 53.6             |
| Morocco            | 644  | 21.0 | 6.8  | 41.2 | 24.6 | 6.4                    | 41.2 | 0.0     | 3.1            | 3.3  | 35.3              | 45.9             |
| Netherlands        | 378  | 10.0 | 3.9  | 37.1 | 47.7 | 1.2                    | 37.1 | 0.0     | 0.0            | 1.2  | 35.2              | 39.4             |
| New Zealand        | 452  | 13.4 | 3.1  | 56.4 | 25.8 | 1.2                    | 56.4 | 0.0     | 0.7            | 0.5  | 54.3              | 58.4             |
| Philippines        | 820  | 19.6 | 13.8 | 38.7 | 26.8 | 1.1                    | 38.7 | 0.2     | 0.5            | 0.5  | 39.0              | 38.4             |
| Romania            | 426  | 21.9 | 5.9  | 43.1 | 26.9 | 2.3                    | 43.1 | 0.8     | 0.7            | 0.9  | 45.2              | 40.8             |
| Russian Federation | 547  | 19.1 | 3.5  | 54.8 | 18.3 | 4.3                    | 54.8 | 0.1     | 1.9            | 2.3  | 50.1              | 60.4             |
| Singapore          | 616  | 2.4  | 1.8  | 82.0 | 13.9 | 0.0                    | 82.0 | 0.0     | 0.0            | 0.0  | 79.2              | 84.6             |
| Slovak Republic    | 437  | 25.3 | 4.2  | 50.2 | 19.4 | 0.9                    | 50.2 | 0.3     | 0.0            | 0.6  | 43.3              | 57.8             |
| Slovenia           | 376  | 23.0 | 7.1  | 49.8 | 19.3 | 0.8                    | 49.8 | 0.0     | 0.0            | 0.8  | 43.3              | 57.4             |
| South Africa       | 971  | 26.8 | 13.5 | 28.7 | 29.4 | 1.6                    | 28.7 | 0.2     | 0.8            | 0.6  | 25.6              | 32.2             |
| Thailand           | 717  | 14.1 | 2.5  | 57.5 | 25.3 | 0.6                    | 57.5 | 0.0     | 0.6            | 0.0  | 55.3              | 60.0             |
| Tunisia            | 628  | 10.2 | 4.1  | 44.7 | 36.9 | 4.1                    | 44.7 | 1.4     | 1.1            | 1.7  | 37.2              | 51.5             |
| Turkey             | 975  | 18.6 | 8.0  | 27.9 | 44.1 | 1.4                    | 27.9 | 0.0     | 0.4            | 1.1  | 23.2              | 31.2             |
| United States      | 1112 | 9.7  | 7.3  | 56.2 | 25.9 | 0.9                    | 56.2 | 0.1     | 0.3            | 0.6  | 55.1              | 57.3             |
| International Avg. | .    | 14.7 | 5.7  | 51.4 | 26.5 | 1.7                    | 51.4 | 0.2     | 0.7            | 0.9  | 47.7              | 55.2             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Earth Science  
 Label: Energy for Earth's water cycle ( S022294 - I16 )  
 Item Type = MC Key = B

| COUNTRY            | N    | A    | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 496  | 7.1  | 67.4 | 10.3 | 14.2 | 1.1                    | 67.4 | 0.0     | 0.8            | 0.3  | 63.1              | 71.9             |
| Belgium (Flemish)  | 647  | 3.4  | 65.8 | 12.3 | 18.0 | 0.6                    | 65.8 | 0.1     | 0.4            | 0.0  | 60.3              | 71.2             |
| Bulgaria           | 412  | 4.7  | 69.1 | 17.9 | 4.0  | 4.2                    | 69.1 | 0.5     | 1.2            | 2.5  | 66.0              | 71.9             |
| Canada             | 1092 | 3.7  | 70.6 | 11.1 | 14.0 | 0.5                    | 70.6 | 0.0     | 0.1            | 0.5  | 64.8              | 76.3             |
| Chile              | 734  | 2.2  | 46.3 | 21.5 | 25.6 | 4.3                    | 46.3 | 0.0     | 3.0            | 1.3  | 40.1              | 53.0             |
| Chinese Taipei     | 726  | 1.2  | 78.0 | 15.0 | 5.7  | 0.2                    | 78.0 | 0.0     | 0.2            | 0.0  | 72.6              | 83.5             |
| Cyprus             | 391  | 1.4  | 64.9 | 7.0  | 26.4 | 0.2                    | 64.9 | 0.2     | 0.0            | 0.0  | 63.0              | 67.0             |
| Czech Republic     | 420  | 7.2  | 64.8 | 5.1  | 21.8 | 1.2                    | 64.8 | 0.4     | 0.0            | 0.8  | 58.7              | 71.8             |
| England            | 365  | 1.8  | 69.8 | 11.2 | 14.4 | 2.8                    | 69.8 | 0.0     | 2.4            | 0.4  | 63.9              | 76.1             |
| Finland            | 362  | 3.9  | 71.3 | 11.1 | 12.7 | 1.0                    | 71.3 | 0.0     | 0.0            | 1.0  | 67.6              | 74.8             |
| Hong Kong, SAR     | 647  | 1.6  | 83.3 | 7.6  | 6.6  | 0.8                    | 83.3 | 0.0     | 0.7            | 0.1  | 80.4              | 86.0             |
| Hungary            | 405  | 2.1  | 69.7 | 0.4  | 25.6 | 2.1                    | 69.7 | 1.3     | 0.4            | 0.5  | 65.4              | 74.0             |
| Indonesia          | 738  | 1.8  | 49.3 | 24.1 | 24.4 | 0.3                    | 49.3 | 0.0     | 0.2            | 0.1  | 44.2              | 55.5             |
| Iran, Islamic Rep. | 657  | 3.3  | 55.5 | 19.8 | 20.5 | 0.9                    | 55.5 | 0.0     | 0.8            | 0.1  | 43.6              | 64.0             |
| Israel             | 532  | 3.2  | 55.3 | 17.0 | 20.8 | 3.6                    | 55.3 | 0.2     | 2.1            | 1.4  | 48.3              | 62.9             |
| Italy              | 428  | 1.8  | 60.9 | 21.9 | 13.2 | 2.2                    | 60.9 | 0.0     | 0.5            | 1.7  | 57.9              | 64.2             |
| Japan              | 584  | 4.6  | 72.4 | 12.6 | 10.1 | 0.3                    | 72.4 | 0.0     | 0.2            | 0.2  | 68.7              | 76.1             |
| Jordan             | 624  | 1.0  | 80.2 | 9.4  | 8.5  | 1.0                    | 80.2 | 0.3     | 0.4            | 0.2  | 82.7              | 77.8             |
| Korea, Rep. of     | 766  | 2.2  | 68.5 | 10.1 | 19.0 | 0.2                    | 68.5 | 0.0     | 0.0            | 0.2  | 61.8              | 75.1             |
| Latvia (LSS)       | 363  | 3.0  | 42.7 | 21.0 | 30.9 | 2.5                    | 42.7 | 0.9     | 0.2            | 1.4  | 35.9              | 49.4             |
| Lithuania          | 297  | 4.4  | 51.0 | 16.9 | 23.8 | 3.8                    | 51.0 | 0.0     | 0.5            | 3.3  | 42.7              | 59.0             |
| Macedonia, Rep. of | 497  | 2.5  | 52.0 | 20.8 | 20.9 | 3.8                    | 52.0 | 0.2     | 0.8            | 2.8  | 51.6              | 52.3             |
| Malaysia           | 696  | 0.5  | 71.3 | 14.3 | 13.4 | 0.5                    | 71.3 | 0.0     | 0.3            | 0.1  | 67.4              | 75.6             |
| Moldova            | 459  | 1.4  | 51.6 | 17.4 | 26.2 | 3.5                    | 51.6 | 0.0     | 2.4            | 1.0  | 46.0              | 58.1             |
| Morocco            | 645  | 5.4  | 33.1 | 28.8 | 27.3 | 5.4                    | 33.1 | 0.0     | 3.3            | 2.2  | 29.1              | 36.3             |
| Netherlands        | 378  | 2.8  | 69.1 | 11.0 | 16.1 | 1.0                    | 69.1 | 0.8     | 0.0            | 0.2  | 65.3              | 73.4             |
| New Zealand        | 452  | 7.7  | 67.0 | 15.3 | 8.7  | 1.3                    | 67.0 | 0.0     | 0.7            | 0.6  | 64.1              | 69.6             |
| Philippines        | 820  | 3.6  | 47.7 | 16.2 | 31.6 | 0.9                    | 47.7 | 0.2     | 0.5            | 0.3  | 48.2              | 47.1             |
| Romania            | 426  | 2.8  | 35.2 | 29.8 | 29.4 | 2.7                    | 35.2 | 1.6     | 0.7            | 0.4  | 31.5              | 39.0             |
| Russian Federation | 547  | 2.7  | 70.5 | 6.4  | 16.8 | 3.6                    | 70.5 | 1.0     | 1.9            | 0.6  | 65.6              | 76.3             |
| Singapore          | 616  | 1.1  | 77.1 | 10.8 | 10.7 | 0.3                    | 77.1 | 0.0     | 0.0            | 0.3  | 71.6              | 82.3             |
| Slovak Republic    | 437  | 4.9  | 61.1 | 14.9 | 17.2 | 1.9                    | 61.1 | 0.4     | 0.0            | 1.5  | 50.6              | 72.8             |
| Slovenia           | 376  | 9.7  | 63.0 | 9.7  | 16.7 | 0.9                    | 63.0 | 0.0     | 0.0            | 0.9  | 57.6              | 69.5             |
| South Africa       | 971  | 10.8 | 46.6 | 11.8 | 28.2 | 2.7                    | 46.6 | 0.7     | 0.8            | 1.2  | 42.0              | 51.8             |
| Thailand           | 717  | 2.0  | 67.9 | 15.0 | 14.4 | 0.7                    | 67.9 | 0.0     | 0.6            | 0.1  | 65.6              | 70.6             |
| Tunisia            | 629  | 1.4  | 62.5 | 16.2 | 13.4 | 6.5                    | 62.5 | 4.3     | 1.4            | 0.8  | 56.3              | 68.1             |
| Turkey             | 975  | 2.4  | 58.5 | 12.8 | 25.0 | 1.4                    | 58.5 | 0.0     | 0.4            | 0.9  | 52.4              | 62.7             |
| United States      | 1112 | 6.1  | 63.7 | 13.4 | 16.1 | 0.6                    | 63.7 | 0.1     | 0.3            | 0.2  | 61.3              | 66.2             |
| International Avg. | .    | 3.5  | 62.0 | 14.4 | 18.2 | 1.9                    | 62.0 | 0.3     | 0.7            | 0.8  | 57.3              | 66.7             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent



Science: Life Science  
 Label: Animal on Earth longest time ( S022106 - I17 )  
 Item Type = MC Key = C

| COUNTRY            | N    | A    | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 496  | 4.2  | 3.2  | 19.9 | 70.8 | 1.9                    | 19.9 | 0.5     | 1.1            | 0.3  | 12.4              | 27.8             |
| Belgium (Flemish)  | 647  | 3.7  | 5.5  | 51.9 | 38.5 | 0.4                    | 51.9 | 0.0     | 0.4            | 0.0  | 44.7              | 58.8             |
| Bulgaria           | 412  | 6.8  | 4.9  | 35.2 | 49.0 | 4.2                    | 35.2 | 0.6     | 1.5            | 2.0  | 30.1              | 39.6             |
| Canada             | 1092 | 5.8  | 5.1  | 22.7 | 64.7 | 1.8                    | 22.7 | 0.8     | 0.1            | 0.8  | 19.8              | 25.5             |
| Chile              | 734  | 26.7 | 6.9  | 13.1 | 48.1 | 5.1                    | 13.1 | 0.0     | 3.9            | 1.2  | 12.2              | 14.2             |
| Chinese Taipei     | 726  | 10.8 | 1.7  | 23.1 | 64.1 | 0.3                    | 23.1 | 0.0     | 0.2            | 0.1  | 20.2              | 26.1             |
| Cyprus             | 389  | 27.8 | 12.2 | 24.0 | 34.3 | 1.6                    | 24.0 | 0.3     | 0.0            | 1.4  | 23.3              | 24.6             |
| Czech Republic     | 420  | 10.8 | 6.1  | 43.0 | 39.1 | 0.9                    | 43.0 | 0.2     | 0.0            | 0.7  | 38.3              | 48.5             |
| England            | 365  | 9.4  | 5.7  | 19.2 | 62.3 | 3.3                    | 19.2 | 1.0     | 2.4            | 0.0  | 13.7              | 25.5             |
| Finland            | 362  | 4.9  | 8.1  | 25.5 | 58.7 | 2.8                    | 25.5 | 0.0     | 0.0            | 2.8  | 22.8              | 28.1             |
| Hong Kong, SAR     | 647  | 16.6 | 7.1  | 18.5 | 56.7 | 1.2                    | 18.5 | 0.0     | 0.7            | 0.5  | 14.0              | 22.5             |
| Hungary            | 405  | 15.7 | 3.8  | 21.8 | 57.5 | 1.3                    | 21.8 | 0.2     | 0.4            | 0.7  | 17.7              | 25.8             |
| Indonesia          | 738  | 61.8 | 2.9  | 6.1  | 28.8 | 0.4                    | 6.1  | 0.0     | 0.2            | 0.2  | 4.9               | 7.5              |
| Iran, Islamic Rep. | 657  | 67.3 | 5.2  | 10.4 | 15.6 | 1.5                    | 10.4 | 0.0     | 0.8            | 0.7  | 6.5               | 13.2             |
| Israel             | 428  | 21.5 | 11.1 | 26.2 | 37.6 | 3.6                    | 26.2 | 0.2     | 2.3            | 1.0  | 19.1              | 33.1             |
| Italy              | 428  | 16.0 | 4.3  | 37.4 | 40.7 | 1.6                    | 37.4 | 0.0     | 0.5            | 1.1  | 35.4              | 39.6             |
| Japan              | 584  | 3.6  | 4.3  | 62.6 | 29.2 | 0.2                    | 62.6 | 0.0     | 0.2            | 0.0  | 56.2              | 69.2             |
| Jordan             | .    | .    | .    | .    | .    | .                      | .    | .       | .              | .    | .                 | .                |
| Korea, Rep. of     | 766  | 9.0  | 8.1  | 41.2 | 41.5 | 0.2                    | 41.2 | 0.0     | 0.2            | 0.0  | 33.6              | 48.7             |
| Latvia (LSS)       | 363  | 12.2 | 3.8  | 14.5 | 66.9 | 2.7                    | 14.5 | 1.7     | 0.2            | 0.8  | 12.8              | 16.2             |
| Lithuania          | 297  | 11.0 | 3.5  | 22.7 | 59.0 | 3.8                    | 22.7 | 0.0     | 0.5            | 3.2  | 20.8              | 24.6             |
| Macedonia, Rep. of | 497  | 27.0 | 5.0  | 15.5 | 49.7 | 2.8                    | 15.5 | 0.5     | 0.8            | 1.5  | 13.1              | 17.6             |
| Malaysia           | 696  | 35.2 | 4.1  | 9.0  | 50.8 | 0.8                    | 9.0  | 0.0     | 0.3            | 0.5  | 8.3               | 9.8              |
| Moldova            | 459  | 17.4 | 5.9  | 22.6 | 50.2 | 3.9                    | 22.6 | 0.0     | 2.8            | 1.1  | 25.0              | 19.7             |
| Morocco            | 645  | 55.0 | 6.4  | 8.1  | 22.5 | 8.0                    | 8.1  | 0.3     | 3.8            | 3.8  | 7.1               | 8.9              |
| Netherlands        | 378  | 6.4  | 4.2  | 19.3 | 69.1 | 1.1                    | 19.3 | 0.1     | 0.0            | 1.0  | 17.0              | 21.9             |
| New Zealand        | 452  | 4.2  | 2.7  | 13.0 | 78.0 | 2.1                    | 13.0 | 0.6     | 0.7            | 0.8  | 8.2               | 17.3             |
| Philippines        | 820  | 49.2 | 15.8 | 9.2  | 23.9 | 1.9                    | 9.2  | 0.3     | 0.6            | 1.0  | 8.0               | 10.7             |
| Romania            | 426  | 22.2 | 6.3  | 19.9 | 48.3 | 3.3                    | 19.9 | 2.0     | 0.7            | 0.6  | 20.0              | 19.8             |
| Russian Federation | 547  | 4.6  | 2.6  | 44.7 | 44.1 | 4.0                    | 44.7 | 1.1     | 2.1            | 0.8  | 39.3              | 51.1             |
| Singapore          | 616  | 21.5 | 6.8  | 14.8 | 56.5 | 0.4                    | 14.8 | 0.3     | 0.1            | 0.0  | 10.9              | 18.6             |
| Slovak Republic    | 437  | 8.2  | 3.9  | 34.2 | 52.5 | 1.1                    | 34.2 | 0.0     | 0.3            | 0.8  | 36.6              | 31.6             |
| Slovenia           | 376  | 11.4 | 4.7  | 42.1 | 41.2 | 0.6                    | 42.1 | 0.0     | 0.0            | 0.6  | 43.8              | 40.1             |
| South Africa       | 971  | 29.8 | 28.9 | 16.2 | 21.4 | 3.7                    | 16.2 | 0.2     | 0.8            | 2.8  | 19.5              | 12.4             |
| Thailand           | 717  | 45.4 | 1.5  | 6.4  | 45.9 | 0.8                    | 6.4  | 0.0     | 0.7            | 0.1  | 5.0               | 8.0              |
| Tunisia            | 629  | 30.6 | 6.6  | 9.5  | 46.8 | 6.5                    | 9.5  | 4.5     | 1.6            | 0.4  | 6.3               | 12.4             |
| Turkey             | .    | .    | .    | .    | .    | .                      | .    | .       | .              | .    | .                 | .                |
| United States      | 1112 | 4.6  | 8.6  | 21.8 | 62.9 | 2.1                    | 21.8 | 0.3     | 0.3            | 1.4  | 17.6              | 26.1             |
| International Avg. | .    | 20.0 | 6.3  | 23.5 | 48.0 | 2.3                    | 23.5 | 0.4     | 0.9            | 1.0  | 20.7              | 26.3             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Environmental and Resource Issues  
 Label: Acid rain from sulfur dioxide ( S022244 - I18 )  
 Item Type = SA Key = X

| COUNTRY            | N    | 10   | 11  | 12   | 19  | 70   | 79   | 99   | V1   | NOT REACH |      | 1.GIRL  | 2.BOY   |
|--------------------|------|------|-----|------|-----|------|------|------|------|-----------|------|---------|---------|
|                    |      |      |     |      |     |      |      |      |      | ED        | OMIT | % Right | % Right |
| Australia          | 496  | 7.0  | 2.8 | 23.2 | 0.3 | 18.5 | 20.8 | 27.5 | 33.3 | 1.1       | 26.4 | 31.3    | 35.3    |
| Belgium (Flemish)  | 647  | 6.0  | 5.4 | 30.1 | 0.2 | 13.0 | 23.6 | 21.7 | 41.7 | 0.4       | 21.2 | 37.6    | 45.7    |
| Bulgaria           | 411  | 13.8 | 0.6 | 5.4  | 8.3 | 4.5  | 13.8 | 53.7 | 28.1 | 2.1       | 51.6 | 25.1    | 31.3    |
| Canada             | 1092 | 3.2  | 1.0 | 30.9 | 0.1 | 17.7 | 27.9 | 19.2 | 35.2 | 0.1       | 19.2 | 32.9    | 37.3    |
| Chile              | 734  | 0.8  | 0.2 | 4.5  | 0.4 | 5.7  | 30.9 | 57.6 | 5.9  | 4.2       | 53.4 | 4.3     | 7.7     |
| Chinese Taipei     | 726  | 16.9 | 0.5 | 22.0 | 1.4 | 14.2 | 30.3 | 14.8 | 40.7 | 0.2       | 14.6 | 33.4    | 48.1    |
| Cyprus             | 389  | 0.6  | 1.2 | 14.1 | 1.8 | 8.7  | 19.3 | 54.3 | 17.7 | 0.3       | 54.0 | 17.2    | 18.2    |
| Czech Republic     | 419  | 7.5  | 0.7 | 14.2 | 0.5 | 9.5  | 31.4 | 36.1 | 22.9 | 0.0       | 36.1 | 14.0    | 33.2    |
| England            | 365  | 2.9  | 1.0 | 32.8 | 2.2 | 12.3 | 21.8 | 27.0 | 38.9 | 2.4       | 24.6 | 35.4    | 42.3    |
| Finland            | 362  | 1.8  | 0.3 | 22.0 | 0.0 | 8.5  | 38.0 | 29.3 | 24.1 | 0.0       | 29.3 | 22.3    | 25.9    |
| Hong Kong, SAR     | 647  | 4.8  | 0.7 | 21.2 | 2.5 | 12.0 | 22.0 | 36.8 | 29.2 | 0.7       | 36.1 | 25.2    | 32.9    |
| Hungary            | 405  | 11.2 | 3.5 | 19.1 | 1.0 | 13.7 | 14.1 | 37.4 | 34.8 | 0.4       | 37.0 | 28.3    | 40.9    |
| Indonesia          | 738  | 0.0  | 0.1 | 2.1  | 0.3 | 3.3  | 55.6 | 38.6 | 2.5  | 0.2       | 38.3 | 2.2     | 2.9     |
| Iran, Islamic Rep. | 657  | 3.4  | 0.7 | 3.8  | 0.2 | 10.2 | 25.2 | 56.5 | 8.1  | 0.9       | 55.6 | 6.8     | 9.0     |
| Israel             | 532  | 2.6  | 1.1 | 16.3 | 1.2 | 9.6  | 16.5 | 52.7 | 21.3 | 2.2       | 50.5 | 14.2    | 28.7    |
| Italy              | 428  | 4.3  | 0.8 | 15.7 | 0.8 | 15.3 | 21.9 | 41.2 | 21.6 | 0.5       | 40.7 | 20.3    | 23.0    |
| Japan              | 584  | 1.7  | 1.4 | 30.5 | 0.0 | 18.5 | 21.2 | 26.8 | 33.6 | 0.2       | 26.6 | 31.0    | 36.2    |
| Jordan             | 624  | 8.5  | 4.3 | 13.8 | 2.8 | 9.1  | 34.2 | 27.4 | 29.3 | 0.4       | 26.9 | 33.3    | 25.8    |
| Korea, Rep. of     | 766  | 5.8  | 0.4 | 17.7 | 0.0 | 32.5 | 20.5 | 23.1 | 23.9 | 0.2       | 22.9 | 21.4    | 26.3    |
| Latvia (LSS)       | 363  | 4.3  | 1.5 | 8.7  | 1.1 | 14.9 | 19.1 | 50.4 | 15.6 | 1.0       | 49.5 | 15.0    | 16.1    |
| Lithuania          | 297  | 3.2  | 2.1 | 14.2 | 0.8 | 9.6  | 23.2 | 46.9 | 20.3 | 0.5       | 46.4 | 14.9    | 25.5    |
| Macedonia, Rep. of | 497  | 6.4  | 2.7 | 3.1  | 3.3 | 4.0  | 9.6  | 70.8 | 15.6 | 1.0       | 69.8 | 16.5    | 14.8    |
| Malaysia           | 695  | 4.8  | 0.8 | 15.0 | 0.7 | 9.7  | 33.1 | 35.9 | 21.3 | 0.3       | 35.5 | 18.8    | 24.0    |
| Moldova            | 459  | 11.6 | 0.3 | 3.6  | 0.3 | 9.9  | 18.4 | 55.8 | 15.8 | 3.0       | 52.9 | 15.2    | 16.6    |
| Morocco            | 645  | 0.4  | 0.4 | 0.9  | 0.6 | 5.1  | 38.5 | 54.2 | 2.3  | 4.3       | 49.9 | 2.6     | 2.0     |
| Netherlands        | 378  | 0.0  | 0.5 | 33.5 | 0.0 | 7.9  | 40.3 | 17.8 | 34.0 | 0.0       | 17.8 | 30.0    | 38.5    |
| New Zealand        | 452  | 2.5  | 0.6 | 24.3 | 0.8 | 11.8 | 32.9 | 27.2 | 28.2 | 0.7       | 26.5 | 26.1    | 30.2    |
| Philippines        | 820  | 0.4  | 0.6 | 4.8  | 0.4 | 14.8 | 41.8 | 37.3 | 6.1  | 0.8       | 36.4 | 7.4     | 4.6     |
| Romania            | 426  | 10.6 | 1.9 | 9.8  | 1.5 | 3.1  | 15.0 | 58.2 | 23.8 | 0.7       | 57.5 | 25.1    | 22.4    |
| Russian Federation | 547  | 16.0 | 1.4 | 10.0 | 0.6 | 14.4 | 12.9 | 44.8 | 28.0 | 2.6       | 42.2 | 23.9    | 32.9    |
| Singapore          | 616  | 24.1 | 4.3 | 32.5 | 1.3 | 8.4  | 18.6 | 10.8 | 62.1 | 0.1       | 10.7 | 60.9    | 63.3    |
| Slovak Republic    | 437  | 5.5  | 2.5 | 14.5 | 3.2 | 20.0 | 12.5 | 41.7 | 25.7 | 0.3       | 41.5 | 21.2    | 30.7    |
| Slovenia           | 376  | 12.3 | 4.2 | 16.9 | 1.4 | 9.4  | 18.2 | 37.6 | 34.7 | 0.0       | 37.6 | 31.0    | 39.2    |
| South Africa       | 971  | 0.4  | 0.5 | 2.4  | 0.1 | 3.4  | 47.0 | 46.1 | 3.5  | 0.8       | 45.4 | 2.6     | 4.4     |
| Thailand           | 717  | 5.4  | 0.5 | 9.8  | 2.5 | 8.3  | 52.0 | 21.5 | 18.2 | 0.7       | 20.8 | 19.4    | 16.8    |
| Tunisia            | 627  | 0.4  | 0.3 | 2.5  | 0.0 | 11.1 | 32.0 | 53.7 | 3.2  | 1.6       | 52.1 | 0.7     | 5.5     |
| Turkey             | 975  | 4.4  | 3.6 | 6.7  | 4.3 | 12.6 | 17.5 | 51.0 | 19.0 | 0.4       | 50.6 | 19.9    | 18.3    |
| United States      | 1112 | 0.8  | 0.7 | 25.7 | 0.5 | 8.5  | 43.6 | 20.2 | 27.8 | 0.3       | 19.9 | 21.4    | 34.2    |
| International Avg. | .    | 5.7  | 1.5 | 15.2 | 1.2 | 11.1 | 26.7 | 38.5 | 23.6 | 0.9       | 37.6 | 21.3    | 26.1    |

V1 = % Scoring 1 or better V2 = % Scoring 2 or better V3 = % Scoring 3 or better  
 Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.  
 Because of missing gender information, some totals may appear inconsistent

Science: Life Science  
 Label: Levels of organization in living things ( S022150 - I19 )  
 Item Type = MC Key = A

| COUNTRY            | N    | A    | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 496  | 41.5 | 15.0 | 32.9 | 9.0  | 1.6                    | 41.5 | 0.0     | 1.3            | 0.3  | 38.5              | 44.6             |
| Belgium (Flemish)  | 647  | 55.2 | 12.3 | 23.9 | 7.9  | 0.7                    | 55.2 | 0.1     | 0.4            | 0.2  | 57.0              | 53.4             |
| Bulgaria           | 411  | 67.0 | 11.0 | 13.4 | 4.0  | 4.6                    | 67.0 | 0.0     | 2.6            | 2.0  | 69.9              | 63.7             |
| Canada             | 1092 | 38.3 | 15.3 | 31.2 | 14.5 | 0.7                    | 38.3 | 0.0     | 0.2            | 0.5  | 39.2              | 37.3             |
| Chile              | 734  | 30.4 | 24.6 | 21.6 | 15.6 | 7.7                    | 30.4 | 0.0     | 5.0            | 2.7  | 33.2              | 27.4             |
| Chinese Taipei     | 726  | 57.1 | 23.9 | 9.8  | 9.1  | 0.2                    | 57.1 | 0.0     | 0.2            | 0.0  | 54.5              | 59.8             |
| Cyprus             | 390  | 51.1 | 16.0 | 24.0 | 7.5  | 1.4                    | 51.1 | 0.0     | 0.5            | 0.9  | 53.1              | 49.0             |
| Czech Republic     | 419  | 66.3 | 6.8  | 20.7 | 4.5  | 1.7                    | 66.3 | 0.0     | 0.0            | 1.6  | 62.5              | 70.6             |
| England            | 365  | 33.7 | 16.1 | 35.7 | 10.7 | 3.8                    | 33.7 | 0.0     | 2.7            | 1.2  | 27.1              | 41.3             |
| Finland            | 362  | 39.2 | 18.2 | 29.6 | 11.5 | 1.6                    | 39.2 | 0.0     | 0.5            | 1.1  | 42.7              | 35.8             |
| Hong Kong, SAR     | 647  | 43.0 | 17.5 | 20.7 | 18.0 | 0.9                    | 43.0 | 0.0     | 0.7            | 0.2  | 43.2              | 42.7             |
| Hungary            | 405  | 78.6 | 7.1  | 9.3  | 3.5  | 1.6                    | 78.6 | 0.3     | 0.6            | 0.7  | 79.4              | 78.0             |
| Indonesia          | 738  | 42.6 | 23.0 | 21.0 | 12.3 | 1.1                    | 42.6 | 0.5     | 0.2            | 0.4  | 41.7              | 43.7             |
| Iran, Islamic Rep. | 657  | 39.8 | 22.1 | 21.2 | 14.2 | 2.8                    | 39.8 | 0.0     | 1.5            | 1.3  | 36.5              | 42.2             |
| Israel             | 532  | 37.7 | 21.9 | 24.9 | 9.5  | 6.0                    | 37.7 | 0.2     | 3.5            | 2.3  | 32.9              | 42.9             |
| Italy              | 428  | 40.6 | 21.3 | 23.5 | 10.6 | 4.0                    | 40.6 | 0.0     | 1.2            | 2.8  | 38.7              | 42.6             |
| Japan              | 584  | 25.3 | 25.3 | 15.1 | 33.4 | 0.9                    | 25.3 | 0.0     | 0.5            | 0.3  | 23.8              | 26.9             |
| Jordan             | 624  | 37.1 | 19.9 | 28.2 | 12.8 | 1.9                    | 37.1 | 0.3     | 0.7            | 0.9  | 37.4              | 36.8             |
| Korea, Rep. of     | 766  | 64.9 | 11.6 | 15.1 | 7.9  | 0.4                    | 64.9 | 0.1     | 0.3            | 0.0  | 67.3              | 62.5             |
| Latvia (LSS)       | 363  | 51.9 | 8.3  | 26.5 | 9.3  | 3.9                    | 51.9 | 0.6     | 1.2            | 2.1  | 56.6              | 47.3             |
| Lithuania          | 297  | 56.5 | 11.5 | 15.3 | 9.7  | 7.0                    | 56.5 | 0.0     | 1.5            | 5.6  | 58.5              | 54.5             |
| Macedonia, Rep. of | 497  | 54.9 | 11.7 | 21.2 | 6.6  | 5.7                    | 54.9 | 0.3     | 1.5            | 3.9  | 60.0              | 50.3             |
| Malaysia           | 696  | 59.9 | 11.3 | 21.2 | 5.8  | 1.9                    | 59.9 | 0.0     | 0.8            | 1.1  | 60.6              | 59.0             |
| Moldova            | 459  | 56.8 | 10.9 | 20.6 | 5.6  | 6.1                    | 56.8 | 0.2     | 3.5            | 2.4  | 59.8              | 53.3             |
| Morocco            | 641  | 16.4 | 23.1 | 31.5 | 16.5 | 12.4                   | 16.4 | 0.2     | 5.0            | 7.3  | 16.2              | 16.6             |
| Netherlands        | 378  | 55.9 | 13.6 | 20.2 | 9.4  | 0.9                    | 55.9 | 0.0     | 0.1            | 0.8  | 47.8              | 65.4             |
| New Zealand        | 452  | 32.6 | 19.6 | 32.9 | 12.8 | 2.2                    | 32.6 | 0.0     | 0.7            | 1.5  | 29.1              | 35.8             |
| Philippines        | 820  | 43.6 | 24.7 | 20.5 | 10.1 | 1.2                    | 43.6 | 0.0     | 0.8            | 0.4  | 48.7              | 37.5             |
| Romania            | 426  | 63.7 | 12.6 | 11.9 | 9.7  | 2.0                    | 63.7 | 0.7     | 0.9            | 0.5  | 68.1              | 59.0             |
| Russian Federation | 547  | 46.9 | 12.7 | 26.9 | 7.3  | 6.3                    | 46.9 | 0.0     | 4.1            | 2.2  | 43.4              | 51.1             |
| Singapore          | 616  | 59.1 | 12.5 | 20.7 | 7.0  | 0.6                    | 59.1 | 0.0     | 0.1            | 0.5  | 57.3              | 60.8             |
| Slovak Republic    | 437  | 65.9 | 6.6  | 19.8 | 5.3  | 2.5                    | 65.9 | 0.0     | 0.5            | 2.0  | 63.5              | 68.5             |
| Slovenia           | 376  | 57.9 | 13.8 | 17.9 | 10.1 | 0.4                    | 57.9 | 0.0     | 0.0            | 0.4  | 59.0              | 56.5             |
| South Africa       | 971  | 26.4 | 28.9 | 28.3 | 14.0 | 2.4                    | 26.4 | 0.4     | 1.0            | 1.0  | 27.9              | 24.7             |
| Thailand           | 717  | 44.9 | 13.8 | 24.1 | 15.9 | 1.3                    | 44.9 | 0.0     | 0.7            | 0.6  | 43.6              | 46.5             |
| Tunisia            | 629  | 18.3 | 19.0 | 35.5 | 13.9 | 13.3                   | 18.3 | 8.8     | 2.8            | 1.7  | 18.4              | 18.2             |
| Turkey             | 975  | 41.9 | 21.2 | 20.4 | 14.2 | 2.2                    | 41.9 | 0.0     | 0.8            | 1.4  | 43.5              | 40.7             |
| United States      | 1112 | 49.4 | 13.3 | 25.0 | 11.2 | 0.9                    | 49.4 | 0.0     | 0.4            | 0.5  | 49.3              | 49.5             |
| International Avg. | .    | 47.2 | 16.3 | 22.7 | 10.8 | 3.1                    | 47.2 | 0.3     | 1.3            | 1.5  | 47.1              | 47.3             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Scientific Inquiry and the Nature of Science  
 Label: Graph interpretation of bicycle ride ( S022042 - I20 )  
 Item Type = MC Key = B

| COUNTRY            | N    | A    | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 496  | 18.2 | 66.7 | 6.4  | 7.0  | 1.7                    | 66.7 | 0.1     | 1.3            | 0.3  | 63.0              | 70.6             |
| Belgium (Flemish)  | 647  | 21.2 | 71.3 | 1.6  | 5.4  | 0.6                    | 71.3 | 0.0     | 0.4            | 0.1  | 69.0              | 73.5             |
| Bulgaria           | 411  | 27.7 | 52.7 | 6.6  | 6.4  | 6.6                    | 52.7 | 0.4     | 2.9            | 3.2  | 51.8              | 53.1             |
| Canada             | 1092 | 20.8 | 62.5 | 5.5  | 10.8 | 0.3                    | 62.5 | 0.0     | 0.2            | 0.1  | 60.1              | 64.9             |
| Chile              | 734  | 42.6 | 26.8 | 13.4 | 10.1 | 7.1                    | 26.8 | 0.0     | 5.5            | 1.6  | 26.6              | 27.1             |
| Chinese Taipei     | 726  | 14.9 | 72.3 | 6.5  | 6.0  | 0.3                    | 72.3 | 0.1     | 0.2            | 0.0  | 71.1              | 73.4             |
| Cyprus             | 391  | 42.7 | 38.4 | 11.9 | 5.6  | 1.5                    | 38.4 | 0.0     | 0.5            | 0.9  | 39.8              | 36.9             |
| Czech Republic     | 420  | 30.2 | 56.0 | 7.6  | 4.0  | 2.1                    | 56.0 | 0.0     | 0.0            | 2.1  | 53.7              | 58.8             |
| England            | 365  | 28.5 | 57.8 | 5.4  | 5.3  | 3.0                    | 57.8 | 0.0     | 2.7            | 0.3  | 54.9              | 60.8             |
| Finland            | 362  | 23.3 | 67.3 | 3.7  | 5.0  | 0.7                    | 67.3 | 0.0     | 0.5            | 0.2  | 62.0              | 72.2             |
| Hong Kong, SAR     | 647  | 7.6  | 84.1 | 3.0  | 4.2  | 1.0                    | 84.1 | 0.0     | 0.7            | 0.4  | 86.8              | 81.6             |
| Hungary            | 405  | 24.3 | 66.1 | 4.0  | 3.6  | 2.1                    | 66.1 | 0.2     | 1.1            | 0.8  | 62.2              | 69.4             |
| Indonesia          | 738  | 32.2 | 33.7 | 17.3 | 15.7 | 1.2                    | 33.7 | 0.0     | 0.2            | 0.9  | 31.3              | 36.6             |
| Iran, Islamic Rep. | 657  | 51.3 | 26.7 | 12.5 | 6.6  | 3.0                    | 26.7 | 0.1     | 1.5            | 1.4  | 16.7              | 33.9             |
| Israel             | 532  | 34.5 | 43.5 | 9.3  | 8.0  | 4.8                    | 43.5 | 0.0     | 3.6            | 1.2  | 41.7              | 45.5             |
| Italy              | 428  | 37.0 | 45.9 | 8.0  | 5.4  | 3.6                    | 45.9 | 0.0     | 1.4            | 2.2  | 44.2              | 47.9             |
| Japan              | 584  | 6.3  | 85.3 | 4.0  | 3.9  | 0.5                    | 85.3 | 0.0     | 0.5            | 0.0  | 86.0              | 84.6             |
| Jordan             | 619  | 36.3 | 29.8 | 17.8 | 13.6 | 2.5                    | 29.8 | 0.7     | 0.7            | 1.1  | 27.1              | 32.3             |
| Korea, Rep. of     | 766  | 12.8 | 76.9 | 5.5  | 4.5  | 0.4                    | 76.9 | 0.1     | 0.3            | 0.0  | 75.2              | 78.5             |
| Latvia (LSS)       | 363  | 22.4 | 53.4 | 11.2 | 10.2 | 2.9                    | 53.4 | 0.0     | 1.2            | 1.7  | 55.8              | 51.0             |
| Lithuania          | 297  | 29.2 | 48.0 | 8.6  | 9.2  | 5.0                    | 48.0 | 0.0     | 1.8            | 3.2  | 53.7              | 42.6             |
| Macedonia, Rep. of | 497  | 36.0 | 37.9 | 12.3 | 8.4  | 5.5                    | 37.9 | 0.6     | 1.6            | 3.3  | 35.9              | 39.6             |
| Malaysia           | 696  | 21.1 | 60.5 | 8.8  | 7.9  | 1.7                    | 60.5 | 0.0     | 1.0            | 0.8  | 58.5              | 62.6             |
| Moldova            | 459  | 30.3 | 40.6 | 11.1 | 10.9 | 7.1                    | 40.6 | 0.0     | 3.5            | 3.6  | 38.7              | 42.9             |
| Morocco            | 641  | 45.6 | 20.2 | 14.3 | 8.0  | 11.8                   | 20.2 | 0.6     | 5.6            | 5.7  | 15.9              | 23.5             |
| Netherlands        | 378  | 15.9 | 77.4 | 1.6  | 5.0  | 0.1                    | 77.4 | 0.0     | 0.1            | 0.0  | 74.2              | 81.0             |
| New Zealand        | 452  | 21.4 | 62.0 | 8.8  | 6.7  | 1.1                    | 62.0 | 0.2     | 0.7            | 0.2  | 60.0              | 63.7             |
| Philippines        | 820  | 46.9 | 15.0 | 16.2 | 20.4 | 1.5                    | 15.0 | 0.2     | 0.8            | 0.4  | 14.2              | 16.0             |
| Romania            | 426  | 38.9 | 43.7 | 10.4 | 3.6  | 3.4                    | 43.7 | 0.4     | 0.9            | 2.0  | 44.0              | 43.4             |
| Russian Federation | 547  | 23.0 | 52.2 | 7.9  | 11.1 | 5.8                    | 52.2 | 0.0     | 4.1            | 1.8  | 45.9              | 59.6             |
| Singapore          | 616  | 11.3 | 77.6 | 6.2  | 4.4  | 0.5                    | 77.6 | 0.0     | 0.1            | 0.4  | 74.2              | 80.7             |
| Slovak Republic    | 437  | 24.1 | 59.6 | 8.2  | 6.0  | 2.1                    | 59.6 | 0.0     | 1.0            | 1.1  | 60.0              | 59.2             |
| Slovenia           | 376  | 25.3 | 59.8 | 5.5  | 9.1  | 0.2                    | 59.8 | 0.0     | 0.0            | 0.2  | 61.5              | 57.8             |
| South Africa       | 971  | 39.2 | 23.3 | 20.9 | 13.8 | 2.7                    | 23.3 | 0.3     | 1.0            | 1.4  | 25.0              | 21.4             |
| Thailand           | 717  | 24.9 | 47.8 | 11.0 | 15.1 | 1.2                    | 47.8 | 0.1     | 0.7            | 0.4  | 47.6              | 48.1             |
| Tunisia            | 626  | 32.8 | 38.6 | 13.3 | 11.3 | 4.0                    | 38.6 | 0.3     | 3.1            | 0.6  | 35.1              | 41.7             |
| Turkey             | 975  | 33.4 | 35.6 | 18.9 | 9.9  | 2.1                    | 35.6 | 0.0     | 0.8            | 1.3  | 34.7              | 36.3             |
| United States      | 1112 | 24.0 | 55.6 | 10.3 | 8.9  | 1.1                    | 55.6 | 0.2     | 0.5            | 0.5  | 50.8              | 60.5             |
| International Avg. | .    | 27.8 | 51.9 | 9.3  | 8.2  | 2.7                    | 51.9 | 0.1     | 1.4            | 1.2  | 50.2              | 53.5             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Earth Science  
 Label: Earth's plates over millions of years ( S022073 - J01 )  
 Item Type = MC Key = C

| COUNTRY            | N    | A    | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 494  | 2.5  | 4.4  | 89.3 | 3.7  | 0.1                    | 89.3 | 0.0     | 0.0            | 0.1  | 89.8              | 88.9             |
| Belgium (Flemish)  | 656  | 7.6  | 2.9  | 80.8 | 7.8  | 0.9                    | 80.8 | 0.0     | 0.0            | 0.9  | 81.1              | 80.5             |
| Bulgaria           | 413  | 9.3  | 2.0  | 80.8 | 5.9  | 2.0                    | 80.8 | 0.0     | 0.2            | 1.8  | 81.2              | 80.2             |
| Canada             | 1086 | 2.5  | 3.0  | 90.7 | 3.0  | 0.9                    | 90.7 | 0.0     | 0.2            | 0.7  | 91.3              | 90.1             |
| Chile              | 726  | 6.5  | 9.0  | 73.4 | 9.0  | 2.1                    | 73.4 | 0.0     | 0.0            | 2.1  | 75.3              | 71.5             |
| Chinese Taipei     | 725  | 6.1  | 2.8  | 87.5 | 3.4  | 0.2                    | 87.5 | 0.0     | 0.0            | 0.2  | 88.2              | 86.7             |
| Cyprus             | 387  | 5.8  | 10.5 | 68.3 | 13.0 | 2.5                    | 68.3 | 0.3     | 0.0            | 2.2  | 63.8              | 72.4             |
| Czech Republic     | 440  | 4.0  | 3.2  | 87.1 | 5.0  | 0.7                    | 87.1 | 0.0     | 0.0            | 0.7  | 82.9              | 91.9             |
| England            | 373  | 3.9  | 5.0  | 86.4 | 4.7  | 0.0                    | 86.4 | 0.0     | 0.0            | 0.0  | 82.7              | 90.3             |
| Finland            | 362  | 8.6  | 5.8  | 81.7 | 3.0  | 0.8                    | 81.7 | 0.0     | 0.0            | 0.8  | 82.9              | 80.7             |
| Hong Kong, SAR     | 649  | 7.6  | 1.9  | 85.3 | 4.7  | 0.4                    | 85.3 | 0.0     | 0.1            | 0.3  | 86.9              | 83.8             |
| Hungary            | 400  | 3.0  | 1.3  | 92.6 | 2.3  | 0.8                    | 92.6 | 0.0     | 0.0            | 0.8  | 94.4              | 90.5             |
| Indonesia          | 730  | 14.1 | 10.3 | 60.0 | 14.7 | 1.0                    | 60.0 | 0.0     | 0.0            | 1.0  | 62.1              | 57.6             |
| Iran, Islamic Rep. | 668  | 10.2 | 10.5 | 60.8 | 16.5 | 1.9                    | 60.8 | 0.0     | 0.0            | 1.9  | 68.4              | 55.5             |
| Israel             | 511  | 7.8  | 11.2 | 72.7 | 3.5  | 4.9                    | 72.7 | 0.0     | 0.2            | 4.7  | 67.9              | 78.8             |
| Italy              | 420  | 9.9  | 5.7  | 77.4 | 5.6  | 1.4                    | 77.4 | 0.0     | 0.0            | 1.4  | 78.9              | 75.9             |
| Japan              | 589  | 9.7  | 3.4  | 79.5 | 6.8  | 0.6                    | 79.5 | 0.2     | 0.0            | 0.4  | 78.5              | 80.3             |
| Jordan             | 635  | 18.6 | 14.6 | 56.3 | 7.5  | 3.1                    | 56.3 | 0.8     | 0.0            | 2.2  | 57.7              | 55.1             |
| Korea, Rep. of     | 765  | 11.3 | 4.1  | 83.0 | 1.4  | 0.2                    | 83.0 | 0.0     | 0.0            | 0.2  | 82.3              | 83.6             |
| Latvia (LSS)       | 357  | 4.0  | 2.5  | 80.4 | 12.3 | 0.8                    | 80.4 | 0.0     | 0.2            | 0.6  | 80.2              | 80.6             |
| Lithuania          | 288  | 12.8 | 2.5  | 80.0 | 3.6  | 1.1                    | 80.0 | 0.0     | 0.3            | 0.9  | 79.5              | 80.4             |
| Macedonia, Rep. of | 497  | 6.6  | 5.7  | 66.6 | 15.7 | 5.4                    | 66.6 | 0.2     | 0.1            | 5.1  | 67.6              | 65.5             |
| Malaysia           | 700  | 12.4 | 9.4  | 68.4 | 8.8  | 1.0                    | 68.4 | 0.0     | 0.0            | 1.0  | 72.6              | 63.5             |
| Moldova            | 450  | 4.7  | 7.1  | 79.5 | 7.1  | 1.6                    | 79.5 | 0.2     | 0.0            | 1.4  | 80.5              | 78.4             |
| Morocco            | 665  | 15.8 | 26.3 | 29.3 | 24.3 | 4.4                    | 29.3 | 0.0     | 0.2            | 4.2  | 30.1              | 28.7             |
| Netherlands        | 371  | 2.7  | 7.2  | 81.4 | 6.9  | 1.8                    | 81.4 | 0.0     | 0.1            | 1.7  | 82.1              | 81.1             |
| New Zealand        | 456  | 6.6  | 8.0  | 81.2 | 3.7  | 0.5                    | 81.2 | 0.0     | 0.0            | 0.5  | 81.9              | 80.6             |
| Philippines        | 836  | 14.4 | 26.1 | 55.2 | 3.7  | 0.6                    | 55.2 | 0.0     | 0.1            | 0.5  | 57.7              | 52.2             |
| Romania            | 435  | 8.7  | 4.8  | 75.5 | 7.7  | 3.3                    | 75.5 | 0.2     | 0.5            | 2.7  | 78.6              | 72.6             |
| Russian Federation | 527  | 11.1 | 3.7  | 79.6 | 4.2  | 1.3                    | 79.6 | 0.0     | 0.0            | 1.3  | 80.7              | 78.4             |
| Singapore          | 625  | 4.4  | 4.0  | 88.8 | 2.6  | 0.2                    | 88.8 | 0.0     | 0.0            | 0.2  | 90.4              | 87.2             |
| Slovak Republic    | 430  | 7.2  | 2.1  | 89.0 | 1.0  | 0.7                    | 89.0 | 0.0     | 0.0            | 0.7  | 91.9              | 86.2             |
| Slovenia           | 380  | 9.1  | 2.4  | 81.8 | 4.3  | 2.4                    | 81.8 | 0.2     | 0.0            | 2.1  | 81.5              | 82.1             |
| South Africa       | 1006 | 20.5 | 29.9 | 32.5 | 15.4 | 1.7                    | 32.5 | 0.3     | 0.1            | 1.3  | 31.8              | 33.2             |
| Thailand           | 712  | 14.3 | 7.3  | 75.2 | 2.8  | 0.4                    | 75.2 | 0.0     | 0.2            | 0.3  | 77.6              | 72.2             |
| Tunisia            | 627  | 14.8 | 12.4 | 51.9 | 15.8 | 5.1                    | 51.9 | 0.8     | 0.0            | 4.3  | 51.1              | 52.6             |
| Turkey             | 986  | 11.4 | 8.6  | 64.5 | 12.9 | 2.5                    | 64.5 | 0.0     | 0.1            | 2.4  | 69.9              | 60.4             |
| United States      | 1128 | 3.9  | 7.1  | 83.9 | 4.6  | 0.5                    | 83.9 | 0.0     | 0.0            | 0.5  | 83.9              | 83.9             |
| International Avg. | .    | 8.8  | 7.6  | 74.7 | 7.3  | 1.6                    | 74.7 | 0.1     | 0.1            | 1.4  | 75.4              | 74.1             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Life Science  
 Label: Feature shared by all insects ( S022099 - J02 )  
 Item Type = MC Key = A

| COUNTRY            | N    | A    | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 494  | 74.5 | 9.4  | 5.3  | 10.0 | 0.8                    | 74.5 | 0.3     | 0.0            | 0.5  | 68.3              | 80.0             |
| Belgium (Flemish)  | 656  | 46.1 | 24.9 | 6.3  | 21.0 | 1.8                    | 46.1 | 0.6     | 0.0            | 1.1  | 42.0              | 50.1             |
| Bulgaria           | 413  | 45.0 | 43.5 | 4.1  | 5.1  | 2.2                    | 45.0 | 0.7     | 0.2            | 1.3  | 42.1              | 48.4             |
| Canada             | 1086 | 80.9 | 7.5  | 4.9  | 6.2  | 0.4                    | 80.9 | 0.0     | 0.2            | 0.2  | 80.7              | 81.1             |
| Chile              | 726  | 31.6 | 20.4 | 8.2  | 39.1 | 0.7                    | 31.6 | 0.0     | 0.0            | 0.7  | 31.4              | 31.9             |
| Chinese Taipei     | 725  | 56.7 | 28.6 | 6.0  | 8.3  | 0.4                    | 56.7 | 0.0     | 0.0            | 0.4  | 55.5              | 57.9             |
| Cyprus             | 389  | 36.4 | 35.0 | 22.7 | 5.4  | 0.5                    | 36.4 | 0.3     | 0.0            | 0.3  | 27.4              | 44.3             |
| Czech Republic     | 440  | 43.0 | 38.0 | 4.9  | 13.7 | 0.4                    | 43.0 | 0.0     | 0.0            | 0.4  | 43.0              | 43.1             |
| England            | 373  | 77.9 | 10.7 | 4.8  | 6.0  | 0.6                    | 77.9 | 0.0     | 0.0            | 0.6  | 75.4              | 80.6             |
| Finland            | 362  | 54.9 | 26.9 | 5.5  | 11.3 | 1.4                    | 54.9 | 0.0     | 0.0            | 1.4  | 54.2              | 55.5             |
| Hong Kong, SAR     | 649  | 50.8 | 20.7 | 12.2 | 15.8 | 0.5                    | 50.8 | 0.0     | 0.1            | 0.3  | 54.0              | 47.7             |
| Hungary            | 400  | 65.7 | 27.9 | 3.8  | 1.6  | 1.0                    | 65.7 | 1.0     | 0.0            | 0.0  | 62.6              | 68.6             |
| Indonesia          | 730  | 39.2 | 27.1 | 10.2 | 22.6 | 0.9                    | 39.2 | 0.2     | 0.0            | 0.8  | 38.0              | 40.5             |
| Iran, Islamic Rep. | 668  | 25.4 | 37.0 | 19.2 | 17.4 | 1.0                    | 25.4 | 0.0     | 0.0            | 1.0  | 23.2              | 27.1             |
| Israel             | 511  | 50.2 | 18.4 | 11.9 | 16.6 | 3.0                    | 50.2 | 0.3     | 0.2            | 2.6  | 48.7              | 52.3             |
| Italy              | 420  | 52.8 | 29.2 | 11.8 | 5.7  | 0.5                    | 52.8 | 0.0     | 0.0            | 0.5  | 52.1              | 53.6             |
| Japan              | 589  | 71.9 | 16.8 | 6.2  | 4.3  | 0.8                    | 71.9 | 0.5     | 0.0            | 0.3  | 66.9              | 76.7             |
| Jordan             | 635  | 28.8 | 42.5 | 10.4 | 16.7 | 1.7                    | 28.8 | 0.5     | 0.0            | 1.2  | 27.9              | 29.6             |
| Korea, Rep. of     | 765  | 54.2 | 29.9 | 12.9 | 2.8  | 0.1                    | 54.2 | 0.1     | 0.0            | 0.0  | 47.0              | 61.5             |
| Latvia (LSS)       | 357  | 57.7 | 24.6 | 4.1  | 12.6 | 1.1                    | 57.7 | 0.5     | 0.2            | 0.4  | 51.1              | 65.5             |
| Lithuania          | 288  | 32.4 | 51.5 | 2.5  | 11.7 | 1.9                    | 32.4 | 0.0     | 0.3            | 1.7  | 34.1              | 30.6             |
| Macedonia, Rep. of | 497  | 36.2 | 30.9 | 10.6 | 20.6 | 1.7                    | 36.2 | 0.4     | 0.1            | 1.2  | 32.1              | 40.9             |
| Malaysia           | 700  | 44.8 | 12.1 | 9.3  | 32.9 | 0.9                    | 44.8 | 0.0     | 0.0            | 0.9  | 43.8              | 45.9             |
| Moldova            | 450  | 35.9 | 48.6 | 8.0  | 5.3  | 2.2                    | 35.9 | 1.4     | 0.0            | 0.8  | 32.7              | 39.3             |
| Morocco            | 665  | 18.2 | 35.5 | 23.2 | 18.1 | 5.0                    | 18.2 | 0.1     | 0.2            | 4.7  | 17.0              | 19.1             |
| Netherlands        | 371  | 75.2 | 15.2 | 4.7  | 3.9  | 1.1                    | 75.2 | 0.0     | 0.1            | 1.0  | 67.9              | 82.1             |
| New Zealand        | 456  | 75.8 | 10.7 | 6.9  | 5.5  | 1.1                    | 75.8 | 0.6     | 0.0            | 0.5  | 75.0              | 76.5             |
| Philippines        | 836  | 31.8 | 27.3 | 14.7 | 25.4 | 0.8                    | 31.8 | 0.0     | 0.1            | 0.7  | 34.1              | 29.1             |
| Romania            | 435  | 37.4 | 36.6 | 6.5  | 16.8 | 2.7                    | 37.4 | 1.3     | 0.5            | 0.9  | 37.1              | 37.7             |
| Russian Federation | 527  | 50.3 | 34.7 | 7.2  | 5.7  | 2.1                    | 50.3 | 1.1     | 0.0            | 1.0  | 51.2              | 49.2             |
| Singapore          | 625  | 61.7 | 18.0 | 6.8  | 13.0 | 0.5                    | 61.7 | 0.0     | 0.0            | 0.5  | 54.8              | 68.7             |
| Slovak Republic    | 430  | 28.6 | 40.2 | 12.0 | 18.2 | 0.9                    | 28.6 | 0.4     | 0.0            | 0.6  | 29.7              | 27.6             |
| Slovenia           | 380  | 48.7 | 36.6 | 3.3  | 9.6  | 1.8                    | 48.7 | 0.3     | 0.0            | 1.4  | 43.8              | 53.7             |
| South Africa       | 1006 | 41.2 | 27.0 | 19.3 | 11.2 | 1.2                    | 41.2 | 0.4     | 0.1            | 0.7  | 42.7              | 39.5             |
| Thailand           | 712  | 36.1 | 41.3 | 9.6  | 12.8 | 0.3                    | 36.1 | 0.0     | 0.2            | 0.1  | 37.1              | 34.8             |
| Tunisia            | 627  | 18.8 | 36.0 | 11.2 | 22.1 | 11.9                   | 18.8 | 6.0     | 0.0            | 5.9  | 19.9              | 17.8             |
| Turkey             | 986  | 58.0 | 16.8 | 8.5  | 15.7 | 1.0                    | 58.0 | 0.1     | 0.2            | 0.6  | 61.9              | 55.1             |
| United States      | 1128 | 78.1 | 9.6  | 5.4  | 6.5  | 0.5                    | 78.1 | 0.0     | 0.0            | 0.4  | 75.4              | 80.7             |
| International Avg. | .    | 48.8 | 27.6 | 9.1  | 13.1 | 1.5                    | 48.8 | 0.5     | 0.1            | 1.0  | 46.9              | 50.6             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Chemistry  
 Label: Compounds, molecules and atoms ( S022174 - J03 )  
 Item Type = SA Key = X

| COUNTRY            | N    | 10   | 18  | 70   | 71   | 79   | 99   | V1   | NOT   | OMIT | 1.GIRL  | 2.BOY   |
|--------------------|------|------|-----|------|------|------|------|------|-------|------|---------|---------|
|                    |      |      |     |      |      |      |      |      | REACH |      | % Right | % Right |
| Australia          | 494  | 53.0 | 0.0 | 18.5 | 4.7  | 22.2 | 1.7  | 53.0 | 0.0   | 1.7  | 49.5    | 56.1    |
| Belgium (Flemish)  | 656  | 41.1 | 0.0 | 32.6 | 9.2  | 15.7 | 1.3  | 41.1 | 0.0   | 1.3  | 37.7    | 44.6    |
| Bulgaria           | 412  | 66.9 | 0.0 | 14.7 | 6.6  | 6.3  | 5.5  | 66.9 | 0.2   | 5.3  | 67.9    | 65.6    |
| Canada             | 1086 | 51.1 | 0.0 | 18.2 | 9.0  | 20.7 | 1.0  | 51.1 | 0.2   | 0.8  | 50.2    | 52.0    |
| Chile              | 726  | 38.8 | 0.0 | 28.3 | 1.6  | 27.2 | 4.1  | 38.8 | 0.0   | 4.1  | 39.8    | 37.8    |
| Chinese Taipei     | 725  | 56.8 | 0.0 | 20.0 | 8.4  | 13.0 | 1.7  | 56.8 | 0.0   | 1.7  | 59.1    | 54.5    |
| Cyprus             | 388  | 29.4 | 0.0 | 13.9 | 13.3 | 35.2 | 8.3  | 29.4 | 0.0   | 8.3  | 23.2    | 34.8    |
| Czech Republic     | 440  | 59.7 | 0.0 | 24.9 | 5.3  | 6.4  | 3.7  | 59.7 | 0.0   | 3.7  | 56.9    | 62.8    |
| England            | 373  | 48.8 | 0.0 | 19.1 | 8.4  | 22.6 | 1.0  | 48.8 | 0.0   | 1.0  | 41.1    | 56.8    |
| Finland            | 362  | 44.4 | 0.0 | 19.5 | 13.1 | 21.3 | 1.8  | 44.4 | 0.0   | 1.8  | 44.8    | 44.0    |
| Hong Kong, SAR     | 648  | 38.4 | 0.0 | 27.4 | 8.2  | 20.7 | 5.4  | 38.4 | 0.1   | 5.2  | 36.9    | 39.8    |
| Hungary            | 400  | 46.0 | 0.0 | 5.8  | 0.8  | 43.8 | 3.6  | 46.0 | 0.0   | 3.6  | 50.2    | 41.1    |
| Indonesia          | 730  | 30.0 | 0.0 | 8.0  | 15.6 | 40.8 | 5.6  | 30.0 | 0.0   | 5.6  | 31.9    | 27.8    |
| Iran, Islamic Rep. | 668  | 46.3 | 0.0 | 15.3 | 14.5 | 19.1 | 4.7  | 46.3 | 0.0   | 4.7  | 43.5    | 48.3    |
| Israel             | 511  | 42.6 | 0.0 | 14.3 | 9.4  | 25.5 | 8.2  | 42.6 | 0.2   | 8.1  | 41.0    | 44.8    |
| Italy              | 420  | 54.8 | 0.0 | 19.4 | 5.1  | 17.8 | 2.9  | 54.8 | 0.0   | 2.9  | 52.4    | 57.1    |
| Japan              | 589  | 63.3 | 0.0 | 16.1 | 2.8  | 14.0 | 3.8  | 63.3 | 0.0   | 3.8  | 62.4    | 64.2    |
| Jordan             | 635  | 36.2 | 0.0 | 8.0  | 12.3 | 37.2 | 6.3  | 36.2 | 0.0   | 6.3  | 41.9    | 31.4    |
| Korea, Rep. of     | 764  | 60.4 | 0.0 | 33.5 | 0.3  | 4.9  | 1.0  | 60.4 | 0.0   | 1.0  | 55.9    | 65.0    |
| Latvia (LSS)       | 357  | 52.3 | 0.0 | 15.2 | 14.5 | 15.3 | 2.7  | 52.3 | 0.2   | 2.5  | 50.9    | 54.0    |
| Lithuania          | 288  | 54.2 | 0.0 | 19.9 | 8.7  | 13.0 | 4.2  | 54.2 | 0.3   | 3.9  | 53.7    | 54.8    |
| Macedonia, Rep. of | 497  | 56.2 | 0.0 | 13.6 | 3.9  | 11.3 | 15.1 | 56.2 | 0.1   | 15.0 | 60.6    | 51.2    |
| Malaysia           | 700  | 53.1 | 0.0 | 20.3 | 9.3  | 15.8 | 1.5  | 53.1 | 0.0   | 1.5  | 55.1    | 50.9    |
| Moldova            | 450  | 48.0 | 0.0 | 6.3  | 4.7  | 27.9 | 13.1 | 48.0 | 0.2   | 12.9 | 53.4    | 42.1    |
| Morocco            | 665  | 15.0 | 0.0 | 11.8 | 8.5  | 49.4 | 15.3 | 15.0 | 0.2   | 15.1 | 15.1    | 15.0    |
| Netherlands        | 371  | 32.1 | 9.6 | 21.6 | 11.0 | 23.9 | 1.8  | 41.7 | 0.1   | 1.6  | 33.9    | 49.4    |
| New Zealand        | 456  | 41.1 | 0.0 | 14.6 | 10.1 | 32.3 | 2.0  | 41.1 | 0.0   | 2.0  | 37.7    | 44.1    |
| Philippines        | 836  | 40.8 | 0.0 | 16.1 | 10.1 | 27.1 | 6.0  | 40.8 | 0.1   | 5.8  | 47.1    | 33.4    |
| Romania            | 434  | 33.4 | 0.0 | 9.5  | 22.5 | 23.9 | 10.7 | 33.4 | 0.5   | 10.2 | 40.2    | 27.0    |
| Russian Federation | 527  | 61.5 | 0.0 | 10.1 | 9.7  | 13.1 | 5.6  | 61.5 | 0.0   | 5.6  | 65.1    | 57.4    |
| Singapore          | 625  | 69.4 | 0.0 | 7.9  | 5.7  | 16.6 | 0.5  | 69.4 | 0.0   | 0.5  | 70.2    | 68.6    |
| Slovak Republic    | 430  | 65.3 | 0.0 | 22.4 | 3.0  | 6.9  | 2.3  | 65.3 | 0.0   | 2.3  | 62.4    | 68.2    |
| Slovenia           | 380  | 53.7 | 0.0 | 12.2 | 12.6 | 18.3 | 3.2  | 53.7 | 0.0   | 3.2  | 54.7    | 52.8    |
| South Africa       | 1006 | 10.2 | 0.0 | 12.5 | 13.0 | 56.9 | 7.5  | 10.2 | 0.1   | 7.3  | 7.5     | 13.2    |
| Thailand           | 712  | 29.9 | 0.0 | 19.7 | 17.8 | 30.1 | 2.4  | 29.9 | 0.2   | 2.3  | 28.5    | 31.8    |
| Tunisia            | 622  | 27.1 | 0.0 | 31.9 | 4.3  | 35.7 | 0.9  | 27.1 | 0.0   | 0.9  | 27.7    | 26.6    |
| Turkey             | 986  | 22.9 | 0.0 | 20.7 | 16.9 | 30.3 | 9.2  | 22.9 | 0.2   | 9.0  | 24.6    | 21.7    |
| United States      | 1128 | 50.9 | 0.0 | 16.0 | 9.5  | 21.3 | 2.2  | 50.9 | 0.0   | 2.2  | 48.7    | 53.1    |
| International Avg. | .    | 45.4 | 0.3 | 17.4 | 9.1  | 23.3 | 4.7  | 45.7 | 0.1   | 4.6  | 45.4    | 45.9    |

V1 = % Scoring 1 or better V2 = % Scoring 2 or better V3 = % Scoring 3 or better  
 Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.  
 Because of missing gender information, some totals may appear inconsistent

Science: Physics  
 Label: Evaporation rate by surface area ( S022009 - J04 )  
 Item Type = MC Key = C

| COUNTRY            | N    | A   | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|-----|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 494  | 3.1 | 2.1  | 90.4 | 4.4  | 0.1                    | 90.4 | 0.0     | 0.0            | 0.1  | 91.0              | 89.7             |
| Belgium (Flemish)  | 656  | 1.4 | 11.2 | 84.1 | 1.7  | 1.5                    | 84.1 | 0.1     | 0.0            | 1.4  | 91.3              | 77.0             |
| Bulgaria           | 413  | 3.4 | 1.4  | 92.8 | 1.6  | 0.9                    | 92.8 | 0.0     | 0.2            | 0.6  | 95.2              | 90.4             |
| Canada             | 1086 | 3.9 | 2.1  | 91.1 | 2.6  | 0.3                    | 91.1 | 0.0     | 0.2            | 0.1  | 92.0              | 90.3             |
| Chile              | 726  | 8.4 | 10.0 | 71.8 | 9.5  | 0.2                    | 71.8 | 0.0     | 0.0            | 0.2  | 68.8              | 74.9             |
| Chinese Taipei     | 725  | 1.3 | 3.6  | 92.8 | 1.4  | 0.9                    | 92.8 | 0.3     | 0.0            | 0.6  | 93.8              | 91.8             |
| Cyprus             | 389  | 3.2 | 3.0  | 88.3 | 4.9  | 0.5                    | 88.3 | 0.3     | 0.0            | 0.2  | 87.5              | 89.0             |
| Czech Republic     | 440  | 3.0 | 1.3  | 94.2 | 1.6  | 0.0                    | 94.2 | 0.0     | 0.0            | 0.0  | 93.0              | 95.6             |
| England            | 373  | 1.2 | 3.7  | 91.9 | 2.7  | 0.5                    | 91.9 | 0.2     | 0.0            | 0.3  | 91.3              | 92.7             |
| Finland            | 362  | 3.4 | 6.2  | 86.3 | 2.0  | 2.1                    | 86.3 | 0.0     | 0.0            | 2.1  | 85.4              | 87.2             |
| Hong Kong, SAR     | 649  | 1.4 | 3.2  | 93.5 | 1.7  | 0.1                    | 93.5 | 0.0     | 0.1            | 0.0  | 95.0              | 92.0             |
| Hungary            | 400  | 0.6 | 2.9  | 95.4 | 0.7  | 0.4                    | 95.4 | 0.4     | 0.0            | 0.0  | 94.8              | 96.0             |
| Indonesia          | 729  | 4.5 | 14.2 | 75.4 | 5.5  | 0.5                    | 75.4 | 0.0     | 0.0            | 0.5  | 72.4              | 78.8             |
| Iran, Islamic Rep. | 668  | 4.4 | 21.1 | 68.5 | 4.7  | 1.3                    | 68.5 | 0.0     | 0.0            | 1.3  | 60.7              | 74.1             |
| Israel             | 511  | 2.1 | 3.4  | 89.4 | 4.6  | 0.6                    | 89.4 | 0.1     | 0.2            | 0.3  | 86.2              | 93.2             |
| Italy              | 420  | 4.2 | 20.3 | 70.3 | 3.7  | 1.4                    | 70.3 | 0.0     | 0.0            | 1.4  | 67.7              | 72.8             |
| Japan              | 589  | 1.7 | 3.9  | 93.6 | 0.8  | 0.0                    | 93.6 | 0.0     | 0.0            | 0.0  | 91.6              | 95.5             |
| Jordan             | 634  | 2.0 | 6.3  | 86.6 | 4.4  | 0.7                    | 86.6 | 0.5     | 0.0            | 0.1  | 88.5              | 84.9             |
| Korea, Rep. of     | 765  | 0.7 | 3.0  | 95.1 | 1.2  | 0.0                    | 95.1 | 0.0     | 0.0            | 0.0  | 94.1              | 96.1             |
| Latvia (LSS)       | 357  | 3.4 | 2.2  | 90.2 | 3.6  | 0.7                    | 90.2 | 0.5     | 0.2            | 0.0  | 91.0              | 89.2             |
| Lithuania          | 288  | 3.0 | 1.3  | 89.7 | 4.0  | 2.0                    | 89.7 | 0.0     | 0.3            | 1.7  | 88.5              | 91.1             |
| Macedonia, Rep. of | 497  | 4.2 | 3.8  | 82.9 | 5.7  | 3.4                    | 82.9 | 0.8     | 0.1            | 2.5  | 83.0              | 82.7             |
| Malaysia           | 700  | 2.3 | 2.8  | 92.8 | 2.0  | 0.0                    | 92.8 | 0.0     | 0.0            | 0.0  | 93.5              | 92.0             |
| Moldova            | 450  | 0.3 | 3.3  | 92.9 | 1.5  | 2.0                    | 92.9 | 0.7     | 0.4            | 0.8  | 91.5              | 94.4             |
| Morocco            | 665  | 8.9 | 29.1 | 45.4 | 11.0 | 5.6                    | 45.4 | 0.1     | 0.5            | 5.0  | 41.3              | 48.2             |
| Netherlands        | 371  | 2.8 | 1.8  | 88.9 | 5.0  | 1.4                    | 88.9 | 0.0     | 0.1            | 1.3  | 87.6              | 90.2             |
| New Zealand        | 455  | 3.4 | 3.7  | 88.0 | 4.3  | 0.6                    | 88.0 | 0.0     | 0.0            | 0.6  | 87.6              | 88.4             |
| Philippines        | 836  | 6.5 | 17.7 | 59.9 | 15.1 | 0.9                    | 59.9 | 0.0     | 0.3            | 0.6  | 60.0              | 59.7             |
| Romania            | 435  | 1.8 | 5.1  | 88.4 | 3.0  | 1.7                    | 88.4 | 0.5     | 0.5            | 0.8  | 90.6              | 86.3             |
| Russian Federation | 527  | 0.7 | 2.4  | 94.5 | 0.6  | 1.8                    | 94.5 | 0.0     | 0.0            | 1.8  | 95.0              | 94.0             |
| Singapore          | 625  | 0.2 | 1.0  | 98.0 | 0.8  | 0.0                    | 98.0 | 0.0     | 0.0            | 0.0  | 97.6              | 98.3             |
| Slovak Republic    | 430  | 0.9 | 3.6  | 93.6 | 1.2  | 0.7                    | 93.6 | 0.0     | 0.0            | 0.7  | 94.1              | 93.1             |
| Slovenia           | 380  | 1.8 | 10.7 | 83.0 | 3.7  | 0.8                    | 83.0 | 0.0     | 0.0            | 0.8  | 84.3              | 81.8             |
| South Africa       | 1006 | 8.2 | 13.3 | 53.3 | 23.6 | 1.5                    | 53.3 | 0.2     | 0.1            | 1.2  | 51.3              | 55.7             |
| Thailand           | 712  | 2.7 | 9.8  | 84.7 | 2.7  | 0.2                    | 84.7 | 0.0     | 0.2            | 0.0  | 82.1              | 87.9             |
| Tunisia            | 627  | 2.8 | 14.6 | 74.7 | 4.9  | 2.9                    | 74.7 | 2.3     | 0.0            | 0.6  | 71.5              | 77.8             |
| Turkey             | 986  | 7.5 | 7.6  | 73.9 | 10.5 | 0.5                    | 73.9 | 0.1     | 0.2            | 0.2  | 72.1              | 75.2             |
| United States      | 1128 | 4.2 | 4.5  | 83.9 | 6.9  | 0.5                    | 83.9 | 0.0     | 0.0            | 0.5  | 85.1              | 82.8             |
| International Avg. | .    | 3.1 | 6.9  | 84.5 | 4.5  | 1.0                    | 84.5 | 0.2     | 0.1            | 0.8  | 83.9              | 85.0             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent



Science: Physics  
 Label: Gravity acting on rocket ( S022012 - J05 )  
 Item Type = MC Key = D

| COUNTRY            | N    | A    | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 494  | 28.5 | 9.9  | 16.2 | 45.1 | 0.3                    | 45.1 | 0.2     | 0.0            | 0.1  | 39.4              | 50.3             |
| Belgium (Flemish)  | 656  | 33.3 | 18.3 | 19.2 | 28.7 | 0.5                    | 28.7 | 0.2     | 0.0            | 0.3  | 21.4              | 36.1             |
| Bulgaria           | 413  | 33.8 | 10.1 | 17.6 | 34.5 | 4.0                    | 34.5 | 0.5     | 0.2            | 3.3  | 25.6              | 43.1             |
| Canada             | 1086 | 31.9 | 5.8  | 17.0 | 45.0 | 0.3                    | 45.0 | 0.1     | 0.2            | 0.0  | 40.7              | 49.1             |
| Chile              | 726  | 37.7 | 19.5 | 19.7 | 22.9 | 0.3                    | 22.9 | 0.0     | 0.0            | 0.3  | 21.5              | 24.3             |
| Chinese Taipei     | 725  | 19.4 | 16.5 | 15.5 | 48.5 | 0.1                    | 48.5 | 0.0     | 0.0            | 0.1  | 47.1              | 49.9             |
| Cyprus             | 388  | 14.2 | 21.2 | 33.5 | 29.7 | 1.4                    | 29.7 | 0.0     | 0.0            | 1.4  | 21.4              | 36.9             |
| Czech Republic     | 440  | 21.5 | 4.7  | 7.9  | 64.8 | 1.1                    | 64.8 | 0.4     | 0.0            | 0.7  | 56.6              | 74.1             |
| England            | 373  | 33.7 | 6.5  | 16.3 | 43.3 | 0.2                    | 43.3 | 0.0     | 0.0            | 0.2  | 32.1              | 54.9             |
| Finland            | 362  | 21.7 | 7.1  | 18.4 | 52.6 | 0.2                    | 52.6 | 0.0     | 0.0            | 0.2  | 43.6              | 60.5             |
| Hong Kong, SAR     | 649  | 22.1 | 24.9 | 28.6 | 23.9 | 0.5                    | 23.9 | 0.0     | 0.1            | 0.3  | 22.1              | 25.7             |
| Hungary            | 400  | 19.3 | 3.6  | 11.9 | 64.8 | 0.4                    | 64.8 | 0.2     | 0.0            | 0.2  | 60.4              | 69.5             |
| Indonesia          | .    | .    | .    | .    | .    | .                      | .    | .       | .              | .    | .                 | .                |
| Iran, Islamic Rep. | 668  | 40.5 | 13.0 | 16.2 | 30.0 | 0.3                    | 30.0 | 0.0     | 0.0            | 0.3  | 26.4              | 32.5             |
| Israel             | 511  | 40.0 | 17.1 | 14.9 | 26.2 | 1.7                    | 26.2 | 0.2     | 0.2            | 1.4  | 17.4              | 37.0             |
| Italy              | 420  | 44.7 | 12.7 | 16.7 | 24.7 | 1.2                    | 24.7 | 0.0     | 0.0            | 1.2  | 19.2              | 29.8             |
| Japan              | 589  | 25.7 | 12.9 | 21.4 | 40.0 | 0.0                    | 40.0 | 0.0     | 0.0            | 0.0  | 31.0              | 48.5             |
| Jordan             | 634  | 36.3 | 15.9 | 10.8 | 35.9 | 1.2                    | 35.9 | 0.8     | 0.0            | 0.3  | 34.2              | 37.3             |
| Korea, Rep. of     | 764  | 32.6 | 12.1 | 26.3 | 28.9 | 0.1                    | 28.9 | 0.0     | 0.0            | 0.1  | 20.1              | 37.7             |
| Latvia (LSS)       | 357  | 24.1 | 20.4 | 30.3 | 23.6 | 1.5                    | 23.6 | 0.6     | 0.2            | 0.7  | 18.8              | 29.2             |
| Lithuania          | 288  | 29.3 | 10.1 | 9.5  | 48.4 | 2.7                    | 48.4 | 0.0     | 0.3            | 2.4  | 43.8              | 53.5             |
| Macedonia, Rep. of | 497  | 31.6 | 26.1 | 18.8 | 19.2 | 4.3                    | 19.2 | 0.7     | 0.1            | 3.5  | 17.8              | 20.8             |
| Malaysia           | 700  | 41.4 | 12.4 | 24.7 | 21.1 | 0.4                    | 21.1 | 0.2     | 0.0            | 0.2  | 15.6              | 27.4             |
| Moldova            | 450  | 29.4 | 13.8 | 13.4 | 41.7 | 1.8                    | 41.7 | 0.0     | 0.4            | 1.4  | 40.7              | 42.7             |
| Morocco            | 665  | 20.6 | 28.3 | 28.8 | 16.7 | 5.7                    | 16.7 | 0.0     | 0.6            | 5.0  | 15.4              | 17.4             |
| Netherlands        | 371  | 29.8 | 7.8  | 23.1 | 38.8 | 0.5                    | 38.8 | 0.2     | 0.1            | 0.2  | 34.1              | 43.6             |
| New Zealand        | 456  | 33.1 | 8.5  | 19.1 | 39.0 | 0.4                    | 39.0 | 0.2     | 0.0            | 0.2  | 37.9              | 40.1             |
| Philippines        | 836  | 33.3 | 21.0 | 18.3 | 27.1 | 0.4                    | 27.1 | 0.0     | 0.3            | 0.1  | 29.5              | 24.2             |
| Romania            | 435  | 34.7 | 19.1 | 14.7 | 29.4 | 2.0                    | 29.4 | 0.0     | 0.5            | 1.5  | 31.6              | 27.4             |
| Russian Federation | 526  | 30.4 | 9.6  | 13.4 | 45.5 | 1.1                    | 45.5 | 0.4     | 0.0            | 0.7  | 38.5              | 53.4             |
| Singapore          | 625  | 25.2 | 8.7  | 16.7 | 49.2 | 0.2                    | 49.2 | 0.0     | 0.0            | 0.2  | 42.9              | 55.7             |
| Slovak Republic    | 430  | 22.4 | 2.4  | 6.9  | 68.3 | 0.0                    | 68.3 | 0.0     | 0.0            | 0.0  | 58.7              | 77.6             |
| Slovenia           | 380  | 25.9 | 11.0 | 15.7 | 45.8 | 1.6                    | 45.8 | 0.2     | 0.0            | 1.4  | 38.1              | 53.8             |
| South Africa       | 1006 | 42.2 | 24.6 | 16.8 | 15.3 | 1.1                    | 15.3 | 0.3     | 0.1            | 0.6  | 17.2              | 13.1             |
| Thailand           | 712  | 37.6 | 9.3  | 22.3 | 30.5 | 0.3                    | 30.5 | 0.0     | 0.2            | 0.1  | 28.8              | 32.6             |
| Tunisia            | 620  | 49.3 | 13.0 | 16.9 | 18.6 | 2.1                    | 18.6 | 1.1     | 0.0            | 1.0  | 15.6              | 21.4             |
| Turkey             | 986  | 51.7 | 12.0 | 13.0 | 22.0 | 1.4                    | 22.0 | 0.0     | 0.2            | 1.2  | 19.5              | 23.9             |
| United States      | 1128 | 30.7 | 6.0  | 17.2 | 45.7 | 0.4                    | 45.7 | 0.1     | 0.0            | 0.3  | 38.9              | 52.3             |
| International Avg. | .    | 31.3 | 13.4 | 18.0 | 36.1 | 1.1                    | 36.1 | 0.2     | 0.1            | 0.8  | 31.4              | 40.7             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Earth Science  
 Label: Factor explaining seasons on Earth ( S022082 - J06 )  
 Item Type = MC Key = C

| COUNTRY            | N    | A    | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 494  | 49.9 | 6.4  | 41.0 | 2.2  | 0.5                    | 41.0 | 0.2     | 0.0            | 0.3  | 37.9              | 43.8             |
| Belgium (Flemish)  | 656  | 54.0 | 18.9 | 22.2 | 4.2  | 0.7                    | 22.2 | 0.3     | 0.0            | 0.4  | 16.8              | 27.6             |
| Bulgaria           | 413  | 52.9 | 9.5  | 33.6 | 0.8  | 3.2                    | 33.6 | 2.2     | 0.2            | 0.7  | 30.4              | 36.3             |
| Canada             | 1086 | 53.6 | 6.4  | 38.4 | 0.9  | 0.7                    | 38.4 | 0.3     | 0.2            | 0.2  | 31.5              | 44.8             |
| Chile              | 726  | 71.1 | 10.7 | 14.7 | 2.6  | 1.0                    | 14.7 | 0.0     | 0.0            | 1.0  | 8.6               | 20.6             |
| Chinese Taipei     | 725  | 44.4 | 12.8 | 39.9 | 2.5  | 0.4                    | 39.9 | 0.1     | 0.0            | 0.3  | 34.9              | 44.8             |
| Cyprus             | 389  | 57.4 | 11.7 | 24.1 | 4.9  | 1.8                    | 24.1 | 0.7     | 0.0            | 1.1  | 19.6              | 27.7             |
| Czech Republic     | 440  | 61.3 | 9.0  | 28.5 | 1.1  | 0.1                    | 28.5 | 0.0     | 0.0            | 0.0  | 24.0              | 33.6             |
| England            | 373  | 43.7 | 8.8  | 44.2 | 1.4  | 1.9                    | 44.2 | 1.5     | 0.0            | 0.4  | 39.1              | 49.5             |
| Finland            | 362  | 54.0 | 8.9  | 34.2 | 0.0  | 2.9                    | 34.2 | 0.0     | 0.0            | 2.9  | 28.5              | 39.2             |
| Hong Kong, SAR     | 649  | 42.9 | 5.9  | 48.2 | 2.8  | 0.1                    | 48.2 | 0.0     | 0.1            | 0.0  | 46.7              | 49.7             |
| Hungary            | 400  | 65.9 | 9.1  | 22.5 | 0.5  | 2.0                    | 22.5 | 0.8     | 0.0            | 1.1  | 17.7              | 28.3             |
| Indonesia          | 729  | 73.3 | 16.1 | 7.4  | 3.0  | 0.3                    | 7.4  | 0.0     | 0.0            | 0.3  | 8.4               | 6.2              |
| Iran, Islamic Rep. | 668  | 67.3 | 14.6 | 13.5 | 3.9  | 0.8                    | 13.5 | 0.0     | 0.0            | 0.8  | 6.4               | 18.5             |
| Israel             | 511  | 46.8 | 20.1 | 28.3 | 2.1  | 2.8                    | 28.3 | 0.0     | 0.2            | 2.6  | 26.7              | 30.3             |
| Italy              | 420  | 45.0 | 8.1  | 43.6 | 1.4  | 2.0                    | 43.6 | 0.0     | 0.0            | 2.0  | 41.7              | 45.3             |
| Japan              | 589  | 37.4 | 8.8  | 51.7 | 1.1  | 1.0                    | 51.7 | 0.9     | 0.0            | 0.1  | 47.3              | 55.7             |
| Jordan             | 635  | 55.7 | 20.7 | 17.1 | 4.3  | 2.1                    | 17.1 | 0.6     | 0.0            | 1.5  | 16.9              | 17.4             |
| Korea, Rep. of     | 765  | 64.0 | 4.3  | 30.1 | 1.2  | 0.4                    | 30.1 | 0.0     | 0.0            | 0.4  | 28.4              | 31.8             |
| Latvia (LSS)       | 357  | 72.5 | 11.3 | 13.3 | 1.6  | 1.3                    | 13.3 | 0.6     | 0.2            | 0.5  | 10.5              | 16.6             |
| Lithuania          | 288  | 65.7 | 6.2  | 25.9 | 0.8  | 1.3                    | 25.9 | 0.0     | 0.3            | 1.1  | 20.5              | 32.0             |
| Macedonia, Rep. of | 497  | 69.1 | 14.8 | 11.7 | 1.5  | 2.8                    | 11.7 | 0.2     | 0.1            | 2.5  | 8.3               | 15.5             |
| Malaysia           | 700  | 65.6 | 6.3  | 25.2 | 1.9  | 1.0                    | 25.2 | 0.0     | 0.0            | 1.0  | 23.0              | 27.8             |
| Moldova            | 450  | 66.1 | 8.6  | 21.6 | 1.6  | 2.0                    | 21.6 | 0.5     | 0.4            | 1.1  | 19.7              | 23.7             |
| Morocco            | 664  | 43.5 | 17.3 | 17.9 | 15.2 | 6.1                    | 17.9 | 0.1     | 0.6            | 5.3  | 13.8              | 20.6             |
| Netherlands        | 371  | 55.0 | 15.0 | 27.2 | 2.2  | 0.5                    | 27.2 | 0.0     | 0.1            | 0.4  | 25.4              | 29.1             |
| New Zealand        | 456  | 45.4 | 13.1 | 38.1 | 2.5  | 0.9                    | 38.1 | 0.5     | 0.0            | 0.4  | 34.6              | 41.3             |
| Philippines        | 836  | 70.0 | 12.3 | 12.8 | 4.2  | 0.6                    | 12.8 | 0.0     | 0.3            | 0.4  | 13.1              | 12.5             |
| Romania            | 435  | 62.1 | 15.8 | 16.7 | 1.5  | 4.0                    | 16.7 | 2.1     | 0.5            | 1.4  | 14.7              | 18.6             |
| Russian Federation | 527  | 61.6 | 5.0  | 30.1 | 0.4  | 3.0                    | 30.1 | 1.2     | 0.0            | 1.8  | 29.8              | 30.3             |
| Singapore          | 625  | 73.3 | 6.1  | 18.2 | 2.4  | 0.0                    | 18.2 | 0.0     | 0.0            | 0.0  | 17.0              | 19.4             |
| Slovak Republic    | 430  | 60.4 | 7.2  | 30.1 | 0.8  | 1.5                    | 30.1 | 0.5     | 0.0            | 1.0  | 26.1              | 34.0             |
| Slovenia           | 380  | 61.4 | 6.4  | 29.4 | 1.0  | 1.8                    | 29.4 | 1.1     | 0.0            | 0.7  | 24.5              | 34.3             |
| South Africa       | 1006 | 57.8 | 19.2 | 15.3 | 6.3  | 1.3                    | 15.3 | 0.5     | 0.1            | 0.7  | 16.8              | 13.7             |
| Thailand           | 712  | 53.4 | 22.1 | 21.1 | 2.8  | 0.6                    | 21.1 | 0.0     | 0.2            | 0.4  | 18.6              | 24.2             |
| Tunisia            | 627  | 58.1 | 19.7 | 13.0 | 4.3  | 4.8                    | 13.0 | 4.0     | 0.0            | 0.8  | 8.6               | 17.1             |
| Turkey             | 986  | 59.7 | 17.0 | 18.2 | 3.9  | 1.1                    | 18.2 | 0.0     | 0.2            | 0.9  | 17.1              | 19.1             |
| United States      | 1128 | 53.2 | 8.0  | 36.8 | 1.7  | 0.3                    | 36.8 | 0.1     | 0.0            | 0.2  | 35.1              | 38.5             |
| International Avg. | .    | 57.8 | 11.6 | 26.5 | 2.6  | 1.6                    | 26.5 | 0.5     | 0.1            | 1.0  | 23.4              | 29.5             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Life Science  
 Label: Reason for protein in diet ( S022094 - J07 )  
 Item Type = MC Key = C

| COUNTRY            | N    | A    | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 494  | 51.0 | 7.8  | 27.4 | 13.4 | 0.5                    | 27.4 | 0.1     | 0.0            | 0.4  | 33.9              | 21.6             |
| Belgium (Flemish)  | 656  | 31.1 | 5.3  | 53.5 | 9.6  | 0.5                    | 53.5 | 0.4     | 0.0            | 0.1  | 52.3              | 54.8             |
| Bulgaria           | 413  | 54.7 | 4.5  | 26.3 | 11.9 | 2.6                    | 26.3 | 0.3     | 0.2            | 2.0  | 28.0              | 24.8             |
| Canada             | 1086 | 58.3 | 5.7  | 21.5 | 13.9 | 0.7                    | 21.5 | 0.0     | 0.2            | 0.5  | 19.2              | 23.7             |
| Chile              | 726  | 45.0 | 5.5  | 23.7 | 24.9 | 0.9                    | 23.7 | 0.0     | 0.0            | 0.9  | 22.4              | 24.9             |
| Chinese Taipei     | 725  | 20.6 | 6.6  | 62.0 | 10.4 | 0.4                    | 62.0 | 0.0     | 0.0            | 0.4  | 62.8              | 61.1             |
| Cyprus             | 389  | 38.6 | 16.3 | 34.0 | 10.9 | 0.2                    | 34.0 | 0.2     | 0.0            | 0.0  | 32.6              | 35.3             |
| Czech Republic     | 440  | 20.9 | 15.4 | 46.7 | 16.1 | 1.0                    | 46.7 | 0.0     | 0.0            | 1.0  | 41.8              | 52.2             |
| England            | 373  | 42.9 | 11.0 | 32.7 | 11.0 | 2.4                    | 32.7 | 0.7     | 0.0            | 1.8  | 28.6              | 36.9             |
| Finland            | 362  | 19.0 | 7.4  | 61.0 | 10.9 | 1.6                    | 61.0 | 0.0     | 0.0            | 1.6  | 64.9              | 57.5             |
| Hong Kong, SAR     | 649  | 17.1 | 11.0 | 52.6 | 19.0 | 0.3                    | 52.6 | 0.0     | 0.1            | 0.2  | 52.3              | 52.9             |
| Hungary            | 400  | 21.2 | 10.0 | 44.0 | 20.8 | 4.0                    | 44.0 | 1.6     | 0.0            | 2.4  | 50.4              | 37.5             |
| Indonesia          | 730  | 42.3 | 1.4  | 48.8 | 6.9  | 0.5                    | 48.8 | 0.0     | 0.0            | 0.5  | 49.3              | 48.4             |
| Iran, Islamic Rep. | 668  | 40.8 | 4.4  | 35.9 | 18.0 | 1.0                    | 35.9 | 0.0     | 0.0            | 1.0  | 39.8              | 33.1             |
| Israel             | 511  | 47.7 | 14.5 | 24.0 | 11.1 | 2.7                    | 24.0 | 0.0     | 0.4            | 2.4  | 26.8              | 20.7             |
| Italy              | 420  | 42.0 | 6.9  | 35.9 | 13.4 | 1.7                    | 35.9 | 0.0     | 0.0            | 1.7  | 33.9              | 37.7             |
| Japan              | 589  | 56.8 | 6.7  | 29.2 | 7.2  | 0.1                    | 29.2 | 0.0     | 0.0            | 0.1  | 24.5              | 33.7             |
| Jordan             | 635  | 47.4 | 7.9  | 26.6 | 16.7 | 1.3                    | 26.6 | 0.6     | 0.0            | 0.7  | 26.3              | 26.9             |
| Korea, Rep. of     | 765  | 47.5 | 7.7  | 41.2 | 3.3  | 0.3                    | 41.2 | 0.0     | 0.0            | 0.3  | 33.8              | 48.6             |
| Latvia (LSS)       | 357  | 49.5 | 3.5  | 29.2 | 15.6 | 2.3                    | 29.2 | 0.5     | 0.2            | 1.5  | 28.0              | 30.6             |
| Lithuania          | 288  | 41.2 | 4.9  | 22.3 | 28.7 | 2.9                    | 22.3 | 0.0     | 0.3            | 2.6  | 22.3              | 22.3             |
| Macedonia, Rep. of | 497  | 53.1 | 7.0  | 10.9 | 26.1 | 2.9                    | 10.9 | 0.1     | 0.1            | 2.6  | 11.5              | 10.3             |
| Malaysia           | 700  | 32.8 | 2.7  | 59.7 | 4.4  | 0.3                    | 59.7 | 0.0     | 0.0            | 0.3  | 62.7              | 56.3             |
| Moldova            | 450  | 41.8 | 3.5  | 20.1 | 29.9 | 4.7                    | 20.1 | 1.8     | 0.4            | 2.4  | 21.3              | 18.8             |
| Morocco            | 665  | 17.3 | 18.2 | 23.3 | 36.2 | 5.0                    | 23.3 | 0.1     | 0.6            | 4.2  | 19.6              | 26.0             |
| Netherlands        | 371  | 29.5 | 17.8 | 21.8 | 29.7 | 1.2                    | 21.8 | 0.0     | 0.1            | 1.1  | 24.2              | 19.6             |
| New Zealand        | 456  | 59.7 | 7.5  | 20.5 | 10.8 | 1.6                    | 20.5 | 0.6     | 0.0            | 1.0  | 20.8              | 20.3             |
| Philippines        | 836  | 56.4 | 5.8  | 15.7 | 21.1 | 1.1                    | 15.7 | 0.0     | 0.3            | 0.8  | 15.6              | 15.7             |
| Romania            | 435  | 45.6 | 3.9  | 16.1 | 28.2 | 6.3                    | 16.1 | 3.1     | 0.5            | 2.7  | 17.4              | 14.9             |
| Russian Federation | 527  | 30.5 | 11.3 | 38.1 | 16.2 | 4.0                    | 38.1 | 1.2     | 0.0            | 2.7  | 40.2              | 35.7             |
| Singapore          | 625  | 34.8 | 5.7  | 45.0 | 14.1 | 0.5                    | 45.0 | 0.0     | 0.0            | 0.5  | 45.3              | 44.7             |
| Slovak Republic    | 430  | 20.8 | 15.7 | 42.5 | 19.4 | 1.5                    | 42.5 | 0.0     | 0.0            | 1.5  | 36.6              | 48.3             |
| Slovenia           | 380  | 36.2 | 3.4  | 52.6 | 6.3  | 1.6                    | 52.6 | 0.5     | 0.0            | 1.1  | 60.6              | 44.3             |
| South Africa       | 1006 | 51.4 | 6.8  | 10.9 | 30.0 | 0.9                    | 10.9 | 0.3     | 0.1            | 0.5  | 13.0              | 8.5              |
| Thailand           | 712  | 42.3 | 2.3  | 49.5 | 5.5  | 0.4                    | 49.5 | 0.0     | 0.2            | 0.3  | 47.7              | 51.7             |
| Tunisia            | 627  | 22.6 | 9.8  | 22.1 | 33.2 | 12.4                   | 22.1 | 10.8    | 0.0            | 1.6  | 21.4              | 22.8             |
| Turkey             | 986  | 42.7 | 4.6  | 19.6 | 30.4 | 2.8                    | 19.6 | 0.0     | 0.2            | 2.5  | 22.9              | 17.1             |
| United States      | 1128 | 58.3 | 8.6  | 19.7 | 13.0 | 0.5                    | 19.7 | 0.0     | 0.0            | 0.5  | 16.4              | 22.9             |
| International Avg. | .    | 39.8 | 7.9  | 33.3 | 17.0 | 2.0                    | 33.3 | 0.6     | 0.1            | 1.3  | 33.4              | 33.2             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Physics  
 Label: Sunscreen to protect against radiation ( S022278 - J08 )  
 Item Type = MC Key = D

| COUNTRY            | N    | A    | B    | C    | D    | E    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 494  | 2.1  | 6.8  | 2.8  | 84.6 | 2.0  | 1.7                    | 84.6 | 0.0     | 0.0            | 1.7  | 84.6              | 84.6             |
| Belgium (Flemish)  | 656  | 5.4  | 18.6 | 9.2  | 64.4 | 1.9  | 0.4                    | 64.4 | 0.3     | 0.0            | 0.2  | 59.9              | 69.0             |
| Bulgaria           | 413  | 9.8  | 6.0  | 16.2 | 62.1 | 1.5  | 4.4                    | 62.1 | 1.0     | 0.2            | 3.2  | 64.6              | 59.0             |
| Canada             | 1086 | 5.3  | 6.8  | 9.0  | 74.6 | 2.5  | 1.8                    | 74.6 | 0.3     | 0.2            | 1.3  | 71.4              | 77.7             |
| Chile              | 726  | 5.3  | 10.8 | 5.3  | 76.0 | 0.9  | 1.6                    | 76.0 | 0.0     | 0.0            | 1.6  | 76.4              | 75.7             |
| Chinese Taipei     | 725  | 2.3  | 0.4  | 2.6  | 94.1 | 0.4  | 0.1                    | 94.1 | 0.0     | 0.0            | 0.1  | 94.4              | 93.7             |
| Cyprus             | 387  | 21.5 | 29.2 | 14.6 | 25.6 | 8.5  | 0.6                    | 25.6 | 0.3     | 0.0            | 0.3  | 19.4              | 31.0             |
| Czech Republic     | 440  | 10.1 | 0.0  | 13.7 | 75.4 | 0.0  | 0.7                    | 75.4 | 0.0     | 0.0            | 0.7  | 76.3              | 74.4             |
| England            | 373  | 14.8 | 1.9  | 9.1  | 64.0 | 8.4  | 1.9                    | 64.0 | 0.3     | 0.0            | 1.6  | 55.4              | 72.9             |
| Finland            | 362  | 15.0 | 0.7  | 4.4  | 76.7 | 2.0  | 1.2                    | 76.7 | 0.0     | 0.0            | 1.2  | 72.7              | 80.2             |
| Hong Kong, SAR     | 649  | 6.8  | 1.6  | 6.1  | 84.4 | 0.9  | 0.3                    | 84.4 | 0.0     | 0.1            | 0.2  | 87.2              | 81.6             |
| Hungary            | 400  | 5.4  | 0.3  | 3.5  | 86.9 | 2.1  | 1.8                    | 86.9 | 1.0     | 0.0            | 0.7  | 85.6              | 88.6             |
| Indonesia          | 730  | 7.3  | 13.6 | 2.8  | 72.3 | 3.5  | 0.4                    | 72.3 | 0.0     | 0.0            | 0.4  | 71.7              | 73.0             |
| Iran, Islamic Rep. | 668  | 23.9 | 36.6 | 15.4 | 16.5 | 7.0  | 0.6                    | 16.5 | 0.0     | 0.0            | 0.6  | 14.1              | 18.3             |
| Israel             | 511  | 13.5 | 17.1 | 12.2 | 39.3 | 13.7 | 4.2                    | 39.3 | 0.3     | 0.4            | 3.5  | 35.1              | 44.7             |
| Italy              | 420  | 8.9  | 13.9 | 4.9  | 68.1 | 3.2  | 0.9                    | 68.1 | 0.0     | 0.0            | 0.9  | 63.7              | 72.2             |
| Japan              | 589  | 2.3  | 1.1  | 15.8 | 79.0 | 1.0  | 0.8                    | 79.0 | 0.3     | 0.0            | 0.5  | 83.0              | 75.1             |
| Jordan             | 635  | 14.4 | 12.7 | 17.2 | 42.8 | 9.7  | 3.1                    | 42.8 | 1.1     | 0.0            | 2.1  | 50.2              | 36.4             |
| Korea, Rep. of     | 765  | 5.4  | 0.9  | 15.8 | 77.0 | 0.7  | 0.3                    | 77.0 | 0.0     | 0.0            | 0.3  | 80.2              | 73.8             |
| Latvia (LSS)       | 357  | 25.3 | 3.3  | 10.4 | 54.5 | 4.9  | 1.6                    | 54.5 | 0.3     | 0.2            | 1.1  | 56.5              | 52.0             |
| Lithuania          | 288  | 14.5 | 4.1  | 6.6  | 70.2 | 1.3  | 3.3                    | 70.2 | 0.0     | 0.3            | 3.1  | 80.3              | 58.9             |
| Macedonia, Rep. of | 497  | 21.6 | 18.8 | 12.8 | 35.7 | 7.9  | 3.2                    | 35.7 | 0.3     | 0.1            | 2.8  | 40.4              | 30.4             |
| Malaysia           | 700  | 23.0 | 11.1 | 7.3  | 53.6 | 4.3  | 0.7                    | 53.6 | 0.0     | 0.0            | 0.7  | 54.4              | 52.6             |
| Moldova            | 450  | 22.3 | 6.5  | 14.4 | 44.7 | 8.2  | 3.9                    | 44.7 | 0.8     | 0.4            | 2.7  | 42.2              | 47.4             |
| Morocco            | 665  | 20.0 | 24.0 | 24.0 | 17.7 | 10.0 | 4.3                    | 17.7 | 0.4     | 0.6            | 3.2  | 14.5              | 20.1             |
| Netherlands        | 371  | 11.4 | 0.7  | 9.3  | 75.4 | 2.5  | 0.6                    | 75.4 | 0.0     | 0.1            | 0.5  | 71.6              | 79.4             |
| New Zealand        | 456  | 4.9  | 7.8  | 2.3  | 79.7 | 3.6  | 1.6                    | 79.7 | 0.2     | 0.0            | 1.4  | 78.7              | 80.7             |
| Philippines        | 836  | 4.7  | 18.7 | 5.6  | 57.0 | 12.5 | 1.5                    | 57.0 | 0.0     | 0.3            | 1.2  | 62.4              | 50.6             |
| Romania            | 435  | 11.0 | 25.6 | 10.0 | 47.6 | 2.4  | 3.4                    | 47.6 | 1.7     | 0.5            | 1.3  | 47.1              | 48.0             |
| Russian Federation | 527  | 12.4 | 4.5  | 10.4 | 65.4 | 4.3  | 2.9                    | 65.4 | 0.0     | 0.0            | 2.9  | 66.4              | 64.3             |
| Singapore          | 625  | 1.1  | 3.1  | 2.9  | 91.0 | 1.5  | 0.4                    | 91.0 | 0.0     | 0.0            | 0.4  | 92.4              | 89.6             |
| Slovak Republic    | 430  | 9.4  | 3.5  | 7.3  | 78.6 | 1.0  | 0.2                    | 78.6 | 0.0     | 0.0            | 0.2  | 81.9              | 75.4             |
| Slovenia           | 380  | 5.3  | 2.0  | 7.0  | 83.5 | 1.2  | 1.0                    | 83.5 | 0.3     | 0.0            | 0.6  | 86.3              | 80.7             |
| South Africa       | 1006 | 16.9 | 30.8 | 6.6  | 18.0 | 26.0 | 1.7                    | 18.0 | 0.5     | 0.1            | 1.0  | 18.3              | 17.7             |
| Thailand           | 712  | 5.2  | 1.8  | 3.6  | 86.0 | 2.9  | 0.5                    | 86.0 | 0.0     | 0.2            | 0.3  | 91.3              | 79.6             |
| Tunisia            | 627  | 22.5 | 13.6 | 17.4 | 33.4 | 6.4  | 6.6                    | 33.4 | 5.0     | 0.0            | 1.6  | 28.5              | 37.9             |
| Turkey             | 986  | 24.3 | 28.3 | 1.7  | 31.6 | 11.8 | 2.4                    | 31.6 | 0.0     | 0.2            | 2.1  | 31.7              | 31.5             |
| United States      | 1128 | 6.2  | 8.9  | 8.5  | 69.5 | 6.0  | 0.9                    | 69.5 | 0.0     | 0.0            | 0.9  | 65.5              | 73.4             |
| International Avg. | .    | 11.6 | 10.4 | 9.2  | 62.0 | 5.0  | 1.8                    | 62.0 | 0.4     | 0.1            | 1.3  | 62.0              | 61.9             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Earth Science  
 Label: Life on other planets ( S022081 - J09 )  
 Item Type = SA Key = X

| COUNTRY            | N    | 10   | 11   | 12   | 13  | 14   | 19   | 70   | 71  | 72  | 79   | 99   | V1   | NOT   | OMIT | 1.GIRL  | 2.BOY   |
|--------------------|------|------|------|------|-----|------|------|------|-----|-----|------|------|------|-------|------|---------|---------|
|                    |      |      |      |      |     |      |      |      |     |     |      |      |      | REACH |      | % Right | % Right |
| Australia          | 494  | 51.8 | 0.6  | 6.4  | 1.4 | 19.4 | 3.5  | 2.7  | 1.8 | 0.5 | 5.3  | 6.5  | 83.1 | 0.0   | 6.5  | 88.3    | 78.5    |
| Belgium (Flemish)  | 656  | 62.3 | 0.5  | 7.0  | 1.0 | 4.6  | 1.5  | 8.4  | 1.6 | 0.6 | 6.1  | 6.3  | 76.9 | 0.0   | 6.3  | 81.6    | 72.3    |
| Bulgaria           | 412  | 35.6 | 0.6  | 9.0  | 0.8 | 14.0 | 4.7  | 11.0 | 0.0 | 0.2 | 3.9  | 20.2 | 64.7 | 0.2   | 20.0 | 66.1    | 62.9    |
| Canada             | 1086 | 50.5 | 1.1  | 9.5  | 1.5 | 18.0 | 1.4  | 6.4  | 0.9 | 0.8 | 6.9  | 2.9  | 82.0 | 0.2   | 2.7  | 87.4    | 77.1    |
| Chile              | 726  | 35.1 | 0.5  | 4.6  | 1.8 | 10.0 | 4.7  | 7.7  | 0.1 | 1.1 | 12.9 | 21.6 | 56.6 | 0.0   | 21.6 | 57.8    | 55.5    |
| Chinese Taipei     | 725  | 47.3 | 0.6  | 19.4 | 0.9 | 10.9 | 0.3  | 6.3  | 0.9 | 0.5 | 8.4  | 4.6  | 79.3 | 0.0   | 4.6  | 79.9    | 78.7    |
| Cyprus             | 384  | 27.3 | 0.3  | 1.3  | 5.4 | 3.5  | 13.2 | 24.9 | 0.6 | 0.7 | 5.3  | 17.5 | 51.1 | 0.0   | 17.5 | 54.1    | 48.7    |
| Czech Republic     | 440  | 53.2 | 1.4  | 4.0  | 1.5 | 12.4 | 2.5  | 4.0  | 0.0 | 0.1 | 10.7 | 10.2 | 75.0 | 0.0   | 10.2 | 74.8    | 75.2    |
| England            | 373  | 59.5 | 0.0  | 3.8  | 0.7 | 14.6 | 3.1  | 4.6  | 1.5 | 0.8 | 6.4  | 5.0  | 81.6 | 0.0   | 5.0  | 79.6    | 83.8    |
| Finland            | 362  | 43.1 | 0.6  | 8.5  | 0.0 | 24.6 | 2.8  | 5.9  | 0.9 | 1.2 | 9.1  | 3.1  | 79.7 | 0.4   | 2.7  | 84.4    | 75.6    |
| Hong Kong, SAR     | 649  | 40.8 | 0.2  | 10.9 | 1.5 | 14.5 | 2.4  | 11.8 | 0.3 | 0.4 | 12.4 | 4.9  | 70.2 | 0.1   | 4.7  | 71.1    | 69.2    |
| Hungary            | 400  | 54.1 | 2.6  | 13.5 | 1.3 | 10.4 | 1.2  | 4.3  | 0.0 | 0.0 | 5.8  | 7.0  | 83.0 | 0.0   | 7.0  | 86.4    | 79.9    |
| Indonesia          | 729  | 48.0 | 4.9  | 3.8  | 0.2 | 1.3  | 1.0  | 13.8 | 1.7 | 0.0 | 22.4 | 2.8  | 59.3 | 0.0   | 2.8  | 56.1    | 62.8    |
| Iran, Islamic Rep. | 668  | 29.7 | 1.8  | 0.7  | 0.4 | 11.5 | 0.4  | 7.4  | 0.0 | 0.1 | 23.2 | 24.7 | 44.6 | 0.0   | 24.7 | 45.4    | 44.0    |
| Israel             | 511  | 42.0 | 1.5  | 7.3  | 1.1 | 7.2  | 2.5  | 8.8  | 1.3 | 0.2 | 9.1  | 19.2 | 61.5 | 0.4   | 18.8 | 60.5    | 63.1    |
| Italy              | 420  | 51.2 | 1.2  | 4.1  | 0.5 | 8.9  | 4.5  | 6.5  | 0.2 | 0.5 | 10.7 | 11.8 | 70.3 | 0.0   | 11.8 | 69.1    | 71.5    |
| Japan              | 589  | 52.4 | 0.7  | 5.1  | 4.2 | 5.3  | 1.0  | 14.4 | 0.6 | 0.0 | 10.8 | 5.4  | 68.7 | 0.0   | 5.4  | 71.3    | 66.2    |
| Jordan             | 635  | 45.2 | 0.9  | 5.4  | 1.6 | 5.1  | 1.3  | 5.9  | 0.8 | 1.3 | 20.7 | 11.9 | 59.5 | 0.0   | 11.9 | 70.9    | 49.7    |
| Korea, Rep. of     | 765  | 47.9 | 1.3  | 13.9 | 4.9 | 8.8  | 0.1  | 7.7  | 3.3 | 0.9 | 5.4  | 5.9  | 76.8 | 0.0   | 5.9  | 77.0    | 76.6    |
| Latvia (LSS)       | 357  | 50.1 | 11.3 | 10.7 | 1.4 | 4.8  | 1.6  | 3.3  | 0.4 | 0.0 | 5.1  | 11.4 | 79.8 | 0.2   | 11.2 | 81.5    | 77.8    |
| Lithuania          | 288  | 57.6 | 0.7  | 2.5  | 0.9 | 4.7  | 0.8  | 5.8  | 0.0 | 0.0 | 10.3 | 16.7 | 67.3 | 0.3   | 16.4 | 69.2    | 65.2    |
| Macedonia, Rep. of | 497  | 47.6 | 1.4  | 2.4  | 1.6 | 0.6  | 4.7  | 0.4  | 0.0 | 2.7 | 8.6  | 30.1 | 58.2 | 0.1   | 30.0 | 60.6    | 55.6    |
| Malaysia           | 700  | 55.8 | 0.9  | 3.1  | 1.4 | 3.7  | 2.0  | 18.8 | 1.4 | 0.7 | 6.1  | 6.1  | 66.9 | 0.0   | 6.1  | 70.2    | 63.2    |
| Moldova            | 450  | 29.6 | 7.5  | 4.9  | 0.9 | 1.4  | 6.6  | 6.8  | 0.0 | 0.0 | 18.5 | 23.8 | 50.9 | 0.4   | 23.3 | 55.2    | 46.2    |
| Morocco            | 665  | 15.1 | 1.7  | 3.7  | 0.6 | 2.5  | 1.5  | 19.9 | 1.4 | 0.2 | 21.9 | 31.5 | 25.1 | 0.6   | 30.8 | 27.7    | 23.4    |
| Netherlands        | 371  | 61.3 | 0.3  | 8.3  | 1.7 | 8.9  | 0.2  | 7.9  | 0.3 | 1.3 | 8.6  | 1.1  | 80.7 | 0.1   | 1.0  | 79.6    | 81.7    |
| New Zealand        | 456  | 47.1 | 0.9  | 8.1  | 0.7 | 19.9 | 3.1  | 6.2  | 0.6 | 0.0 | 8.0  | 5.4  | 79.8 | 0.0   | 5.4  | 85.0    | 75.0    |
| Philippines        | 836  | 15.0 | 0.2  | 6.2  | 0.8 | 2.3  | 1.4  | 19.9 | 0.5 | 0.0 | 24.1 | 29.5 | 26.0 | 0.3   | 29.2 | 29.1    | 22.3    |
| Romania            | 435  | 32.3 | 1.2  | 4.0  | 2.2 | 6.6  | 2.0  | 12.8 | 0.0 | 0.5 | 12.4 | 26.0 | 48.3 | 0.5   | 25.5 | 55.5    | 41.5    |
| Russian Federation | 527  | 46.3 | 2.1  | 9.7  | 1.8 | 11.6 | 1.5  | 6.9  | 0.5 | 0.7 | 4.8  | 13.9 | 73.2 | 0.0   | 13.9 | 75.1    | 71.0    |
| Singapore          | 625  | 56.6 | 1.3  | 12.6 | 0.7 | 11.9 | 2.3  | 3.0  | 1.9 | 0.3 | 5.4  | 3.9  | 85.5 | 0.0   | 3.9  | 87.3    | 83.7    |
| Slovak Republic    | 430  | 55.2 | 5.3  | 5.5  | 2.6 | 15.3 | 5.5  | 2.3  | 0.0 | 0.0 | 3.6  | 4.7  | 89.4 | 0.0   | 4.7  | 91.6    | 87.3    |
| Slovenia           | 380  | 62.0 | 0.2  | 7.3  | 1.0 | 6.7  | 0.6  | 8.0  | 0.4 | 1.8 | 5.1  | 6.9  | 77.9 | 0.0   | 6.9  | 83.4    | 72.3    |
| South Africa       | 1006 | 16.0 | 0.4  | 0.8  | 1.5 | 1.6  | 1.1  | 10.1 | 0.3 | 0.6 | 38.6 | 29.1 | 21.4 | 0.1   | 29.0 | 22.3    | 20.3    |
| Thailand           | 712  | 47.5 | 1.0  | 3.2  | 0.3 | 5.4  | 4.9  | 10.5 | 2.2 | 0.3 | 19.6 | 5.1  | 62.2 | 0.2   | 4.9  | 65.2    | 58.7    |
| Tunisia            | 624  | 43.8 | 2.1  | 10.7 | 1.9 | 2.8  | 3.0  | 16.2 | 0.8 | 0.7 | 7.1  | 10.9 | 64.3 | 0.0   | 10.9 | 61.6    | 66.8    |
| Turkey             | 986  | 35.3 | 2.1  | 3.6  | 1.5 | 1.8  | 3.0  | 3.8  | 1.0 | 0.7 | 14.5 | 32.9 | 47.1 | 0.2   | 32.7 | 47.4    | 46.9    |
| United States      | 1128 | 47.7 | 0.6  | 9.4  | 0.4 | 18.0 | 1.7  | 4.9  | 0.9 | 0.3 | 10.9 | 5.1  | 77.8 | 0.0   | 5.0  | 80.8    | 74.9    |
| International Avg. | .    | 44.7 | 1.6  | 6.7  | 1.4 | 8.8  | 2.6  | 8.7  | 0.8 | 0.6 | 11.3 | 12.8 | 65.9 | 0.1   | 12.7 | 68.2    | 63.8    |

V1 = % Scoring 1 or better V2 = % Scoring 2 or better V3 = % Scoring 3 or better  
 Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.  
 Because of missing gender information, some totals may appear inconsistent

Science: Physics  
 Label: Poles on cut magnet ( S022035 - K10 )  
 Item Type = SA Key = X

| COUNTRY            | N    | 10   | 70   | 71  | 79   | 99   | V1   | NOT   | ED   | OMIT | 1.GIRL  | 2.BOY   |
|--------------------|------|------|------|-----|------|------|------|-------|------|------|---------|---------|
|                    |      |      |      |     |      |      |      | REACH |      |      | % Right | % Right |
| Australia          | 504  | 57.4 | 33.1 | 0.5 | 4.5  | 4.5  | 57.4 | 0.3   | 4.2  |      | 57.6    | 57.2    |
| Belgium (Flemish)  | 657  | 54.5 | 36.9 | 0.1 | 2.8  | 5.6  | 54.5 | 0.0   | 5.6  |      | 57.0    | 52.2    |
| Bulgaria           | 404  | 55.3 | 26.3 | 3.0 | 1.4  | 14.1 | 55.3 | 0.3   | 13.7 |      | 49.3    | 61.4    |
| Canada             | 1102 | 48.6 | 42.5 | 0.9 | 5.4  | 2.6  | 48.6 | 0.1   | 2.4  |      | 54.3    | 42.4    |
| Chile              | 743  | 40.8 | 21.5 | 0.3 | 12.1 | 25.3 | 40.8 | 0.1   | 25.2 |      | 44.6    | 36.6    |
| Chinese Taipei     | 718  | 39.4 | 46.3 | 0.3 | 8.7  | 5.4  | 39.4 | 0.1   | 5.3  |      | 37.5    | 41.2    |
| Cyprus             | 386  | 64.0 | 26.4 | 0.0 | 2.8  | 6.8  | 64.0 | 0.0   | 6.8  |      | 63.1    | 64.8    |
| Czech Republic     | 443  | 39.6 | 52.1 | 1.0 | 3.5  | 3.8  | 39.6 | 0.0   | 3.8  |      | 32.2    | 48.6    |
| England            | 373  | 48.4 | 45.8 | 1.5 | 2.0  | 2.3  | 48.4 | 0.0   | 2.3  |      | 45.6    | 50.7    |
| Finland            | 367  | 42.6 | 47.6 | 0.0 | 4.2  | 5.6  | 42.6 | 0.0   | 5.6  |      | 41.0    | 44.3    |
| Hong Kong, SAR     | 655  | 48.9 | 40.7 | 0.9 | 4.0  | 5.6  | 48.9 | 0.2   | 5.4  |      | 50.1    | 47.6    |
| Hungary            | 400  | 44.6 | 50.2 | 0.0 | 1.8  | 3.4  | 44.6 | 0.3   | 3.1  |      | 39.2    | 52.6    |
| Indonesia          | 737  | 45.5 | 17.4 | 0.0 | 16.9 | 20.2 | 45.5 | 0.0   | 20.2 |      | 45.5    | 45.4    |
| Iran, Islamic Rep. | 657  | 36.0 | 41.2 | 0.2 | 12.9 | 9.7  | 36.0 | 0.1   | 9.6  |      | 36.7    | 35.6    |
| Israel             | 523  | 49.3 | 32.3 | 0.4 | 2.9  | 15.1 | 49.3 | 1.0   | 14.1 |      | 52.2    | 46.7    |
| Italy              | 419  | 47.6 | 39.6 | 0.2 | 4.9  | 7.7  | 47.6 | 0.0   | 7.7  |      | 50.9    | 44.4    |
| Japan              | 590  | 65.3 | 32.9 | 0.2 | 1.2  | 0.5  | 65.3 | 0.2   | 0.3  |      | 64.6    | 65.9    |
| Jordan             | 638  | 35.3 | 32.1 | 2.9 | 15.9 | 13.7 | 35.3 | 0.0   | 13.7 |      | 34.5    | 36.0    |
| Korea, Rep. of     | 764  | 66.1 | 31.9 | 0.4 | 1.1  | 0.5  | 66.1 | 0.0   | 0.5  |      | 66.6    | 65.6    |
| Latvia (LSS)       | 357  | 51.5 | 33.7 | 0.0 | 1.6  | 13.2 | 51.5 | 0.4   | 12.7 |      | 52.6    | 50.0    |
| Lithuania          | 299  | 57.1 | 28.0 | 0.0 | 1.9  | 13.0 | 57.1 | 0.0   | 13.0 |      | 60.8    | 52.3    |
| Macedonia, Rep. of | 500  | 66.3 | 14.2 | 0.9 | 3.9  | 14.7 | 66.3 | 1.0   | 13.8 |      | 62.4    | 70.2    |
| Malaysia           | 699  | 45.5 | 36.5 | 0.9 | 10.3 | 6.9  | 45.5 | 0.2   | 6.8  |      | 48.9    | 41.5    |
| Moldova            | 460  | 54.4 | 26.1 | 1.4 | 6.2  | 11.8 | 54.4 | 0.0   | 11.8 |      | 52.9    | 56.4    |
| Morocco            | 696  | 38.3 | 32.2 | 1.7 | 13.3 | 14.5 | 38.3 | 0.1   | 14.4 |      | 34.7    | 41.3    |
| Netherlands        | 369  | 50.3 | 37.6 | 0.8 | 7.2  | 4.1  | 50.3 | 0.3   | 3.7  |      | 48.2    | 52.7    |
| New Zealand        | 447  | 52.7 | 33.4 | 0.6 | 8.3  | 5.0  | 52.7 | 0.2   | 4.8  |      | 60.7    | 43.3    |
| Philippines        | 813  | 32.9 | 16.7 | 1.3 | 27.0 | 22.1 | 32.9 | 0.2   | 22.0 |      | 35.3    | 30.3    |
| Romania            | 427  | 57.3 | 27.2 | 2.4 | 4.5  | 8.6  | 57.3 | 0.2   | 8.4  |      | 55.3    | 58.9    |
| Russian Federation | 549  | 56.8 | 29.8 | 1.1 | 4.4  | 7.8  | 56.8 | 0.3   | 7.5  |      | 55.0    | 58.7    |
| Singapore          | 624  | 57.6 | 39.1 | 0.4 | 1.9  | 1.0  | 57.6 | 0.0   | 1.0  |      | 50.6    | 63.9    |
| Slovak Republic    | 430  | 50.9 | 44.2 | 0.4 | 3.2  | 1.3  | 50.9 | 0.0   | 1.3  |      | 47.1    | 55.5    |
| Slovenia           | 396  | 54.4 | 33.9 | 0.0 | 3.4  | 8.3  | 54.4 | 0.0   | 8.3  |      | 59.0    | 49.0    |
| South Africa       | 1034 | 21.6 | 9.5  | 0.6 | 36.4 | 31.8 | 21.6 | 0.4   | 31.4 |      | 20.2    | 23.1    |
| Thailand           | 713  | 46.3 | 40.5 | 3.1 | 4.4  | 5.6  | 46.3 | 0.2   | 5.4  |      | 44.6    | 48.3    |
| Tunisia            | 628  | 37.2 | 55.9 | 0.0 | 2.9  | 4.0  | 37.2 | 0.0   | 4.0  |      | 40.5    | 33.9    |
| Turkey             | 976  | 54.4 | 16.1 | 0.3 | 14.7 | 14.4 | 54.4 | 0.1   | 14.3 |      | 58.4    | 51.9    |
| United States      | 1126 | 52.7 | 34.9 | 0.9 | 4.6  | 6.9  | 52.7 | 0.2   | 6.7  |      | 53.2    | 52.3    |
| International Avg. | .    | 49.1 | 33.9 | 0.8 | 7.1  | 9.1  | 49.1 | 0.2   | 9.0  |      | 49.0    | 49.3    |

V1 = % Scoring 1 or better V2 = % Scoring 2 or better V3 = % Scoring 3 or better  
 Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.  
 Because of missing gender information, some totals may appear inconsistent

Science: Scientific Inquiry and the Nature of Science  
 Label: Thermometer scale for boiling water ( S022225 - K11 )  
 Item Type = MC Key = D

| COUNTRY            | N    | A    | B    | C    | D    | E    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 504  | 3.0  | 13.7 | 44.3 | 27.7 | 9.6  | 1.6                    | 27.7 | 0.6     | 0.3            | 0.7  | 24.7              | 30.6             |
| Belgium (Flemish)  | 657  | 3.2  | 13.4 | 40.9 | 32.9 | 8.9  | 0.8                    | 32.9 | 0.4     | 0.0            | 0.4  | 31.8              | 33.9             |
| Bulgaria           | 404  | 5.3  | 9.2  | 46.3 | 21.3 | 8.1  | 9.8                    | 21.3 | 2.2     | 0.5            | 7.1  | 19.9              | 22.8             |
| Canada             | 1112 | 3.7  | 14.2 | 46.9 | 24.6 | 10.2 | 0.4                    | 24.6 | 0.1     | 0.1            | 0.1  | 22.5              | 27.2             |
| Chile              | 744  | 11.3 | 20.9 | 47.7 | 9.1  | 9.0  | 2.0                    | 9.1  | 0.0     | 0.1            | 1.8  | 8.8               | 9.5              |
| Chinese Taipei     | 718  | 1.9  | 4.4  | 49.3 | 30.8 | 13.3 | 0.4                    | 30.8 | 0.1     | 0.1            | 0.1  | 30.9              | 30.7             |
| Cyprus             | 388  | 5.0  | 9.3  | 51.6 | 18.2 | 14.9 | 0.9                    | 18.2 | 0.0     | 0.0            | 0.9  | 17.8              | 18.6             |
| Czech Republic     | 443  | 3.1  | 14.8 | 47.9 | 27.1 | 5.3  | 1.7                    | 27.1 | 0.3     | 0.0            | 1.4  | 25.6              | 28.9             |
| England            | 373  | 2.0  | 14.1 | 49.9 | 26.7 | 6.6  | 0.8                    | 26.7 | 0.3     | 0.0            | 0.5  | 21.6              | 30.7             |
| Finland            | 367  | 1.9  | 6.6  | 42.0 | 34.9 | 14.0 | 0.6                    | 34.9 | 0.2     | 0.0            | 0.4  | 29.2              | 40.8             |
| Hong Kong, SAR     | 656  | 3.5  | 4.7  | 37.8 | 39.6 | 14.1 | 0.3                    | 39.6 | 0.1     | 0.2            | 0.0  | 39.6              | 39.5             |
| Hungary            | 400  | 1.4  | 5.4  | 47.4 | 29.3 | 14.1 | 2.3                    | 29.3 | 0.7     | 0.3            | 1.3  | 31.7              | 25.9             |
| Indonesia          | 737  | 9.9  | 5.9  | 60.4 | 10.7 | 12.8 | 0.3                    | 10.7 | 0.0     | 0.0            | 0.3  | 11.1              | 10.3             |
| Iran, Islamic Rep. | 657  | 10.5 | 16.0 | 53.7 | 10.2 | 8.3  | 1.3                    | 10.2 | 0.0     | 0.1            | 1.2  | 8.8               | 11.2             |
| Israel             | 523  | 5.8  | 18.1 | 48.0 | 20.3 | 3.8  | 4.0                    | 20.3 | 0.3     | 1.4            | 2.4  | 17.1              | 23.2             |
| Italy              | 419  | 4.5  | 13.5 | 47.9 | 19.2 | 13.1 | 1.9                    | 19.2 | 0.0     | 0.0            | 1.9  | 17.6              | 20.7             |
| Japan              | 590  | 3.5  | 4.2  | 45.7 | 34.4 | 11.3 | 0.9                    | 34.4 | 0.0     | 0.2            | 0.7  | 36.1              | 32.7             |
| Jordan             | 638  | 7.3  | 7.8  | 44.6 | 24.7 | 14.7 | 0.8                    | 24.7 | 0.5     | 0.0            | 0.3  | 29.1              | 21.0             |
| Korea, Rep. of     | 764  | 3.0  | 6.2  | 38.8 | 40.2 | 11.7 | 0.1                    | 40.2 | 0.0     | 0.0            | 0.1  | 43.7              | 36.7             |
| Latvia (LSS)       | 357  | 2.2  | 5.7  | 56.1 | 22.1 | 10.3 | 3.6                    | 22.1 | 0.6     | 0.6            | 2.3  | 18.9              | 26.2             |
| Lithuania          | 299  | 4.8  | 5.3  | 60.9 | 16.1 | 10.6 | 2.3                    | 16.1 | 0.0     | 0.0            | 2.3  | 14.4              | 18.3             |
| Macedonia, Rep. of | 500  | 10.9 | 11.3 | 51.3 | 12.2 | 9.7  | 4.6                    | 12.2 | 0.2     | 1.0            | 3.4  | 11.0              | 13.4             |
| Malaysia           | 699  | 5.3  | 8.3  | 66.4 | 10.8 | 8.4  | 0.8                    | 10.8 | 0.1     | 0.2            | 0.5  | 9.2               | 12.8             |
| Moldova            | 459  | 3.7  | 8.0  | 63.5 | 12.7 | 9.2  | 2.9                    | 12.7 | 0.5     | 0.2            | 2.2  | 11.5              | 14.2             |
| Morocco            | 696  | 21.9 | 12.8 | 46.1 | 7.9  | 8.1  | 3.1                    | 7.9  | 1.5     | 0.1            | 1.5  | 7.6               | 8.0              |
| Netherlands        | 369  | 2.0  | 4.0  | 42.2 | 37.6 | 12.1 | 2.0                    | 37.6 | 0.9     | 0.3            | 0.8  | 39.5              | 35.4             |
| New Zealand        | 447  | 4.0  | 14.4 | 46.6 | 23.2 | 10.7 | 1.1                    | 23.2 | 0.5     | 0.2            | 0.4  | 22.2              | 24.5             |
| Philippines        | 812  | 13.2 | 14.4 | 41.5 | 13.0 | 17.3 | 0.6                    | 13.0 | 0.0     | 0.2            | 0.4  | 13.9              | 12.1             |
| Romania            | 428  | 5.3  | 13.7 | 53.7 | 15.2 | 9.3  | 2.8                    | 15.2 | 0.3     | 0.2            | 2.3  | 17.7              | 13.3             |
| Russian Federation | 549  | 2.2  | 9.5  | 56.1 | 24.4 | 4.7  | 3.0                    | 24.4 | 0.3     | 0.3            | 2.3  | 21.9              | 27.0             |
| Singapore          | 624  | 1.9  | 6.0  | 57.2 | 26.9 | 7.6  | 0.3                    | 26.9 | 0.2     | 0.0            | 0.2  | 25.6              | 28.1             |
| Slovak Republic    | 430  | 1.2  | 3.7  | 50.1 | 31.6 | 12.2 | 1.2                    | 31.6 | 0.2     | 0.0            | 0.9  | 33.7              | 29.1             |
| Slovenia           | 396  | 4.7  | 10.8 | 41.8 | 28.5 | 10.7 | 3.5                    | 28.5 | 0.8     | 0.0            | 2.7  | 27.9              | 29.2             |
| South Africa       | 1034 | 15.8 | 13.2 | 41.0 | 12.0 | 15.6 | 2.4                    | 12.0 | 1.2     | 0.4            | 0.8  | 12.1              | 11.9             |
| Thailand           | 713  | 9.9  | 13.5 | 49.1 | 14.5 | 11.3 | 1.8                    | 14.5 | 0.1     | 0.2            | 1.4  | 13.1              | 16.2             |
| Tunisia            | 628  | 5.9  | 10.4 | 51.0 | 17.0 | 10.8 | 5.0                    | 17.0 | 4.4     | 0.0            | 0.5  | 18.8              | 15.3             |
| Turkey             | .    | .    | .    | .    | .    | .    | .                      | .    | .       | .              | .    | .                 | .                |
| United States      | 1126 | 4.4  | 17.0 | 40.9 | 26.4 | 10.7 | 0.7                    | 26.4 | 0.2     | 0.2            | 0.3  | 27.0              | 25.8             |
| International Avg. | .    | 5.7  | 10.4 | 48.8 | 22.5 | 10.6 | 2.0                    | 22.5 | 0.5     | 0.2            | 1.3  | 22.0              | 23.1             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Life Science  
 Label: Biological control of insect population ( S022117 - K12 )  
 Item Type = MC Key = B

| COUNTRY            | N    | A    | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 504  | 6.3  | 68.3 | 4.5  | 19.8 | 1.1                    | 68.3 | 0.0     | 0.3            | 0.8  | 67.1              | 69.6             |
| Belgium (Flemish)  | 657  | 6.5  | 62.9 | 6.0  | 23.8 | 0.8                    | 62.9 | 0.2     | 0.0            | 0.6  | 63.0              | 62.9             |
| Bulgaria           | 404  | 7.6  | 60.1 | 7.3  | 18.8 | 6.2                    | 60.1 | 0.5     | 0.5            | 5.2  | 57.7              | 62.7             |
| Canada             | 1112 | 6.0  | 69.5 | 5.4  | 17.5 | 1.6                    | 69.5 | 0.3     | 0.1            | 1.2  | 68.7              | 70.8             |
| Chile              | 744  | 11.9 | 40.2 | 16.0 | 29.8 | 2.1                    | 40.2 | 0.0     | 0.1            | 1.9  | 39.8              | 40.7             |
| Chinese Taipei     | 718  | 4.1  | 45.7 | 8.2  | 41.7 | 0.3                    | 45.7 | 0.0     | 0.1            | 0.1  | 49.7              | 41.7             |
| Cyprus             | 388  | 15.4 | 35.3 | 24.1 | 23.8 | 1.5                    | 35.3 | 0.7     | 0.0            | 0.8  | 33.0              | 37.4             |
| Czech Republic     | 443  | 4.3  | 71.8 | 3.3  | 19.8 | 0.8                    | 71.8 | 0.5     | 0.0            | 0.4  | 76.9              | 65.5             |
| England            | 373  | 4.2  | 66.4 | 9.3  | 18.1 | 2.0                    | 66.4 | 0.6     | 0.0            | 1.4  | 62.5              | 69.6             |
| Finland            | 367  | 8.6  | 64.3 | 5.4  | 19.3 | 2.5                    | 64.3 | 0.0     | 0.0            | 2.5  | 65.0              | 63.6             |
| Hong Kong, SAR     | 656  | 4.0  | 41.9 | 5.1  | 48.7 | 0.3                    | 41.9 | 0.1     | 0.2            | 0.0  | 40.1              | 43.7             |
| Hungary            | 400  | 7.6  | 44.4 | 13.3 | 30.6 | 4.1                    | 44.4 | 0.3     | 0.3            | 3.5  | 42.7              | 47.2             |
| Indonesia          | 737  | 13.1 | 41.8 | 17.3 | 27.2 | 0.7                    | 41.8 | 0.0     | 0.0            | 0.7  | 41.6              | 41.9             |
| Iran, Islamic Rep. | 657  | 15.7 | 30.2 | 19.0 | 33.6 | 1.5                    | 30.2 | 0.0     | 0.1            | 1.4  | 26.0              | 32.9             |
| Israel             | 523  | 8.8  | 51.7 | 11.9 | 24.2 | 3.3                    | 51.7 | 0.6     | 1.4            | 1.4  | 52.0              | 51.4             |
| Italy              | 419  | 10.3 | 51.2 | 11.3 | 26.1 | 1.1                    | 51.2 | 0.0     | 0.0            | 1.1  | 53.2              | 49.3             |
| Japan              | 590  | 6.0  | 63.8 | 8.1  | 21.2 | 0.9                    | 63.8 | 0.2     | 0.3            | 0.3  | 65.4              | 62.2             |
| Jordan             | 638  | 11.0 | 41.5 | 21.2 | 24.2 | 2.1                    | 41.5 | 0.7     | 0.0            | 1.4  | 42.4              | 40.8             |
| Korea, Rep. of     | 764  | 18.3 | 61.8 | 15.0 | 4.8  | 0.1                    | 61.8 | 0.0     | 0.0            | 0.1  | 56.9              | 66.6             |
| Latvia (LSS)       | 357  | 8.1  | 31.5 | 16.6 | 41.3 | 2.6                    | 31.5 | 0.0     | 0.6            | 1.9  | 32.3              | 30.4             |
| Lithuania          | 299  | 13.7 | 40.6 | 8.8  | 33.1 | 3.9                    | 40.6 | 0.0     | 0.0            | 3.9  | 38.3              | 43.4             |
| Macedonia, Rep. of | 500  | 14.5 | 28.4 | 18.5 | 33.8 | 4.8                    | 28.4 | 0.0     | 1.2            | 3.6  | 24.0              | 32.8             |
| Malaysia           | 699  | 7.7  | 50.6 | 16.3 | 24.7 | 0.7                    | 50.6 | 0.0     | 0.2            | 0.5  | 49.1              | 52.3             |
| Moldova            | 460  | 20.9 | 21.4 | 24.1 | 31.7 | 1.9                    | 21.4 | 0.2     | 0.2            | 1.5  | 16.1              | 28.3             |
| Morocco            | 696  | 18.9 | 15.5 | 20.7 | 42.2 | 2.7                    | 15.5 | 0.6     | 0.1            | 2.0  | 15.4              | 15.5             |
| Netherlands        | 369  | 6.9  | 53.0 | 4.6  | 32.2 | 3.2                    | 53.0 | 0.0     | 0.3            | 2.9  | 45.5              | 62.1             |
| New Zealand        | 447  | 9.1  | 60.2 | 12.0 | 17.2 | 1.5                    | 60.2 | 0.0     | 0.2            | 1.3  | 62.4              | 57.8             |
| Philippines        | 812  | 21.3 | 34.8 | 28.4 | 14.9 | 0.6                    | 34.8 | 0.0     | 0.2            | 0.4  | 35.3              | 34.2             |
| Romania            | 428  | 12.5 | 37.5 | 17.4 | 28.0 | 4.6                    | 37.5 | 1.0     | 0.5            | 3.1  | 36.0              | 38.7             |
| Russian Federation | 549  | 12.5 | 32.3 | 17.3 | 34.2 | 3.6                    | 32.3 | 0.2     | 0.3            | 3.1  | 27.5              | 37.3             |
| Singapore          | 624  | 3.6  | 68.5 | 5.8  | 21.8 | 0.2                    | 68.5 | 0.0     | 0.1            | 0.2  | 68.9              | 68.2             |
| Slovak Republic    | 430  | 5.9  | 64.5 | 7.1  | 22.0 | 0.6                    | 64.5 | 0.1     | 0.0            | 0.5  | 65.9              | 62.7             |
| Slovenia           | 396  | 8.9  | 46.4 | 9.9  | 33.1 | 1.8                    | 46.4 | 0.2     | 0.0            | 1.5  | 46.2              | 46.7             |
| South Africa       | 1034 | 29.2 | 20.3 | 22.3 | 26.3 | 1.9                    | 20.3 | 0.2     | 0.6            | 1.2  | 17.7              | 22.9             |
| Thailand           | 713  | 7.8  | 41.0 | 8.5  | 41.1 | 1.6                    | 41.0 | 0.1     | 0.2            | 1.3  | 38.0              | 44.4             |
| Tunisia            | 628  | 14.3 | 27.9 | 20.4 | 31.5 | 6.0                    | 27.9 | 5.2     | 0.0            | 0.8  | 27.4              | 28.4             |
| Turkey             | 976  | 16.6 | 14.6 | 26.2 | 39.9 | 2.8                    | 14.6 | 0.0     | 0.2            | 2.6  | 12.4              | 15.9             |
| United States      | 1126 | 5.9  | 66.4 | 7.5  | 19.1 | 1.1                    | 66.4 | 0.1     | 0.2            | 0.9  | 69.0              | 64.1             |
| International Avg. | .    | 10.7 | 46.5 | 13.3 | 27.4 | 2.1                    | 46.5 | 0.3     | 0.2            | 1.5  | 45.6              | 47.5             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent



Science: Scientific Inquiry and the Nature of Science  
 Label: Plant growth experiment ( S022235 - K13 )  
 Item Type = MC Key = E

| COUNTRY            | N    | A    | B    | C   | D    | E    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|-----|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 504  | 5.5  | 18.8 | 2.8 | 8.0  | 63.7 | 1.2                    | 63.7 | 0.3     | 0.3            | 0.6  | 64.9              | 62.6             |
| Belgium (Flemish)  | 657  | 10.3 | 23.5 | 2.4 | 14.0 | 49.3 | 0.6                    | 49.3 | 0.3     | 0.0            | 0.2  | 49.5              | 49.0             |
| Bulgaria           | 404  | 7.8  | 7.6  | 2.0 | 7.8  | 68.4 | 6.5                    | 68.4 | 0.2     | 0.5            | 5.7  | 70.3              | 66.7             |
| Canada             | 1112 | 3.9  | 15.1 | 4.3 | 4.5  | 71.6 | 0.5                    | 71.6 | 0.1     | 0.1            | 0.3  | 72.3              | 70.7             |
| Chile              | 744  | 9.7  | 15.4 | 5.9 | 6.0  | 60.8 | 2.2                    | 60.8 | 0.0     | 0.1            | 2.0  | 62.2              | 59.3             |
| Chinese Taipei     | 718  | 3.2  | 13.8 | 2.5 | 4.6  | 75.1 | 0.9                    | 75.1 | 0.7     | 0.1            | 0.0  | 77.5              | 72.7             |
| Cyprus             | 389  | 7.0  | 14.9 | 7.1 | 4.5  | 65.5 | 1.0                    | 65.5 | 0.3     | 0.0            | 0.7  | 64.4              | 66.6             |
| Czech Republic     | 443  | 5.4  | 14.1 | 4.7 | 4.4  | 70.4 | 1.0                    | 70.4 | 0.0     | 0.0            | 1.0  | 67.0              | 74.6             |
| England            | 373  | 2.7  | 15.1 | 4.0 | 5.2  | 72.5 | 0.5                    | 72.5 | 0.0     | 0.0            | 0.5  | 67.4              | 76.7             |
| Finland            | 367  | 2.5  | 7.4  | 1.7 | 3.7  | 84.0 | 0.7                    | 84.0 | 0.0     | 0.0            | 0.7  | 84.5              | 83.6             |
| Hong Kong, SAR     | 656  | 4.0  | 9.2  | 3.4 | 4.5  | 78.4 | 0.5                    | 78.4 | 0.0     | 0.2            | 0.4  | 77.0              | 79.8             |
| Hungary            | 400  | 4.3  | 7.3  | 2.4 | 8.8  | 75.5 | 1.7                    | 75.5 | 0.0     | 0.3            | 1.4  | 77.4              | 72.5             |
| Indonesia          | 737  | 11.0 | 32.1 | 5.0 | 13.9 | 36.7 | 1.3                    | 36.7 | 0.2     | 0.0            | 1.0  | 35.1              | 38.3             |
| Iran, Islamic Rep. | 657  | 11.2 | 17.4 | 6.9 | 15.1 | 47.8 | 1.4                    | 47.8 | 0.0     | 0.1            | 1.3  | 51.4              | 45.5             |
| Israel             | 523  | 6.7  | 19.4 | 4.9 | 11.6 | 54.0 | 3.4                    | 54.0 | 0.0     | 1.4            | 2.0  | 55.1              | 52.9             |
| Italy              | 419  | 6.9  | 17.1 | 3.4 | 10.1 | 61.7 | 0.7                    | 61.7 | 0.0     | 0.0            | 0.7  | 58.3              | 65.0             |
| Japan              | 590  | 4.8  | 11.7 | 2.8 | 2.6  | 76.8 | 1.2                    | 76.8 | 0.6     | 0.3            | 0.3  | 77.6              | 75.9             |
| Jordan             | 638  | 12.1 | 10.8 | 0.9 | 9.8  | 64.6 | 1.8                    | 64.6 | 1.0     | 0.0            | 0.9  | 67.3              | 62.4             |
| Korea, Rep. of     | 764  | 5.8  | 25.6 | 5.3 | 7.4  | 55.6 | 0.4                    | 55.6 | 0.3     | 0.0            | 0.1  | 54.8              | 56.4             |
| Latvia (LSS)       | 357  | 6.9  | 22.1 | 3.4 | 9.1  | 54.7 | 3.8                    | 54.7 | 0.8     | 0.6            | 2.4  | 52.4              | 57.7             |
| Lithuania          | 299  | 13.4 | 21.3 | 3.5 | 13.2 | 43.1 | 5.5                    | 43.1 | 0.0     | 0.0            | 5.5  | 40.7              | 46.1             |
| Macedonia, Rep. of | 500  | 4.6  | 9.4  | 1.3 | 4.4  | 73.3 | 7.1                    | 73.3 | 0.8     | 1.3            | 5.0  | 71.8              | 74.8             |
| Malaysia           | 699  | 6.6  | 19.5 | 6.7 | 12.8 | 53.4 | 1.0                    | 53.4 | 0.0     | 0.3            | 0.7  | 54.1              | 52.6             |
| Moldova            | 460  | 4.4  | 15.5 | 6.1 | 6.9  | 66.0 | 1.1                    | 66.0 | 0.0     | 0.2            | 0.9  | 65.7              | 66.3             |
| Morocco            | 696  | 7.7  | 9.4  | 8.5 | 4.7  | 56.9 | 12.8                   | 56.9 | 3.3     | 0.4            | 9.1  | 57.2              | 56.5             |
| Netherlands        | 369  | 9.8  | 15.3 | 6.5 | 4.7  | 62.8 | 0.8                    | 62.8 | 0.1     | 0.3            | 0.4  | 66.1              | 58.7             |
| New Zealand        | 447  | 7.0  | 16.6 | 4.3 | 4.4  | 67.0 | 0.7                    | 67.0 | 0.0     | 0.2            | 0.4  | 65.5              | 68.6             |
| Philippines        | 812  | 18.1 | 20.3 | 3.2 | 10.1 | 47.6 | 0.6                    | 47.6 | 0.0     | 0.2            | 0.5  | 46.4              | 49.0             |
| Romania            | 428  | 12.2 | 11.8 | 3.5 | 10.0 | 59.6 | 2.8                    | 59.6 | 0.0     | 0.5            | 2.2  | 63.7              | 56.5             |
| Russian Federation | 549  | 6.4  | 16.2 | 5.8 | 10.6 | 58.0 | 2.9                    | 58.0 | 0.3     | 0.5            | 2.2  | 58.0              | 58.0             |
| Singapore          | 624  | 5.8  | 15.9 | 1.9 | 4.2  | 71.9 | 0.3                    | 71.9 | 0.0     | 0.1            | 0.2  | 72.8              | 71.1             |
| Slovak Republic    | 430  | 18.6 | 23.2 | 2.7 | 8.6  | 44.5 | 2.4                    | 44.5 | 0.8     | 0.0            | 1.6  | 46.9              | 41.6             |
| Slovenia           | 396  | 5.6  | 17.0 | 3.4 | 13.9 | 59.2 | 0.9                    | 59.2 | 0.0     | 0.0            | 0.9  | 57.5              | 61.1             |
| South Africa       | 1034 | 13.6 | 30.7 | 8.9 | 7.1  | 33.8 | 5.9                    | 33.8 | 1.3     | 0.6            | 4.0  | 29.9              | 37.9             |
| Thailand           | 713  | 12.6 | 37.6 | 6.8 | 7.2  | 35.0 | 0.8                    | 35.0 | 0.0     | 0.2            | 0.6  | 33.5              | 36.7             |
| Tunisia            | 628  | 17.9 | 11.7 | 3.4 | 12.0 | 47.5 | 7.4                    | 47.5 | 4.0     | 0.0            | 3.4  | 48.9              | 46.1             |
| Turkey             | 976  | 11.8 | 13.7 | 7.2 | 5.6  | 60.0 | 1.7                    | 60.0 | 0.0     | 0.3            | 1.5  | 58.4              | 61.0             |
| United States      | 1126 | 6.2  | 17.3 | 4.8 | 6.5  | 64.1 | 1.1                    | 64.1 | 0.0     | 0.2            | 0.8  | 64.4              | 63.8             |
| International Avg. | .    | 8.3  | 16.9 | 4.3 | 8.0  | 60.3 | 2.3                    | 60.3 | 0.4     | 0.3            | 1.6  | 60.2              | 60.4             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Chemistry  
 Label: Reactions releasing energy ( S022188 - K14 )  
 Item Type = MC Key = C

| COUNTRY            | N    | A    | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 504  | 15.9 | 18.5 | 59.3 | 4.9  | 1.5                    | 59.3 | 0.2     | 0.3            | 0.9  | 58.2              | 60.4             |
| Belgium (Flemish)  | 657  | 25.7 | 17.2 | 47.1 | 7.6  | 2.4                    | 47.1 | 0.1     | 0.1            | 2.1  | 43.2              | 50.8             |
| Bulgaria           | 404  | 26.5 | 11.7 | 48.3 | 8.6  | 4.9                    | 48.3 | 0.0     | 0.8            | 4.1  | 41.6              | 55.0             |
| Canada             | 1112 | 14.0 | 20.6 | 59.9 | 5.2  | 0.3                    | 59.9 | 0.0     | 0.1            | 0.1  | 57.8              | 62.7             |
| Chile              | 744  | 15.2 | 18.8 | 49.2 | 14.0 | 2.8                    | 49.2 | 0.0     | 0.1            | 2.6  | 47.4              | 51.3             |
| Chinese Taipei     | 718  | 10.1 | 6.8  | 78.6 | 4.3  | 0.1                    | 78.6 | 0.0     | 0.1            | 0.0  | 74.1              | 83.0             |
| Cyprus             | 388  | 15.3 | 17.9 | 61.1 | 3.4  | 2.2                    | 61.1 | 0.0     | 0.0            | 2.2  | 62.6              | 59.7             |
| Czech Republic     | 443  | 19.3 | 8.7  | 55.2 | 14.2 | 2.7                    | 55.2 | 0.0     | 0.3            | 2.4  | 48.4              | 63.4             |
| England            | 373  | 22.5 | 10.5 | 62.7 | 2.6  | 1.7                    | 62.7 | 0.7     | 0.0            | 1.0  | 58.7              | 65.8             |
| Finland            | 367  | 24.4 | 13.2 | 58.5 | 3.5  | 0.3                    | 58.5 | 0.0     | 0.0            | 0.3  | 51.7              | 65.6             |
| Hong Kong, SAR     | 656  | 12.8 | 9.6  | 72.8 | 4.6  | 0.2                    | 72.8 | 0.0     | 0.2            | 0.0  | 71.0              | 74.6             |
| Hungary            | 400  | 23.7 | 9.7  | 60.8 | 3.9  | 1.8                    | 60.8 | 0.0     | 0.3            | 1.5  | 58.1              | 65.1             |
| Indonesia          | 737  | 34.3 | 16.8 | 43.3 | 4.8  | 0.8                    | 43.3 | 0.0     | 0.0            | 0.8  | 42.9              | 43.7             |
| Iran, Islamic Rep. | 658  | 10.4 | 15.3 | 63.9 | 9.6  | 0.8                    | 63.9 | 0.0     | 0.3            | 0.4  | 64.9              | 63.2             |
| Israel             | 523  | 9.1  | 21.8 | 60.7 | 5.0  | 3.4                    | 60.7 | 0.1     | 1.4            | 1.9  | 65.2              | 56.6             |
| Italy              | 419  | 31.7 | 18.8 | 40.2 | 4.7  | 4.6                    | 40.2 | 0.0     | 0.0            | 4.6  | 37.8              | 42.6             |
| Japan              | 590  | 14.9 | 30.9 | 50.4 | 3.3  | 0.5                    | 50.4 | 0.0     | 0.3            | 0.2  | 49.2              | 51.6             |
| Jordan             | 639  | 27.4 | 15.8 | 47.8 | 6.9  | 2.2                    | 47.8 | 0.3     | 0.0            | 1.9  | 48.7              | 47.0             |
| Korea, Rep. of     | 764  | 33.7 | 23.1 | 40.4 | 2.7  | 0.0                    | 40.4 | 0.0     | 0.0            | 0.0  | 36.2              | 44.6             |
| Latvia (LSS)       | 357  | 11.6 | 20.3 | 57.6 | 7.2  | 3.4                    | 57.6 | 0.2     | 0.6            | 2.5  | 57.1              | 58.2             |
| Lithuania          | 299  | 14.0 | 19.0 | 58.2 | 6.4  | 2.3                    | 58.2 | 0.0     | 0.0            | 2.3  | 52.0              | 66.2             |
| Macedonia, Rep. of | 500  | 27.1 | 12.9 | 45.9 | 8.7  | 5.4                    | 45.9 | 0.0     | 1.3            | 4.1  | 41.7              | 50.0             |
| Malaysia           | 699  | 10.6 | 14.4 | 66.5 | 7.1  | 1.4                    | 66.5 | 0.0     | 0.3            | 1.0  | 62.8              | 70.6             |
| Moldova            | 460  | 36.2 | 15.4 | 32.5 | 14.6 | 1.4                    | 32.5 | 0.0     | 0.4            | 1.0  | 26.0              | 40.7             |
| Morocco            | 694  | 27.8 | 16.2 | 30.4 | 22.4 | 3.2                    | 30.4 | 0.3     | 0.7            | 2.2  | 34.9              | 27.3             |
| Netherlands        | 369  | 23.0 | 16.6 | 52.0 | 7.2  | 1.2                    | 52.0 | 0.1     | 0.5            | 0.6  | 53.9              | 49.9             |
| New Zealand        | 447  | 8.4  | 22.3 | 60.6 | 7.6  | 1.2                    | 60.6 | 0.0     | 0.2            | 1.0  | 58.4              | 63.1             |
| Philippines        | 813  | 15.1 | 11.7 | 54.8 | 17.7 | 0.7                    | 54.8 | 0.0     | 0.3            | 0.4  | 56.6              | 52.8             |
| Romania            | 428  | 30.7 | 9.3  | 49.2 | 8.8  | 2.0                    | 49.2 | 0.0     | 0.9            | 1.1  | 49.5              | 49.0             |
| Russian Federation | 549  | 23.0 | 11.7 | 59.8 | 3.7  | 1.8                    | 59.8 | 0.0     | 0.5            | 1.4  | 55.9              | 63.7             |
| Singapore          | 624  | 13.8 | 9.8  | 70.9 | 5.1  | 0.5                    | 70.9 | 0.0     | 0.1            | 0.4  | 64.8              | 76.4             |
| Slovak Republic    | 430  | 14.3 | 11.4 | 65.8 | 7.2  | 1.3                    | 65.8 | 0.0     | 0.0            | 1.3  | 64.2              | 67.7             |
| Slovenia           | 396  | 22.9 | 20.0 | 50.2 | 4.8  | 2.1                    | 50.2 | 0.0     | 0.0            | 2.1  | 46.8              | 54.0             |
| South Africa       | 1034 | 25.9 | 20.6 | 38.1 | 13.4 | 1.9                    | 38.1 | 0.1     | 0.8            | 1.1  | 39.8              | 36.4             |
| Thailand           | 713  | 18.5 | 13.1 | 62.3 | 5.1  | 1.0                    | 62.3 | 0.0     | 0.2            | 0.8  | 62.3              | 62.2             |
| Tunisia            | 628  | 12.3 | 9.3  | 68.4 | 7.1  | 3.0                    | 68.4 | 1.8     | 0.0            | 1.2  | 67.0              | 69.8             |
| Turkey             | 975  | 28.6 | 13.1 | 41.5 | 14.7 | 2.1                    | 41.5 | 0.0     | 0.3            | 1.8  | 40.7              | 42.0             |
| United States      | 1126 | 13.2 | 17.7 | 63.1 | 5.5  | 0.5                    | 63.1 | 0.0     | 0.2            | 0.3  | 63.9              | 62.5             |
| International Avg. | .    | 20.1 | 15.5 | 54.9 | 7.6  | 1.8                    | 54.9 | 0.1     | 0.3            | 1.4  | 53.1              | 57.1             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Earth Science  
 Label: Fossil fuels ( S022074 - K15 )  
 Item Type = MC Key = B

| COUNTRY            | N    | A    | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 504  | 15.4 | 51.3 | 23.7 | 7.0  | 2.6                    | 51.3 | 0.1     | 0.3            | 2.2  | 44.6              | 57.8             |
| Belgium (Flemish)  | 657  | 23.7 | 50.7 | 20.1 | 3.2  | 2.2                    | 50.7 | 0.2     | 1.0            | 1.0  | 44.0              | 57.2             |
| Bulgaria           | 404  | 21.4 | 63.5 | 8.7  | 2.3  | 4.1                    | 63.5 | 1.0     | 0.8            | 2.3  | 60.8              | 66.4             |
| Canada             | 1112 | 19.3 | 55.4 | 16.9 | 7.9  | 0.5                    | 55.4 | 0.0     | 0.1            | 0.4  | 54.1              | 56.5             |
| Chile              | 744  | 25.5 | 39.1 | 23.3 | 9.7  | 2.3                    | 39.1 | 0.0     | 0.1            | 2.2  | 34.6              | 44.1             |
| Chinese Taipei     | 718  | 9.7  | 79.4 | 6.1  | 4.6  | 0.1                    | 79.4 | 0.0     | 0.1            | 0.0  | 76.5              | 82.4             |
| Cyprus             | 387  | 40.0 | 33.5 | 16.0 | 9.7  | 0.8                    | 33.5 | 0.2     | 0.0            | 0.6  | 28.3              | 38.3             |
| Czech Republic     | 443  | 19.7 | 44.1 | 27.0 | 4.7  | 4.5                    | 44.1 | 1.1     | 0.3            | 3.1  | 35.7              | 54.5             |
| England            | 373  | 9.0  | 76.6 | 9.1  | 4.1  | 1.2                    | 76.6 | 0.0     | 0.0            | 1.2  | 79.6              | 74.1             |
| Finland            | 367  | 21.0 | 47.6 | 18.5 | 11.5 | 1.5                    | 47.6 | 0.0     | 0.0            | 1.5  | 45.9              | 49.3             |
| Hong Kong, SAR     | 656  | 14.1 | 71.6 | 5.4  | 8.6  | 0.4                    | 71.6 | 0.2     | 0.2            | 0.0  | 64.1              | 79.3             |
| Hungary            | 400  | 16.6 | 57.9 | 15.7 | 8.2  | 1.7                    | 57.9 | 0.0     | 0.3            | 1.4  | 54.9              | 62.4             |
| Indonesia          | 737  | 11.4 | 72.9 | 10.8 | 4.6  | 0.3                    | 72.9 | 0.0     | 0.0            | 0.3  | 69.5              | 76.3             |
| Iran, Islamic Rep. | 658  | 12.0 | 74.7 | 8.7  | 4.1  | 0.5                    | 74.7 | 0.0     | 0.3            | 0.2  | 75.5              | 74.2             |
| Israel             | 523  | 26.8 | 43.7 | 15.6 | 9.9  | 4.0                    | 43.7 | 0.0     | 1.4            | 2.6  | 41.7              | 45.6             |
| Italy              | 419  | 22.1 | 58.6 | 12.8 | 5.3  | 1.2                    | 58.6 | 0.0     | 0.0            | 1.2  | 57.9              | 59.2             |
| Japan              | 590  | 27.2 | 47.9 | 14.2 | 10.0 | 0.7                    | 47.9 | 0.0     | 0.3            | 0.3  | 43.2              | 52.7             |
| Jordan             | 639  | 5.7  | 85.7 | 2.7  | 4.2  | 1.7                    | 85.7 | 0.4     | 0.0            | 1.3  | 91.0              | 81.2             |
| Korea, Rep. of     | 764  | 20.7 | 63.5 | 6.1  | 9.7  | 0.0                    | 63.5 | 0.0     | 0.0            | 0.0  | 61.0              | 65.9             |
| Latvia (LSS)       | 357  | 29.5 | 36.9 | 22.6 | 6.3  | 4.8                    | 36.9 | 0.0     | 0.8            | 3.9  | 35.3              | 38.9             |
| Lithuania          | 299  | 22.8 | 22.8 | 22.1 | 28.8 | 3.5                    | 22.8 | 0.0     | 0.0            | 3.5  | 18.2              | 28.6             |
| Macedonia, Rep. of | 500  | 18.1 | 60.8 | 11.8 | 4.6  | 4.7                    | 60.8 | 0.0     | 1.3            | 3.3  | 56.8              | 64.8             |
| Malaysia           | 699  | 27.9 | 48.6 | 19.4 | 3.3  | 0.7                    | 48.6 | 0.0     | 0.3            | 0.4  | 45.5              | 52.1             |
| Moldova            | 460  | 26.0 | 42.0 | 18.3 | 12.2 | 1.6                    | 42.0 | 0.2     | 0.4            | 1.0  | 41.2              | 43.0             |
| Morocco            | 694  | 46.6 | 12.6 | 17.9 | 18.8 | 4.0                    | 12.6 | 0.9     | 0.7            | 2.4  | 11.9              | 13.3             |
| Netherlands        | 369  | 16.4 | 48.8 | 27.4 | 6.2  | 1.3                    | 48.8 | 0.1     | 0.5            | 0.8  | 48.5              | 49.3             |
| New Zealand        | 447  | 17.3 | 48.4 | 20.2 | 13.1 | 1.0                    | 48.4 | 0.2     | 0.2            | 0.6  | 43.9              | 53.8             |
| Philippines        | 813  | 17.0 | 43.2 | 29.0 | 9.7  | 1.1                    | 43.2 | 0.1     | 0.4            | 0.5  | 44.9              | 41.3             |
| Romania            | 428  | 15.7 | 59.2 | 14.8 | 7.6  | 2.7                    | 59.2 | 0.3     | 0.9            | 1.4  | 63.4              | 56.0             |
| Russian Federation | 549  | 21.1 | 55.0 | 12.3 | 9.8  | 1.8                    | 55.0 | 0.0     | 0.5            | 1.3  | 45.1              | 65.1             |
| Singapore          | 624  | 6.5  | 83.2 | 6.8  | 3.1  | 0.3                    | 83.2 | 0.0     | 0.1            | 0.3  | 81.6              | 84.6             |
| Slovak Republic    | 430  | 20.6 | 45.5 | 31.0 | 1.6  | 1.3                    | 45.5 | 0.0     | 0.0            | 1.3  | 37.7              | 54.7             |
| Slovenia           | 396  | 14.9 | 69.4 | 12.0 | 3.0  | 0.7                    | 69.4 | 0.0     | 0.0            | 0.7  | 71.6              | 66.8             |
| South Africa       | 1034 | 24.5 | 19.2 | 40.8 | 12.6 | 3.0                    | 19.2 | 0.3     | 1.0            | 1.7  | 20.1              | 18.4             |
| Thailand           | 713  | 20.1 | 40.1 | 30.7 | 7.8  | 1.3                    | 40.1 | 0.0     | 0.2            | 1.0  | 35.0              | 46.0             |
| Tunisia            | 628  | 21.3 | 20.5 | 13.9 | 39.4 | 5.0                    | 20.5 | 3.1     | 0.2            | 1.7  | 15.3              | 25.8             |
| Turkey             | 976  | 13.3 | 53.4 | 22.5 | 9.2  | 1.7                    | 53.4 | 0.0     | 0.3            | 1.4  | 48.9              | 56.2             |
| United States      | 1126 | 13.6 | 60.5 | 17.7 | 7.6  | 0.6                    | 60.5 | 0.0     | 0.2            | 0.4  | 60.2              | 60.7             |
| International Avg. | .    | 19.9 | 52.3 | 17.2 | 8.8  | 1.9                    | 52.3 | 0.2     | 0.4            | 1.3  | 49.7              | 55.2             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Environmental and Resource Issues  
 Label: Main cause of acid rain ( S022240 - K16 )  
 Item Type = MC Key = C

| COUNTRY            | N    | A    | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 504  | 38.3 | 8.7  | 39.1 | 11.8 | 2.2                    | 39.1 | 0.5     | 0.3            | 1.3  | 34.4              | 43.6             |
| Belgium (Flemish)  | 657  | 38.1 | 28.0 | 17.8 | 13.4 | 2.7                    | 17.8 | 0.9     | 1.0            | 0.8  | 15.8              | 19.7             |
| Bulgaria           | 404  | 23.4 | 25.2 | 42.3 | 5.3  | 3.8                    | 42.3 | 0.8     | 0.8            | 2.2  | 34.5              | 50.2             |
| Canada             | 1112 | 33.9 | 25.7 | 30.2 | 9.0  | 1.2                    | 30.2 | 0.1     | 0.1            | 0.9  | 25.3              | 35.2             |
| Chile              | 744  | 18.1 | 37.8 | 19.2 | 22.7 | 2.2                    | 19.2 | 0.0     | 0.1            | 2.1  | 15.2              | 23.8             |
| Chinese Taipei     | 718  | 4.9  | 16.5 | 69.2 | 8.6  | 0.8                    | 69.2 | 0.2     | 0.1            | 0.4  | 68.0              | 70.5             |
| Cyprus             | 389  | 28.6 | 29.2 | 32.5 | 8.5  | 1.2                    | 32.5 | 0.9     | 0.0            | 0.3  | 31.2              | 33.7             |
| Czech Republic     | 443  | 13.5 | 33.0 | 35.5 | 15.4 | 2.6                    | 35.5 | 0.6     | 0.3            | 1.7  | 35.4              | 35.7             |
| England            | 373  | 35.7 | 9.7  | 43.8 | 9.1  | 1.7                    | 43.8 | 0.5     | 0.0            | 1.2  | 43.8              | 43.7             |
| Finland            | 367  | 26.6 | 46.9 | 18.7 | 6.1  | 1.7                    | 18.7 | 0.0     | 0.0            | 1.7  | 16.2              | 21.4             |
| Hong Kong, SAR     | 656  | 14.1 | 29.6 | 40.1 | 15.9 | 0.3                    | 40.1 | 0.0     | 0.2            | 0.2  | 36.8              | 43.5             |
| Hungary            | 400  | 13.8 | 50.7 | 22.5 | 10.4 | 2.6                    | 22.5 | 1.7     | 0.3            | 0.6  | 22.5              | 22.5             |
| Indonesia          | 737  | 21.0 | 35.9 | 29.0 | 12.8 | 1.3                    | 29.0 | 0.0     | 0.0            | 1.3  | 31.9              | 26.2             |
| Iran, Islamic Rep. | 658  | 14.1 | 31.1 | 35.7 | 16.6 | 2.5                    | 35.7 | 0.0     | 0.3            | 2.1  | 37.5              | 34.5             |
| Israel             | 523  | 20.7 | 40.6 | 21.3 | 12.2 | 5.3                    | 21.3 | 0.5     | 1.4            | 3.4  | 16.6              | 25.5             |
| Italy              | 419  | 11.8 | 50.9 | 17.1 | 19.4 | 0.8                    | 17.1 | 0.0     | 0.0            | 0.8  | 15.9              | 18.3             |
| Japan              | 590  | 15.1 | 22.6 | 41.3 | 20.5 | 0.5                    | 41.3 | 0.0     | 0.3            | 0.2  | 38.3              | 44.4             |
| Jordan             | 639  | 13.7 | 32.7 | 43.8 | 7.6  | 2.3                    | 43.8 | 1.1     | 0.0            | 1.2  | 50.1              | 38.3             |
| Korea, Rep. of     | 764  | 3.5  | 5.9  | 54.0 | 36.5 | 0.0                    | 54.0 | 0.0     | 0.0            | 0.0  | 51.8              | 56.3             |
| Latvia (LSS)       | 357  | 31.8 | 22.3 | 31.8 | 10.5 | 3.6                    | 31.8 | 1.6     | 0.8            | 1.2  | 30.2              | 33.9             |
| Lithuania          | 299  | 16.2 | 38.3 | 31.5 | 8.3  | 5.7                    | 31.5 | 0.0     | 0.0            | 5.7  | 25.4              | 39.3             |
| Macedonia, Rep. of | 500  | 24.2 | 39.7 | 20.8 | 8.7  | 6.7                    | 20.8 | 0.6     | 1.3            | 4.7  | 21.1              | 20.5             |
| Malaysia           | 699  | 22.8 | 22.1 | 42.4 | 11.4 | 1.2                    | 42.4 | 0.0     | 0.3            | 0.9  | 43.5              | 41.2             |
| Moldova            | 460  | 18.3 | 37.9 | 26.3 | 14.7 | 2.9                    | 26.3 | 0.5     | 0.4            | 2.0  | 22.9              | 30.5             |
| Morocco            | 694  | 11.2 | 49.3 | 8.7  | 26.2 | 4.6                    | 8.7  | 1.1     | 1.0            | 2.5  | 9.3               | 8.4              |
| Netherlands        | 369  | 23.1 | 31.2 | 30.8 | 12.8 | 2.2                    | 30.8 | 0.9     | 0.5            | 0.8  | 28.0              | 34.3             |
| New Zealand        | 447  | 49.2 | 10.0 | 27.2 | 12.3 | 1.3                    | 27.2 | 0.3     | 0.2            | 0.8  | 24.0              | 31.1             |
| Philippines        | 813  | 25.1 | 28.9 | 29.7 | 14.8 | 1.4                    | 29.7 | 0.3     | 0.5            | 0.6  | 31.1              | 28.2             |
| Romania            | 428  | 26.8 | 36.9 | 21.6 | 9.0  | 5.7                    | 21.6 | 2.1     | 0.9            | 2.7  | 23.2              | 20.3             |
| Russian Federation | 549  | 32.8 | 22.9 | 28.1 | 13.5 | 2.7                    | 28.1 | 0.7     | 0.5            | 1.5  | 28.3              | 27.9             |
| Singapore          | 624  | 11.5 | 10.1 | 66.3 | 11.8 | 0.3                    | 66.3 | 0.0     | 0.1            | 0.3  | 59.9              | 71.9             |
| Slovak Republic    | 430  | 12.7 | 35.1 | 36.0 | 14.2 | 2.0                    | 36.0 | 0.5     | 0.0            | 1.5  | 31.9              | 40.8             |
| Slovenia           | 396  | 19.6 | 21.3 | 44.3 | 13.1 | 1.6                    | 44.3 | 0.5     | 0.0            | 1.1  | 42.4              | 46.5             |
| South Africa       | 1034 | 25.5 | 28.7 | 28.9 | 14.0 | 3.0                    | 28.9 | 0.3     | 1.2            | 1.5  | 27.5              | 30.3             |
| Thailand           | 713  | 11.2 | 31.1 | 25.7 | 30.7 | 1.2                    | 25.7 | 0.0     | 0.2            | 1.0  | 25.0              | 26.5             |
| Tunisia            | 628  | 19.2 | 29.4 | 33.6 | 6.9  | 10.8                   | 33.6 | 9.3     | 0.2            | 1.3  | 33.0              | 34.3             |
| Turkey             | 976  | 32.2 | 20.4 | 35.4 | 9.9  | 2.0                    | 35.4 | 0.0     | 0.3            | 1.7  | 31.6              | 37.8             |
| United States      | 1126 | 35.1 | 15.6 | 37.2 | 11.0 | 1.1                    | 37.2 | 0.1     | 0.3            | 0.7  | 32.4              | 41.7             |
| International Avg. | .    | 22.0 | 28.7 | 33.1 | 13.6 | 2.5                    | 33.1 | 0.7     | 0.4            | 1.4  | 31.4              | 35.1             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Chemistry  
 Label: Reaction of chlorine and sodium ( S022206 - K17 )  
 Item Type = MC Key = B

| COUNTRY            | N    | A    | B    | C    | D    | E    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 504  | 18.9 | 36.1 | 14.6 | 11.9 | 16.9 | 1.7                    | 36.1 | 0.0     | 0.3            | 1.4  | 39.5              | 32.9             |
| Belgium (Flemish)  | 657  | 22.8 | 19.9 | 13.8 | 18.4 | 21.9 | 3.3                    | 19.9 | 0.0     | 1.0            | 2.3  | 21.9              | 17.9             |
| Bulgaria           | 404  | 10.6 | 72.2 | 7.6  | 2.3  | 3.8  | 3.5                    | 72.2 | 0.2     | 0.8            | 2.5  | 73.3              | 71.4             |
| Canada             | 1112 | 24.0 | 21.3 | 8.9  | 22.7 | 22.7 | 0.5                    | 21.3 | 0.0     | 0.1            | 0.3  | 21.7              | 20.9             |
| Chile              | 744  | 30.6 | 35.2 | 8.7  | 14.8 | 6.6  | 4.1                    | 35.2 | 0.0     | 0.4            | 3.7  | 40.9              | 28.9             |
| Chinese Taipei     | 718  | 24.8 | 63.2 | 5.8  | 4.3  | 1.7  | 0.3                    | 63.2 | 0.0     | 0.1            | 0.1  | 60.1              | 66.2             |
| Cyprus             | 387  | 9.7  | 69.1 | 7.2  | 2.3  | 11.4 | 0.3                    | 69.1 | 0.0     | 0.0            | 0.3  | 69.7              | 68.6             |
| Czech Republic     | 443  | 24.2 | 55.4 | 8.6  | 0.7  | 9.8  | 1.4                    | 55.4 | 0.4     | 0.3            | 0.7  | 52.9              | 58.3             |
| England            | 373  | 14.8 | 49.2 | 12.0 | 6.9  | 17.1 | 0.0                    | 49.2 | 0.0     | 0.0            | 0.0  | 48.7              | 49.6             |
| Finland            | 367  | 25.4 | 50.4 | 6.8  | 5.0  | 11.9 | 0.5                    | 50.4 | 0.0     | 0.0            | 0.5  | 52.6              | 48.2             |
| Hong Kong, SAR     | 656  | 20.2 | 35.7 | 17.7 | 14.3 | 11.8 | 0.3                    | 35.7 | 0.0     | 0.2            | 0.1  | 36.1              | 35.3             |
| Hungary            | 400  | 19.9 | 51.4 | 8.6  | 12.3 | 6.0  | 1.8                    | 51.4 | 0.2     | 0.3            | 1.3  | 53.3              | 49.0             |
| Indonesia          | 737  | 24.0 | 26.5 | 8.6  | 32.1 | 8.2  | 0.6                    | 26.5 | 0.0     | 0.0            | 0.6  | 25.7              | 27.2             |
| Iran, Islamic Rep. | 658  | 13.9 | 43.7 | 15.6 | 19.4 | 5.8  | 1.7                    | 43.7 | 0.0     | 0.5            | 1.2  | 42.4              | 44.6             |
| Israel             | 523  | 24.0 | 39.4 | 9.0  | 5.2  | 16.9 | 5.5                    | 39.4 | 0.2     | 1.6            | 3.8  | 38.6              | 40.0             |
| Italy              | 419  | 16.3 | 37.5 | 8.5  | 14.6 | 18.6 | 4.5                    | 37.5 | 0.0     | 0.0            | 4.5  | 39.8              | 35.3             |
| Japan              | 590  | 22.2 | 57.3 | 3.0  | 12.6 | 4.1  | 0.8                    | 57.3 | 0.0     | 0.3            | 0.5  | 59.0              | 55.5             |
| Jordan             | 639  | 18.5 | 50.7 | 15.1 | 5.1  | 10.2 | 0.5                    | 50.7 | 0.3     | 0.0            | 0.2  | 51.6              | 49.9             |
| Korea, Rep. of     | 764  | 15.2 | 66.0 | 5.3  | 11.0 | 2.4  | 0.0                    | 66.0 | 0.0     | 0.0            | 0.0  | 67.5              | 64.6             |
| Latvia (LSS)       | 357  | 18.1 | 53.6 | 7.6  | 12.1 | 6.4  | 2.3                    | 53.6 | 0.0     | 0.8            | 1.5  | 56.5              | 50.0             |
| Lithuania          | 299  | 24.7 | 44.9 | 12.8 | 2.4  | 14.1 | 1.0                    | 44.9 | 0.0     | 0.0            | 1.0  | 46.9              | 42.4             |
| Macedonia, Rep. of | 500  | 18.4 | 53.5 | 7.1  | 12.3 | 4.8  | 3.8                    | 53.5 | 0.0     | 1.6            | 2.3  | 55.8              | 51.2             |
| Malaysia           | 699  | 18.7 | 35.3 | 20.7 | 10.0 | 13.7 | 1.6                    | 35.3 | 0.0     | 0.3            | 1.3  | 36.3              | 34.1             |
| Moldova            | 460  | 26.3 | 35.5 | 6.9  | 4.4  | 24.9 | 2.1                    | 35.5 | 0.5     | 0.4            | 1.3  | 30.0              | 42.4             |
| Morocco            | 694  | 15.8 | 9.2  | 5.7  | 39.5 | 25.2 | 4.6                    | 9.2  | 0.4     | 1.0            | 3.2  | 10.1              | 8.4              |
| Netherlands        | 369  | 32.7 | 14.3 | 15.9 | 14.1 | 21.4 | 1.7                    | 14.3 | 0.4     | 0.5            | 0.9  | 11.4              | 17.8             |
| New Zealand        | 447  | 18.4 | 34.0 | 16.7 | 12.9 | 17.1 | 0.9                    | 34.0 | 0.5     | 0.2            | 0.2  | 31.6              | 36.8             |
| Philippines        | 813  | 35.8 | 23.9 | 18.8 | 7.7  | 12.7 | 1.2                    | 23.9 | 0.0     | 0.5            | 0.6  | 25.1              | 22.6             |
| Romania            | 426  | 19.8 | 36.9 | 5.4  | 16.5 | 18.1 | 3.3                    | 36.9 | 0.8     | 0.9            | 1.6  | 39.5              | 34.9             |
| Russian Federation | 549  | 11.8 | 56.0 | 15.7 | 1.4  | 10.5 | 4.6                    | 56.0 | 0.2     | 0.6            | 3.8  | 52.2              | 59.9             |
| Singapore          | 624  | 19.1 | 48.7 | 11.0 | 12.7 | 8.1  | 0.5                    | 48.7 | 0.0     | 0.1            | 0.4  | 48.3              | 49.0             |
| Slovak Republic    | 430  | 22.1 | 55.5 | 5.2  | 6.8  | 9.0  | 1.3                    | 55.5 | 0.0     | 0.4            | 0.9  | 54.1              | 57.3             |
| Slovenia           | 396  | 17.9 | 57.3 | 4.9  | 5.9  | 12.7 | 1.2                    | 57.3 | 0.0     | 0.0            | 1.2  | 59.5              | 54.9             |
| South Africa       | 1034 | 24.0 | 27.3 | 22.0 | 4.7  | 20.2 | 1.8                    | 27.3 | 0.4     | 1.2            | 0.2  | 26.0              | 28.7             |
| Thailand           | 713  | 7.5  | 42.8 | 9.0  | 9.0  | 30.7 | 1.1                    | 42.8 | 0.0     | 0.2            | 0.9  | 46.2              | 38.8             |
| Tunisia            | 628  | 11.3 | 28.8 | 3.6  | 23.7 | 28.3 | 4.2                    | 28.8 | 3.4     | 0.2            | 0.6  | 28.5              | 29.2             |
| Turkey             | 976  | 19.7 | 23.1 | 20.3 | 12.7 | 19.9 | 4.2                    | 23.1 | 0.3     | 0.3            | 3.7  | 25.5              | 21.7             |
| United States      | 1126 | 19.1 | 41.7 | 13.6 | 13.5 | 11.1 | 1.0                    | 41.7 | 0.0     | 0.4            | 0.6  | 42.8              | 40.6             |
| International Avg. | .    | 20.0 | 42.2 | 10.7 | 11.5 | 13.6 | 1.9                    | 42.2 | 0.2     | 0.4            | 1.3  | 42.7              | 41.7             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Life Science  
 Label: Advantage of having two ears ( S022160 - K18 )  
 Item Type = SA Key = X

| COUNTRY            | N    | NOT REACHED |      |     |      |      |      |      |      |      |     | 1.GIRL | 2.BOY   |         |
|--------------------|------|-------------|------|-----|------|------|------|------|------|------|-----|--------|---------|---------|
|                    |      | 10          | 11   | 12  | 19   | 70   | 71   | 79   | 99   | V1   | ED  | OMIT   | % Right | % Right |
| Australia          | 504  | 7.3         | 46.5 | 5.9 | 0.0  | 30.8 | 2.1  | 2.5  | 4.8  | 59.7 | 0.3 | 4.5    | 59.8    | 59.7    |
| Belgium (Flemish)  | 657  | 6.6         | 43.3 | 4.0 | 0.4  | 33.5 | 1.2  | 4.6  | 6.5  | 54.2 | 1.0 | 5.6    | 51.5    | 56.8    |
| Bulgaria           | 404  | 6.6         | 14.1 | 1.1 | 0.1  | 49.8 | 4.2  | 5.3  | 18.8 | 21.8 | 1.0 | 17.9   | 21.5    | 22.3    |
| Canada             | 1112 | 12.4        | 53.3 | 3.4 | 0.4  | 23.5 | 1.3  | 4.0  | 1.8  | 69.5 | 0.1 | 1.6    | 71.7    | 66.9    |
| Chile              | 744  | 3.8         | 18.9 | 4.2 | 0.1  | 49.5 | 1.6  | 5.2  | 16.7 | 27.0 | 0.5 | 16.2   | 22.4    | 32.1    |
| Chinese Taipei     | 718  | 14.0        | 14.4 | 0.6 | 5.8  | 55.5 | 2.5  | 4.0  | 3.1  | 34.9 | 0.1 | 3.0    | 30.8    | 39.0    |
| Cyprus             | 386  | 4.1         | 19.2 | 5.1 | 1.8  | 50.8 | 0.2  | 8.8  | 10.0 | 30.1 | 0.0 | 10.0   | 28.8    | 31.4    |
| Czech Republic     | 443  | 5.5         | 49.2 | 3.0 | 0.8  | 27.4 | 3.4  | 4.0  | 6.7  | 58.5 | 0.3 | 6.4    | 60.4    | 56.3    |
| England            | 373  | 10.6        | 52.2 | 5.4 | 0.0  | 25.8 | 0.3  | 3.3  | 2.4  | 68.2 | 0.0 | 2.4    | 65.2    | 70.6    |
| Finland            | 367  | 14.0        | 53.7 | 7.4 | 1.1  | 18.6 | 1.2  | 2.5  | 1.5  | 76.2 | 0.0 | 1.5    | 79.1    | 73.1    |
| Hong Kong, SAR     | 655  | 10.5        | 22.8 | 1.3 | 0.1  | 49.4 | 0.5  | 9.7  | 5.7  | 34.8 | 0.2 | 5.5    | 32.4    | 37.3    |
| Hungary            | 400  | 11.5        | 35.4 | 6.2 | 0.3  | 29.0 | 1.2  | 4.3  | 12.1 | 53.4 | 0.3 | 11.8   | 49.9    | 58.7    |
| Indonesia          | 737  | 2.6         | 3.5  | 0.3 | 1.2  | 77.8 | 1.6  | 12.1 | 0.9  | 7.6  | 0.0 | 0.9    | 4.9     | 10.2    |
| Iran, Islamic Rep. | 658  | 5.3         | 15.4 | 0.4 | 0.2  | 52.6 | 0.0  | 17.2 | 8.8  | 21.4 | 0.5 | 8.3    | 11.3    | 28.1    |
| Israel             | 523  | 9.5         | 28.1 | 4.3 | 1.5  | 34.9 | 0.5  | 5.4  | 15.8 | 43.4 | 1.9 | 13.9   | 42.9    | 43.9    |
| Italy              | 419  | 7.1         | 30.0 | 1.6 | 0.5  | 43.4 | 1.0  | 5.9  | 10.4 | 39.3 | 0.0 | 10.4   | 35.7    | 42.8    |
| Japan              | 590  | 3.8         | 23.5 | 0.3 | 0.2  | 27.8 | 6.9  | 27.6 | 9.9  | 27.8 | 0.3 | 9.5    | 29.2    | 26.5    |
| Jordan             | 639  | 2.6         | 15.9 | 4.8 | 1.0  | 36.0 | 0.8  | 25.0 | 13.9 | 24.3 | 0.0 | 13.9   | 20.1    | 27.9    |
| Korea, Rep. of     | 764  | 19.5        | 15.6 | 0.6 | 0.4  | 36.6 | 9.6  | 10.9 | 6.7  | 36.2 | 0.0 | 6.7    | 32.5    | 39.8    |
| Latvia (LSS)       | 357  | 6.0         | 29.5 | 0.5 | 0.0  | 47.1 | 0.6  | 2.6  | 13.8 | 36.0 | 0.8 | 12.9   | 33.7    | 38.9    |
| Lithuania          | 299  | 4.4         | 25.7 | 5.1 | 0.8  | 29.2 | 0.9  | 16.9 | 16.9 | 36.1 | 0.0 | 16.9   | 33.6    | 39.3    |
| Macedonia, Rep. of | 500  | 10.1        | 15.2 | 3.3 | 7.7  | 26.2 | 0.9  | 9.8  | 27.0 | 36.2 | 1.6 | 25.4   | 36.2    | 36.1    |
| Malaysia           | 698  | 32.6        | 9.2  | 0.8 | 0.8  | 46.1 | 1.4  | 4.9  | 4.2  | 43.4 | 0.3 | 3.8    | 44.3    | 42.4    |
| Moldova            | 460  | 7.8         | 18.4 | 1.7 | 1.2  | 20.7 | 2.1  | 16.7 | 31.3 | 29.2 | 0.4 | 30.9   | 28.9    | 29.5    |
| Morocco            | 695  | 2.5         | 5.7  | 2.7 | 5.1  | 28.3 | 1.2  | 21.0 | 33.5 | 16.0 | 2.4 | 31.2   | 15.1    | 16.9    |
| Netherlands        | 369  | 14.5        | 44.7 | 1.7 | 0.0  | 30.1 | 0.2  | 6.6  | 2.3  | 60.8 | 0.5 | 1.9    | 59.2    | 62.9    |
| New Zealand        | 447  | 6.6         | 55.7 | 4.4 | 0.5  | 22.4 | 1.8  | 5.4  | 3.2  | 67.2 | 0.2 | 3.0    | 68.8    | 65.2    |
| Philippines        | 813  | 1.6         | 3.1  | 0.6 | 9.3  | 25.2 | 0.2  | 32.1 | 27.9 | 14.6 | 0.5 | 27.4   | 16.9    | 12.0    |
| Romania            | 428  | 4.3         | 17.3 | 1.7 | 0.2  | 50.1 | 2.3  | 4.3  | 19.8 | 23.5 | 0.9 | 18.9   | 27.6    | 20.4    |
| Russian Federation | 549  | 0.9         | 17.7 | 1.5 | 7.9  | 28.3 | 0.8  | 10.3 | 32.5 | 28.1 | 1.1 | 31.4   | 24.0    | 32.2    |
| Singapore          | 624  | 7.4         | 30.4 | 8.6 | 2.3  | 44.0 | 1.4  | 4.3  | 1.7  | 48.7 | 0.1 | 1.7    | 44.7    | 52.2    |
| Slovak Republic    | 430  | 3.5         | 30.1 | 0.7 | 0.0  | 48.8 | 1.9  | 5.4  | 9.5  | 34.3 | 0.4 | 9.1    | 32.5    | 36.5    |
| Slovenia           | 396  | 9.2         | 39.8 | 4.1 | 0.2  | 31.7 | 0.7  | 6.2  | 8.2  | 53.2 | 0.0 | 8.2    | 53.1    | 53.4    |
| South Africa       | 1034 | 0.8         | 5.3  | 2.9 | 0.2  | 14.8 | 0.5  | 29.6 | 45.7 | 9.2  | 1.2 | 44.6   | 7.7     | 10.8    |
| Thailand           | 713  | 8.1         | 1.3  | 1.1 | 63.6 | 9.2  | 1.9  | 10.0 | 4.7  | 74.2 | 0.2 | 4.5    | 75.8    | 72.2    |
| Tunisia            | 626  | 2.8         | 11.5 | 1.5 | 2.3  | 48.9 | 17.0 | 10.5 | 5.5  | 18.1 | 0.2 | 5.3    | 17.5    | 18.7    |
| Turkey             | 976  | 8.2         | 13.5 | 9.4 | 2.1  | 41.0 | 5.7  | 6.7  | 13.3 | 33.3 | 0.4 | 13.0   | 33.2    | 33.3    |
| United States      | 1126 | 5.8         | 52.0 | 2.7 | 0.0  | 28.7 | 0.8  | 5.0  | 5.0  | 60.5 | 0.4 | 4.7    | 56.9    | 63.9    |
| International Avg. | .    | 7.8         | 25.8 | 3.0 | 3.2  | 36.1 | 2.2  | 9.8  | 12.2 | 39.8 | 0.5 | 11.7   | 38.4    | 41.1    |

V1 = % Scoring 1 or better V2 = % Scoring 2 or better V3 = % Scoring 3 or better  
 Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.  
 Because of missing gender information, some totals may appear inconsistent

Science: Physics  
 Label: Angle of reflected light ray ( S022058 - K19 )  
 Item Type = MC Key = B

| COUNTRY            | N    | A    | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 504  | 2.8  | 72.1 | 12.4 | 12.0 | 0.7                    | 72.1 | 0.0     | 0.7            | 0.0  | 69.1              | 75.1             |
| Belgium (Flemish)  | 657  | 5.5  | 65.7 | 16.3 | 11.6 | 1.0                    | 65.7 | 0.0     | 1.0            | 0.0  | 58.4              | 72.6             |
| Bulgaria           | 404  | 5.8  | 70.7 | 10.5 | 7.0  | 6.1                    | 70.7 | 0.2     | 1.4            | 4.5  | 67.4              | 74.1             |
| Canada             | 1112 | 3.3  | 68.5 | 14.8 | 13.2 | 0.1                    | 68.5 | 0.0     | 0.1            | 0.0  | 64.3              | 73.1             |
| Chile              | 744  | 7.9  | 41.2 | 29.7 | 19.4 | 1.8                    | 41.2 | 0.0     | 0.8            | 0.9  | 39.4              | 43.3             |
| Chinese Taipei     | 718  | 3.1  | 81.0 | 4.6  | 10.9 | 0.4                    | 81.0 | 0.0     | 0.1            | 0.3  | 79.5              | 82.5             |
| Cyprus             | 388  | 3.2  | 68.5 | 9.5  | 18.5 | 0.3                    | 68.5 | 0.0     | 0.0            | 0.3  | 68.3              | 68.7             |
| Czech Republic     | 443  | 6.5  | 77.0 | 6.4  | 9.8  | 0.3                    | 77.0 | 0.0     | 0.3            | 0.0  | 74.7              | 79.7             |
| England            | 373  | 2.7  | 80.5 | 6.2  | 10.7 | 0.0                    | 80.5 | 0.0     | 0.0            | 0.0  | 75.2              | 84.7             |
| Finland            | 367  | 6.8  | 62.8 | 17.8 | 12.4 | 0.2                    | 62.8 | 0.0     | 0.0            | 0.2  | 52.3              | 73.7             |
| Hong Kong, SAR     | 656  | 5.4  | 72.7 | 8.9  | 12.5 | 0.6                    | 72.7 | 0.1     | 0.5            | 0.0  | 69.6              | 75.9             |
| Hungary            | 400  | 6.0  | 67.9 | 11.8 | 13.5 | 0.8                    | 67.9 | 0.0     | 0.6            | 0.2  | 62.9              | 75.5             |
| Indonesia          | 735  | 8.2  | 64.2 | 11.3 | 15.4 | 0.9                    | 64.2 | 0.0     | 0.1            | 0.8  | 67.8              | 60.6             |
| Iran, Islamic Rep. | 658  | 4.2  | 70.9 | 13.0 | 11.3 | 0.6                    | 70.9 | 0.0     | 0.5            | 0.1  | 72.9              | 69.6             |
| Israel             | 523  | 7.0  | 55.9 | 20.5 | 12.5 | 4.1                    | 55.9 | 1.0     | 2.0            | 1.1  | 53.4              | 58.1             |
| Italy              | 419  | 5.2  | 62.6 | 14.6 | 16.6 | 1.1                    | 62.6 | 0.2     | 0.0            | 0.9  | 62.8              | 62.4             |
| Japan              | 590  | 2.4  | 77.6 | 3.8  | 15.8 | 0.5                    | 77.6 | 0.0     | 0.5            | 0.0  | 72.5              | 82.8             |
| Jordan             | 639  | 6.1  | 57.3 | 11.8 | 23.1 | 1.8                    | 57.3 | 0.6     | 0.2            | 1.0  | 53.7              | 60.4             |
| Korea, Rep. of     | 764  | 7.6  | 66.8 | 8.9  | 16.4 | 2.2                    | 66.8 | 0.0     | 0.0            | 0.2  | 61.0              | 72.6             |
| Latvia (LSS)       | 357  | 4.3  | 72.5 | 8.5  | 12.2 | 0.5                    | 72.5 | 0.7     | 1.5            | 0.3  | 69.5              | 76.4             |
| Lithuania          | 299  | 7.2  | 52.3 | 22.6 | 14.6 | 3.4                    | 52.3 | 0.0     | 0.0            | 3.4  | 49.1              | 56.3             |
| Macedonia, Rep. of | 500  | 9.1  | 65.4 | 10.5 | 9.3  | 5.7                    | 65.4 | 0.7     | 3.6            | 1.4  | 63.3              | 67.6             |
| Malaysia           | 699  | 3.0  | 80.6 | 2.6  | 13.3 | 0.6                    | 80.6 | 0.0     | 0.3            | 0.2  | 80.3              | 80.9             |
| Moldova            | 460  | 9.0  | 62.4 | 19.0 | 7.8  | 1.8                    | 62.4 | 0.0     | 1.2            | 0.6  | 61.4              | 63.5             |
| Morocco            | 695  | 15.9 | 39.9 | 22.8 | 12.3 | 9.1                    | 39.9 | 1.5     | 4.1            | 3.5  | 38.1              | 41.1             |
| Netherlands        | 369  | 6.9  | 76.3 | 6.0  | 10.3 | 0.5                    | 76.3 | 0.0     | 0.5            | 0.0  | 69.9              | 84.1             |
| New Zealand        | 447  | 2.4  | 73.9 | 14.3 | 8.5  | 0.9                    | 73.9 | 0.4     | 0.2            | 0.2  | 72.0              | 76.1             |
| Philippines        | 813  | 10.4 | 55.1 | 16.4 | 17.0 | 1.1                    | 55.1 | 0.0     | 0.5            | 0.5  | 55.1              | 55.1             |
| Romania            | 428  | 7.5  | 72.6 | 8.2  | 9.2  | 2.4                    | 72.6 | 0.2     | 1.1            | 1.2  | 73.4              | 72.0             |
| Russian Federation | 549  | 7.5  | 70.4 | 9.7  | 9.1  | 3.3                    | 70.4 | 0.0     | 1.9            | 1.4  | 63.3              | 77.6             |
| Singapore          | 624  | 3.1  | 79.2 | 6.7  | 10.8 | 0.1                    | 79.2 | 0.0     | 0.1            | 0.0  | 75.6              | 82.4             |
| Slovak Republic    | 430  | 8.8  | 69.1 | 11.3 | 9.5  | 1.3                    | 69.1 | 0.0     | 0.4            | 0.9  | 67.0              | 71.7             |
| Slovenia           | 396  | 9.0  | 62.5 | 11.7 | 16.6 | 0.2                    | 62.5 | 0.0     | 0.0            | 0.2  | 59.1              | 66.4             |
| South Africa       | 1034 | 18.3 | 39.1 | 22.1 | 17.2 | 3.3                    | 39.1 | 0.7     | 1.8            | 0.8  | 35.0              | 43.4             |
| Thailand           | 713  | 4.9  | 55.9 | 13.9 | 24.7 | 0.6                    | 55.9 | 0.0     | 0.2            | 0.4  | 51.8              | 60.6             |
| Tunisia            | 627  | 11.2 | 49.6 | 17.2 | 17.8 | 4.2                    | 49.6 | 2.7     | 0.8            | 0.7  | 49.8              | 49.3             |
| Turkey             | 976  | 7.3  | 57.9 | 14.5 | 18.8 | 1.6                    | 57.9 | 0.0     | 0.8            | 0.8  | 59.9              | 56.5             |
| United States      | 1126 | 3.3  | 58.4 | 19.8 | 17.6 | 0.8                    | 58.4 | 0.1     | 0.4            | 0.4  | 55.4              | 61.2             |
| International Avg. | .    | 6.5  | 65.2 | 12.9 | 13.7 | 1.7                    | 65.2 | 0.2     | 0.7            | 0.7  | 62.5              | 68.1             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Physics  
 Label: Rotating forces on wheel ( S022014 - L01 )  
 Item Type = MC Key = D

| COUNTRY            | N    | A    | B    | C    | D    | E    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 501  | 15.1 | 9.4  | 6.3  | 59.6 | 8.1  | 1.4                    | 59.6 | 0.0     | 0.1            | 1.3  | 62.1              | 57.0             |
| Belgium (Flemish)  | 657  | 18.7 | 6.1  | 2.7  | 63.7 | 5.9  | 2.9                    | 63.7 | 0.1     | 0.0            | 2.7  | 62.6              | 64.8             |
| Bulgaria           | 406  | 12.6 | 8.4  | 5.5  | 66.8 | 1.8  | 4.9                    | 66.8 | 1.4     | 0.0            | 3.5  | 67.8              | 65.6             |
| Canada             | 1095 | 15.7 | 6.9  | 6.4  | 66.2 | 3.8  | 1.0                    | 66.2 | 0.1     | 0.0            | 0.9  | 63.5              | 68.6             |
| Chile              | 727  | 15.7 | 7.9  | 8.7  | 60.3 | 5.2  | 2.2                    | 60.3 | 0.0     | 0.0            | 2.2  | 59.7              | 61.0             |
| Chinese Taipei     | 732  | 31.8 | 5.7  | 3.6  | 57.8 | 0.5  | 0.6                    | 57.8 | 0.1     | 0.0            | 0.5  | 53.8              | 61.7             |
| Cyprus             | 387  | 15.6 | 11.6 | 10.9 | 57.3 | 2.8  | 1.8                    | 57.3 | 0.3     | 0.0            | 1.5  | 58.9              | 55.3             |
| Czech Republic     | 438  | 16.5 | 7.1  | 3.0  | 69.3 | 3.3  | 0.7                    | 69.3 | 0.0     | 0.0            | 0.7  | 63.3              | 76.5             |
| England            | 363  | 18.8 | 5.6  | 6.0  | 60.6 | 6.2  | 2.7                    | 60.6 | 0.9     | 0.0            | 1.7  | 56.5              | 64.4             |
| Finland            | 362  | 16.6 | 4.9  | 3.1  | 69.3 | 4.0  | 2.1                    | 69.3 | 0.0     | 0.0            | 2.1  | 62.0              | 78.1             |
| Hong Kong, SAR     | 648  | 22.7 | 6.1  | 5.9  | 61.8 | 3.2  | 0.3                    | 61.8 | 0.2     | 0.2            | 0.0  | 56.2              | 67.2             |
| Hungary            | 400  | 16.6 | 3.1  | 2.1  | 73.5 | 2.8  | 1.9                    | 73.5 | 1.3     | 0.0            | 0.6  | 70.8              | 76.3             |
| Indonesia          | 724  | 15.4 | 16.2 | 8.7  | 52.1 | 6.7  | 0.9                    | 52.1 | 0.0     | 0.0            | 0.9  | 49.1              | 55.0             |
| Iran, Islamic Rep. | 659  | 10.6 | 17.5 | 7.4  | 54.4 | 7.8  | 2.3                    | 54.4 | 0.0     | 0.0            | 2.3  | 54.0              | 54.6             |
| Israel             | 523  | 15.6 | 5.4  | 7.3  | 56.9 | 8.1  | 6.7                    | 56.9 | 4.0     | 0.3            | 2.3  | 60.4              | 53.4             |
| Italy              | 407  | 10.0 | 7.1  | 7.8  | 66.3 | 4.6  | 4.2                    | 66.3 | 0.0     | 0.0            | 4.2  | 67.6              | 64.8             |
| Japan              | 604  | 16.4 | 2.5  | 2.2  | 75.8 | 2.7  | 0.5                    | 75.8 | 0.5     | 0.0            | 0.0  | 69.2              | 81.7             |
| Jordan             | 627  | 14.0 | 6.2  | 11.5 | 59.6 | 7.1  | 1.6                    | 59.6 | 0.3     | 0.0            | 1.3  | 59.5              | 59.6             |
| Korea, Rep. of     | 764  | 24.2 | 5.1  | 3.1  | 63.4 | 3.8  | 0.5                    | 63.4 | 0.3     | 0.0            | 0.1  | 58.8              | 67.8             |
| Latvia (LSS)       | 368  | 14.5 | 4.0  | 3.3  | 71.6 | 4.7  | 1.8                    | 71.6 | 0.7     | 0.0            | 1.1  | 70.1              | 73.2             |
| Lithuania          | 305  | 15.4 | 6.3  | 1.2  | 71.7 | 3.2  | 2.2                    | 71.7 | 0.0     | 0.0            | 2.2  | 66.8              | 77.1             |
| Macedonia, Rep. of | 509  | 10.9 | 5.7  | 11.1 | 53.9 | 11.4 | 7.0                    | 53.9 | 0.1     | 0.2            | 6.7  | 48.9              | 58.4             |
| Malaysia           | 698  | 20.5 | 11.0 | 4.1  | 57.8 | 4.9  | 1.6                    | 57.8 | 0.0     | 0.0            | 1.6  | 55.5              | 60.8             |
| Moldova            | 468  | 12.2 | 13.3 | 7.2  | 62.0 | 3.9  | 1.4                    | 62.0 | 0.4     | 0.0            | 0.9  | 59.7              | 64.6             |
| Morocco            | 673  | 14.7 | 9.6  | 8.7  | 54.9 | 4.3  | 7.8                    | 54.9 | 6.4     | 0.0            | 1.4  | 57.3              | 53.1             |
| Netherlands        | 376  | 18.6 | 5.8  | 3.8  | 69.3 | 2.4  | 0.1                    | 69.3 | 0.0     | 0.0            | 0.1  | 70.3              | 68.3             |
| New Zealand        | 454  | 18.8 | 6.7  | 7.0  | 59.1 | 7.5  | 0.9                    | 59.1 | 0.0     | 0.0            | 0.9  | 52.6              | 64.7             |
| Philippines        | 801  | 16.1 | 7.6  | 16.8 | 48.6 | 10.0 | 0.8                    | 48.6 | 0.0     | 0.0            | 0.8  | 50.0              | 46.9             |
| Romania            | 419  | 13.8 | 11.4 | 5.6  | 63.3 | 2.9  | 3.1                    | 63.3 | 1.3     | 0.2            | 1.5  | 65.4              | 61.4             |
| Russian Federation | 545  | 15.0 | 3.6  | 3.9  | 68.4 | 4.3  | 4.8                    | 68.4 | 0.6     | 0.0            | 4.2  | 62.6              | 74.6             |
| Singapore          | 607  | 22.3 | 9.3  | 3.6  | 59.6 | 4.8  | 0.4                    | 59.6 | 0.0     | 0.0            | 0.4  | 61.1              | 58.0             |
| Slovak Republic    | 433  | 17.2 | 7.9  | 4.4  | 65.7 | 2.1  | 2.6                    | 65.7 | 0.4     | 0.0            | 2.3  | 64.6              | 66.8             |
| Slovenia           | 393  | 13.3 | 4.5  | 5.7  | 69.1 | 4.6  | 2.8                    | 69.1 | 0.8     | 0.0            | 2.0  | 65.0              | 73.8             |
| South Africa       | 1029 | 12.9 | 14.2 | 20.9 | 36.0 | 14.8 | 1.1                    | 36.0 | 0.7     | 0.0            | 0.5  | 36.4              | 35.6             |
| Thailand           | 715  | 12.0 | 9.3  | 5.5  | 67.5 | 5.6  | 0.1                    | 67.5 | 0.0     | 0.0            | 0.1  | 66.6              | 68.6             |
| Tunisia            | 633  | 12.9 | 5.4  | 9.7  | 58.2 | 7.9  | 6.0                    | 58.2 | 2.6     | 0.0            | 3.3  | 55.4              | 61.3             |
| Turkey             | 976  | 22.0 | 10.5 | 4.3  | 57.0 | 4.7  | 1.6                    | 57.0 | 0.0     | 0.0            | 1.6  | 59.0              | 55.7             |
| United States      | 1129 | 14.0 | 8.8  | 9.6  | 62.2 | 5.0  | 0.4                    | 62.2 | 0.0     | 0.1            | 0.3  | 58.3              | 66.6             |
| International Avg. | .    | 16.3 | 7.8  | 6.5  | 61.9 | 5.2  | 2.3                    | 61.9 | 0.6     | 0.0            | 1.6  | 60.0              | 63.8             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent



Science: Life Science  
 Label: Large leaves on seedlings ( S022131 - L02 )  
 Item Type = MC Key = D

| COUNTRY            | N    | A    | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 501  | 15.6 | 10.4 | 5.4  | 68.1 | 0.5                    | 68.1 | 0.0     | 0.1            | 0.4  | 66.4              | 69.9             |
| Belgium (Flemish)  | 657  | 12.6 | 10.9 | 7.4  | 69.0 | 0.1                    | 69.0 | 0.1     | 0.0            | 0.0  | 69.1              | 68.9             |
| Bulgaria           | 406  | 12.1 | 7.3  | 3.8  | 72.7 | 4.2                    | 72.7 | 1.5     | 0.0            | 2.6  | 75.7              | 69.2             |
| Canada             | 1095 | 11.4 | 10.8 | 4.3  | 73.0 | 0.6                    | 73.0 | 0.2     | 0.0            | 0.4  | 71.1              | 74.8             |
| Chile              | 727  | 13.5 | 8.3  | 8.0  | 69.1 | 1.1                    | 69.1 | 0.0     | 0.0            | 1.1  | 69.9              | 68.5             |
| Chinese Taipei     | 732  | 1.6  | 25.8 | 1.0  | 71.4 | 0.1                    | 71.4 | 0.0     | 0.0            | 0.1  | 67.6              | 75.1             |
| Cyprus             | 387  | 6.7  | 11.7 | 9.0  | 72.6 | 0.0                    | 72.6 | 0.0     | 0.0            | 0.0  | 78.1              | 66.0             |
| Czech Republic     | 438  | 8.6  | 9.5  | 3.9  | 77.1 | 0.9                    | 77.1 | 0.0     | 0.0            | 0.9  | 77.9              | 76.1             |
| England            | 363  | 8.6  | 7.7  | 4.2  | 79.0 | 0.4                    | 79.0 | 0.0     | 0.0            | 0.4  | 78.0              | 80.0             |
| Finland            | 362  | 5.6  | 9.0  | 2.6  | 82.2 | 0.5                    | 82.2 | 0.0     | 0.0            | 0.5  | 83.5              | 80.8             |
| Hong Kong, SAR     | 648  | 2.7  | 10.8 | 2.6  | 83.3 | 0.7                    | 83.3 | 0.0     | 0.2            | 0.5  | 84.7              | 81.9             |
| Hungary            | 400  | 4.8  | 14.2 | 0.6  | 79.9 | 0.6                    | 79.9 | 0.3     | 0.0            | 0.3  | 80.2              | 79.3             |
| Indonesia          | 724  | 11.9 | 11.5 | 13.2 | 61.6 | 1.7                    | 61.6 | 0.0     | 0.0            | 1.7  | 59.4              | 63.7             |
| Iran, Islamic Rep. | 659  | 11.3 | 12.0 | 9.4  | 66.0 | 1.3                    | 66.0 | 0.0     | 0.0            | 1.3  | 61.6              | 69.1             |
| Israel             | 523  | 16.8 | 7.6  | 7.0  | 65.6 | 2.9                    | 65.6 | 0.9     | 0.3            | 1.8  | 65.2              | 66.1             |
| Italy              | 407  | 7.6  | 7.4  | 1.8  | 82.1 | 1.2                    | 82.1 | 0.2     | 0.0            | 0.9  | 84.0              | 79.8             |
| Japan              | 604  | 0.8  | 6.4  | 3.1  | 89.4 | 0.3                    | 89.4 | 0.3     | 0.0            | 0.0  | 89.6              | 89.1             |
| Jordan             | 623  | 6.9  | 18.1 | 6.0  | 68.1 | 0.8                    | 68.1 | 0.0     | 0.2            | 0.6  | 67.1              | 69.0             |
| Korea, Rep. of     | 764  | 3.1  | 7.7  | 1.4  | 87.9 | 0.0                    | 87.9 | 0.0     | 0.0            | 0.0  | 87.5              | 88.2             |
| Latvia (LSS)       | 368  | 21.7 | 10.0 | 1.8  | 65.4 | 1.0                    | 65.4 | 0.6     | 0.0            | 0.5  | 59.6              | 71.6             |
| Lithuania          | 305  | 13.1 | 4.8  | 1.0  | 79.4 | 1.7                    | 79.4 | 0.0     | 0.0            | 1.7  | 82.5              | 76.0             |
| Macedonia, Rep. of | 509  | 13.4 | 14.5 | 2.5  | 66.8 | 2.8                    | 66.8 | 0.4     | 0.2            | 2.3  | 68.6              | 65.1             |
| Malaysia           | 698  | 9.0  | 12.3 | 0.4  | 77.7 | 0.6                    | 77.7 | 0.0     | 0.0            | 0.6  | 76.3              | 79.5             |
| Moldova            | 468  | 16.2 | 11.2 | 8.5  | 62.9 | 1.2                    | 62.9 | 0.9     | 0.0            | 0.2  | 58.1              | 68.1             |
| Morocco            | 673  | 22.6 | 15.5 | 16.3 | 42.0 | 3.6                    | 42.0 | 2.8     | 0.0            | 0.8  | 36.5              | 46.0             |
| Netherlands        | 376  | 11.5 | 12.9 | 4.3  | 70.2 | 1.2                    | 70.2 | 0.0     | 0.0            | 1.2  | 69.0              | 71.3             |
| New Zealand        | 456  | 21.4 | 9.7  | 6.3  | 62.0 | 0.6                    | 62.0 | 0.0     | 0.0            | 0.6  | 61.4              | 62.6             |
| Philippines        | 801  | 15.3 | 22.6 | 6.5  | 55.2 | 0.4                    | 55.2 | 0.0     | 0.0            | 0.4  | 57.9              | 52.2             |
| Romania            | 419  | 13.6 | 5.3  | 5.3  | 72.7 | 3.2                    | 72.7 | 1.5     | 0.2            | 1.4  | 79.4              | 66.7             |
| Russian Federation | 545  | 4.7  | 12.9 | 1.0  | 79.0 | 2.4                    | 79.0 | 1.1     | 0.0            | 1.3  | 80.0              | 78.0             |
| Singapore          | 607  | 8.1  | 9.2  | 2.1  | 80.6 | 0.0                    | 80.6 | 0.0     | 0.0            | 0.0  | 79.1              | 82.0             |
| Slovak Republic    | 433  | 10.9 | 6.2  | 3.3  | 79.6 | 0.1                    | 79.6 | 0.0     | 0.0            | 0.1  | 80.9              | 78.3             |
| Slovenia           | 393  | 4.3  | 6.3  | 4.2  | 84.4 | 0.8                    | 84.4 | 0.0     | 0.0            | 0.8  | 87.1              | 81.3             |
| South Africa       | 1029 | 23.7 | 19.7 | 17.7 | 37.8 | 1.1                    | 37.8 | 0.4     | 0.1            | 0.5  | 39.4              | 36.0             |
| Thailand           | 715  | 4.9  | 2.4  | 0.8  | 92.0 | 0.0                    | 92.0 | 0.0     | 0.0            | 0.0  | 93.1              | 90.7             |
| Tunisia            | 634  | 15.5 | 5.9  | 2.7  | 65.4 | 10.5                   | 65.4 | 9.4     | 0.0            | 1.1  | 58.5              | 73.1             |
| Turkey             | 976  | 10.7 | 10.0 | 5.1  | 73.2 | 1.0                    | 73.2 | 0.0     | 0.0            | 1.0  | 78.2              | 69.8             |
| United States      | 1129 | 16.9 | 12.1 | 7.6  | 63.1 | 0.4                    | 63.1 | 0.0     | 0.1            | 0.4  | 60.1              | 66.4             |
| International Avg. | .    | 11.0 | 10.8 | 5.1  | 71.8 | 1.3                    | 71.8 | 0.5     | 0.0            | 0.8  | 71.6              | 71.9             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Life Science  
 Label: Physical characteristic of prey ( S022132 - L03 )  
 Item Type = MC Key = A

| COUNTRY            | N    | A    | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 501  | 45.1 | 15.5 | 23.0 | 14.6 | 1.8                    | 45.1 | 0.7     | 0.1            | 1.0  | 41.1              | 49.3             |
| Belgium (Flemish)  | 657  | 64.4 | 10.4 | 9.0  | 15.9 | 0.4                    | 64.4 | 0.2     | 0.0            | 0.1  | 62.7              | 66.1             |
| Bulgaria           | 406  | 35.2 | 17.8 | 20.3 | 20.1 | 6.6                    | 35.2 | 3.2     | 0.3            | 3.1  | 31.7              | 39.0             |
| Canada             | 1095 | 41.8 | 22.7 | 18.1 | 17.3 | 0.1                    | 41.8 | 0.1     | 0.0            | 0.0  | 37.1              | 46.0             |
| Chile              | 727  | 25.3 | 36.2 | 18.9 | 18.6 | 1.0                    | 25.3 | 0.0     | 0.0            | 1.0  | 23.7              | 26.7             |
| Chinese Taipei     | 732  | 45.9 | 16.3 | 23.2 | 14.2 | 0.4                    | 45.9 | 0.0     | 0.0            | 0.4  | 45.3              | 46.6             |
| Cyprus             | 387  | 33.3 | 26.5 | 23.3 | 16.1 | 0.8                    | 33.3 | 0.3     | 0.0            | 0.5  | 34.1              | 32.3             |
| Czech Republic     | 438  | 39.8 | 17.0 | 19.4 | 23.0 | 0.8                    | 39.8 | 0.4     | 0.0            | 0.4  | 33.5              | 47.2             |
| England            | 363  | 53.9 | 17.7 | 15.5 | 11.8 | 1.1                    | 53.9 | 0.3     | 0.3            | 0.5  | 52.8              | 55.0             |
| Finland            | 362  | 47.9 | 21.4 | 12.7 | 17.2 | 0.8                    | 47.9 | 0.0     | 0.0            | 0.8  | 50.6              | 44.5             |
| Hong Kong, SAR     | 648  | 33.9 | 26.7 | 21.6 | 16.7 | 1.1                    | 33.9 | 0.2     | 0.2            | 0.8  | 33.6              | 34.2             |
| Hungary            | 400  | 22.2 | 51.9 | 16.0 | 4.5  | 5.4                    | 22.2 | 3.7     | 0.0            | 1.7  | 24.5              | 20.3             |
| Indonesia          | 724  | 28.9 | 34.5 | 19.7 | 16.1 | 0.8                    | 28.9 | 0.0     | 0.0            | 0.8  | 27.8              | 29.9             |
| Iran, Islamic Rep. | 659  | 28.7 | 18.1 | 27.5 | 23.9 | 1.8                    | 28.7 | 0.1     | 0.0            | 1.7  | 24.2              | 31.8             |
| Israel             | 523  | 27.2 | 26.4 | 20.9 | 22.2 | 3.3                    | 27.2 | 1.8     | 0.3            | 1.2  | 27.1              | 27.3             |
| Italy              | 407  | 36.5 | 27.3 | 21.0 | 11.7 | 3.5                    | 36.5 | 0.2     | 0.0            | 3.3  | 31.0              | 42.9             |
| Japan              | 604  | 60.7 | 7.8  | 14.9 | 16.2 | 0.4                    | 60.7 | 0.3     | 0.0            | 0.1  | 63.4              | 58.3             |
| Jordan             | 622  | 33.9 | 30.9 | 15.5 | 18.3 | 1.4                    | 33.9 | 0.3     | 0.2            | 0.9  | 28.3              | 38.8             |
| Korea, Rep. of     | 764  | 55.3 | 18.7 | 11.5 | 14.4 | 0.1                    | 55.3 | 0.0     | 0.0            | 0.1  | 48.4              | 61.8             |
| Latvia (LSS)       | .    | .    | .    | .    | .    | .                      | .    | .       | .              | .    | .                 | .                |
| Lithuania          | 305  | 36.9 | 17.5 | 21.8 | 19.0 | 4.8                    | 36.9 | 0.4     | 0.0            | 4.3  | 28.4              | 46.4             |
| Macedonia, Rep. of | 509  | 30.2 | 29.7 | 22.7 | 13.0 | 4.4                    | 30.2 | 0.4     | 0.2            | 3.8  | 30.4              | 30.1             |
| Malaysia           | 698  | 46.2 | 16.0 | 13.2 | 23.5 | 1.1                    | 46.2 | 0.4     | 0.0            | 0.8  | 45.0              | 47.8             |
| Moldova            | 468  | 34.7 | 29.0 | 16.6 | 18.0 | 1.8                    | 34.7 | 0.7     | 0.0            | 1.0  | 30.4              | 39.3             |
| Morocco            | 673  | 16.4 | 30.1 | 28.2 | 14.8 | 10.5                   | 16.4 | 9.0     | 0.0            | 1.5  | 15.0              | 17.5             |
| Netherlands        | 376  | 49.6 | 24.4 | 18.3 | 6.7  | 1.1                    | 49.6 | 0.0     | 0.0            | 1.1  | 48.0              | 51.2             |
| New Zealand        | 456  | 49.8 | 22.3 | 12.7 | 14.6 | 0.6                    | 49.8 | 0.0     | 0.0            | 0.6  | 45.4              | 53.6             |
| Philippines        | 726  | 21.9 | 52.4 | 17.0 | 8.3  | 0.4                    | 21.9 | 0.0     | 0.0            | 0.4  | 19.4              | 24.9             |
| Romania            | 419  | 28.6 | 17.4 | 19.4 | 26.1 | 8.5                    | 28.6 | 5.4     | 0.2            | 2.9  | 27.6              | 29.6             |
| Russian Federation | 545  | 34.2 | 25.9 | 14.5 | 20.8 | 4.6                    | 34.2 | 1.5     | 0.2            | 2.9  | 34.2              | 34.2             |
| Singapore          | 607  | 34.2 | 28.2 | 22.3 | 15.2 | 0.2                    | 34.2 | 0.2     | 0.0            | 0.0  | 29.9              | 38.6             |
| Slovak Republic    | 433  | 34.2 | 18.8 | 22.8 | 17.8 | 6.5                    | 34.2 | 2.2     | 0.0            | 4.3  | 29.7              | 38.7             |
| Slovenia           | 393  | 40.3 | 21.5 | 17.5 | 18.3 | 2.3                    | 40.3 | 0.5     | 0.0            | 1.8  | 37.3              | 43.8             |
| South Africa       | 1029 | 28.3 | 36.1 | 19.4 | 15.2 | 0.9                    | 28.3 | 0.3     | 0.1            | 0.5  | 26.0              | 30.9             |
| Thailand           | 715  | 23.4 | 16.9 | 30.3 | 29.4 | 0.0                    | 23.4 | 0.0     | 0.0            | 0.0  | 17.7              | 30.4             |
| Tunisia            | 634  | 24.5 | 23.4 | 16.2 | 19.3 | 16.6                   | 24.5 | 13.6    | 0.0            | 3.0  | 20.1              | 29.4             |
| Turkey             | 976  | 31.7 | 27.5 | 20.7 | 18.6 | 1.5                    | 31.7 | 0.0     | 0.1            | 1.4  | 25.6              | 35.9             |
| United States      | 1129 | 42.5 | 24.2 | 19.8 | 13.1 | 0.3                    | 42.5 | 0.0     | 0.1            | 0.3  | 38.5              | 47.0             |
| International Avg. | .    | 37.0 | 24.5 | 19.1 | 16.9 | 2.6                    | 37.0 | 1.3     | 0.1            | 1.3  | 34.3              | 39.6             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Physics  
 Label: Efficiency of machines ( S022017 - L04 )  
 Item Type = SA Key = X

| COUNTRY            | N    | NOT REACH |      |      |      |      |      |      |      | 1.GIRL |      | 2.BOY   |         |
|--------------------|------|-----------|------|------|------|------|------|------|------|--------|------|---------|---------|
|                    |      | 10        | 70   | 71   | 72   | 73   | 79   | 99   | V1   | ED     | OMIT | % Right | % Right |
| Australia          | 501  | 48.5      | 13.2 | 11.4 | 7.6  | 10.5 | 3.7  | 5.2  | 48.5 | 0.1    | 5.1  | 42.3    | 55.1    |
| Belgium (Flemish)  | 657  | 51.3      | 19.9 | 7.2  | 10.4 | 5.1  | 0.9  | 5.1  | 51.3 | 0.0    | 5.1  | 45.2    | 57.3    |
| Bulgaria           | 406  | 27.8      | 8.2  | 14.7 | 12.9 | 14.4 | 5.1  | 17.0 | 27.8 | 0.3    | 16.6 | 24.0    | 32.0    |
| Canada             | 1095 | 43.0      | 15.1 | 8.3  | 10.4 | 15.3 | 5.5  | 2.5  | 43.0 | 0.0    | 2.5  | 38.3    | 47.3    |
| Chile              | 727  | 8.1       | 26.2 | 10.9 | 14.8 | 18.0 | 5.4  | 16.6 | 8.1  | 0.0    | 16.6 | 5.4     | 10.4    |
| Chinese Taipei     | 732  | 43.6      | 9.4  | 15.5 | 4.1  | 21.7 | 1.7  | 3.9  | 43.6 | 0.0    | 3.9  | 38.7    | 48.5    |
| Cyprus             | 386  | 27.1      | 9.4  | 12.4 | 9.2  | 22.0 | 7.0  | 12.8 | 27.1 | 0.0    | 12.8 | 22.5    | 32.6    |
| Czech Republic     | 438  | 29.7      | 18.3 | 14.0 | 5.8  | 20.0 | 4.2  | 8.0  | 29.7 | 0.0    | 8.0  | 26.3    | 33.6    |
| England            | 363  | 41.7      | 13.5 | 7.9  | 8.7  | 20.2 | 3.0  | 4.9  | 41.7 | 0.3    | 4.6  | 36.1    | 46.8    |
| Finland            | 362  | 39.5      | 20.0 | 12.7 | 6.8  | 16.0 | 2.1  | 2.9  | 39.5 | 0.0    | 2.9  | 39.8    | 39.2    |
| Hong Kong, SAR     | 648  | 31.7      | 17.7 | 15.2 | 9.3  | 18.8 | 2.1  | 5.1  | 31.7 | 0.2    | 5.0  | 30.2    | 33.2    |
| Hungary            | 400  | 38.0      | 15.2 | 14.5 | 7.6  | 13.0 | 3.2  | 8.5  | 38.0 | 0.0    | 8.5  | 30.8    | 44.8    |
| Indonesia          | 724  | 19.7      | 36.4 | 28.6 | 6.6  | 3.2  | 3.1  | 2.2  | 19.7 | 0.0    | 2.2  | 16.5    | 22.7    |
| Iran, Islamic Rep. | 659  | 21.5      | 15.6 | 15.1 | 14.6 | 17.5 | 5.9  | 9.8  | 21.5 | 0.0    | 9.8  | 10.5    | 29.1    |
| Israel             | 523  | 34.6      | 10.5 | 9.0  | 10.9 | 13.7 | 11.3 | 9.9  | 34.6 | 0.3    | 9.6  | 32.0    | 37.0    |
| Italy              | 407  | 23.5      | 16.6 | 8.8  | 12.2 | 21.1 | 4.1  | 13.8 | 23.5 | 0.0    | 13.8 | 16.3    | 31.6    |
| Japan              | 604  | 45.8      | 15.0 | 10.3 | 8.5  | 17.1 | 1.0  | 2.3  | 45.8 | 0.0    | 2.3  | 44.3    | 47.2    |
| Jordan             | 626  | 19.1      | 9.5  | 11.1 | 15.4 | 25.9 | 10.7 | 8.4  | 19.1 | 0.2    | 8.2  | 19.0    | 19.2    |
| Korea, Rep. of     | 764  | 51.7      | 9.1  | 4.3  | 15.3 | 10.0 | 4.8  | 4.8  | 51.7 | 0.0    | 4.8  | 48.4    | 54.8    |
| Latvia (LSS)       | 368  | 25.6      | 19.9 | 8.8  | 25.8 | 6.2  | 1.3  | 12.3 | 25.6 | 0.0    | 12.3 | 16.8    | 35.0    |
| Lithuania          | 305  | 38.4      | 3.1  | 11.7 | 8.1  | 20.1 | 6.9  | 11.7 | 38.4 | 0.0    | 11.7 | 32.6    | 44.9    |
| Macedonia, Rep. of | 509  | 20.5      | 8.8  | 9.7  | 8.2  | 9.3  | 13.6 | 29.9 | 20.5 | 0.2    | 29.7 | 18.8    | 22.0    |
| Malaysia           | 697  | 20.4      | 10.1 | 17.9 | 18.0 | 25.2 | 4.1  | 4.3  | 20.4 | 0.0    | 4.3  | 17.2    | 24.6    |
| Moldova            | 468  | 19.3      | 13.0 | 12.1 | 8.3  | 23.2 | 3.9  | 20.2 | 19.3 | 0.0    | 20.2 | 13.7    | 25.3    |
| Morocco            | 673  | 6.7       | 2.6  | 8.4  | 2.5  | 54.5 | 14.6 | 10.7 | 6.7  | 0.0    | 10.7 | 5.9     | 7.2     |
| Netherlands        | 376  | 58.4      | 11.8 | 8.0  | 8.4  | 7.6  | 1.2  | 4.5  | 58.4 | 0.0    | 4.5  | 50.3    | 66.6    |
| New Zealand        | 457  | 42.1      | 13.1 | 8.9  | 14.2 | 11.7 | 4.9  | 5.1  | 42.1 | 0.0    | 5.1  | 38.6    | 45.2    |
| Philippines        | 802  | 4.1       | 12.0 | 11.7 | 20.0 | 34.9 | 10.2 | 7.2  | 4.1  | 0.0    | 7.2  | 3.8     | 4.3     |
| Romania            | 419  | 22.3      | 14.5 | 18.7 | 9.7  | 13.6 | 4.9  | 16.2 | 22.3 | 0.2    | 16.0 | 20.4    | 24.0    |
| Russian Federation | 545  | 32.6      | 9.6  | 16.1 | 5.3  | 16.1 | 4.9  | 15.4 | 32.6 | 0.2    | 15.3 | 26.4    | 39.3    |
| Singapore          | 607  | 49.2      | 11.9 | 8.6  | 13.5 | 14.0 | 1.9  | 0.8  | 49.2 | 0.0    | 0.8  | 45.4    | 53.1    |
| Slovak Republic    | 432  | 50.4      | 4.7  | 12.0 | 9.4  | 8.7  | 4.1  | 10.7 | 50.4 | 0.0    | 10.7 | 40.2    | 60.7    |
| Slovenia           | 393  | 32.8      | 17.0 | 15.6 | 10.2 | 15.6 | 2.1  | 6.9  | 32.8 | 0.0    | 6.9  | 28.9    | 37.1    |
| South Africa       | 1029 | 2.9       | 4.2  | 10.6 | 8.0  | 28.5 | 37.2 | 8.5  | 2.9  | 0.1    | 8.4  | 2.0     | 4.0     |
| Thailand           | 715  | 28.2      | 11.3 | 2.6  | 34.1 | 17.0 | 5.2  | 1.6  | 28.2 | 0.0    | 1.6  | 30.4    | 25.5    |
| Tunisia            | 618  | 18.6      | 21.4 | 11.8 | 13.6 | 29.0 | 1.1  | 4.6  | 18.6 | 0.0    | 4.6  | 14.4    | 23.2    |
| Turkey             | 976  | 17.3      | 12.9 | 9.6  | 16.8 | 14.0 | 7.7  | 21.6 | 17.3 | 0.1    | 21.5 | 12.6    | 20.5    |
| United States      | 1129 | 29.7      | 18.6 | 8.7  | 14.5 | 21.2 | 2.9  | 4.5  | 29.7 | 0.1    | 4.5  | 24.9    | 34.9    |
| International Avg. | .    | 30.7      | 13.7 | 11.7 | 11.6 | 17.7 | 5.7  | 9.0  | 30.7 | 0.1    | 8.9  | 26.6    | 34.7    |

V1 = % Scoring 1 or better V2 = % Scoring 2 or better V3 = % Scoring 3 or better  
 Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.  
 Because of missing gender information, some totals may appear inconsistent

Science: Life Science  
 Label: Wolves marking territory ( S022295 - L05 )  
 Item Type = MC Key = C

| COUNTRY            | N    | A    | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 501  | 7.0  | 4.7  | 84.4 | 2.8  | 1.1                    | 84.4 | 0.3     | 0.1            | 0.7  | 85.3              | 83.4             |
| Belgium (Flemish)  | 657  | 8.4  | 4.4  | 81.0 | 5.6  | 0.6                    | 81.0 | 0.3     | 0.0            | 0.3  | 76.2              | 85.9             |
| Bulgaria           | 406  | 18.7 | 2.6  | 71.1 | 4.1  | 3.5                    | 71.1 | 2.0     | 0.3            | 1.1  | 74.9              | 66.9             |
| Canada             | 1095 | 5.3  | 2.4  | 88.9 | 3.1  | 0.2                    | 88.9 | 0.2     | 0.0            | 0.1  | 88.1              | 89.6             |
| Chile              | 727  | 15.1 | 7.0  | 66.0 | 11.4 | 0.5                    | 66.0 | 0.0     | 0.0            | 0.5  | 59.1              | 72.2             |
| Chinese Taipei     | 731  | 42.5 | 5.7  | 50.1 | 1.1  | 0.5                    | 50.1 | 0.2     | 0.0            | 0.3  | 40.3              | 59.8             |
| Cyprus             | 386  | 22.6 | 15.7 | 26.6 | 33.3 | 1.8                    | 26.6 | 0.2     | 0.0            | 1.6  | 23.1              | 30.9             |
| Czech Republic     | 438  | 17.0 | 4.8  | 74.3 | 3.9  | 0.0                    | 74.3 | 0.0     | 0.0            | 0.0  | 64.2              | 86.3             |
| England            | 363  | 12.4 | 5.2  | 74.5 | 7.0  | 0.8                    | 74.5 | 0.3     | 0.3            | 0.3  | 72.5              | 76.3             |
| Finland            | 362  | 5.2  | 1.4  | 91.9 | 0.5  | 1.0                    | 91.9 | 0.0     | 0.0            | 1.0  | 89.7              | 94.5             |
| Hong Kong, SAR     | 648  | 37.4 | 6.5  | 54.0 | 1.4  | 0.6                    | 54.0 | 0.0     | 0.2            | 0.4  | 45.7              | 62.0             |
| Hungary            | 400  | 10.4 | 4.6  | 79.3 | 4.2  | 1.5                    | 79.3 | 1.2     | 0.0            | 0.3  | 74.0              | 84.8             |
| Indonesia          | 724  | 24.7 | 24.7 | 33.5 | 16.6 | 0.6                    | 33.5 | 0.1     | 0.0            | 0.4  | 27.8              | 38.9             |
| Iran, Islamic Rep. | 659  | 26.0 | 5.9  | 48.5 | 18.4 | 1.2                    | 48.5 | 0.0     | 0.0            | 1.2  | 34.0              | 58.6             |
| Israel             | 523  | 34.2 | 13.3 | 43.7 | 6.3  | 2.5                    | 43.7 | 0.6     | 0.3            | 1.6  | 36.8              | 50.5             |
| Italy              | 407  | 11.5 | 11.1 | 69.7 | 7.2  | 0.5                    | 69.7 | 0.0     | 0.0            | 0.5  | 64.9              | 75.1             |
| Japan              | 604  | 6.2  | 4.8  | 83.4 | 5.5  | 0.0                    | 83.4 | 0.0     | 0.0            | 0.0  | 83.0              | 83.8             |
| Jordan             | 626  | 27.8 | 14.4 | 32.8 | 23.7 | 1.3                    | 32.8 | 0.2     | 0.2            | 0.9  | 32.7              | 32.9             |
| Korea, Rep. of     | 764  | 4.6  | 2.1  | 91.0 | 2.2  | 0.1                    | 91.0 | 0.1     | 0.0            | 0.0  | 87.3              | 94.4             |
| Latvia (LSS)       | 368  | 9.3  | 3.1  | 86.1 | 0.6  | 0.9                    | 86.1 | 0.5     | 0.0            | 0.4  | 90.1              | 81.9             |
| Lithuania          | 305  | 12.9 | 3.3  | 72.5 | 10.1 | 1.2                    | 72.5 | 0.0     | 0.0            | 1.2  | 66.6              | 79.1             |
| Macedonia, Rep. of | 509  | 20.5 | 13.6 | 33.5 | 28.8 | 3.6                    | 33.5 | 0.2     | 0.4            | 3.1  | 28.1              | 38.4             |
| Malaysia           | 698  | 27.2 | 14.3 | 46.2 | 12.0 | 0.3                    | 46.2 | 0.0     | 0.0            | 0.3  | 35.5              | 59.9             |
| Moldova            | 468  | 21.7 | 15.2 | 43.7 | 18.6 | 0.8                    | 43.7 | 0.3     | 0.0            | 0.5  | 39.2              | 48.5             |
| Morocco            | 672  | 33.2 | 22.9 | 18.7 | 19.2 | 6.1                    | 18.7 | 4.9     | 0.0            | 1.3  | 15.3              | 21.1             |
| Netherlands        | 376  | 12.9 | 3.3  | 79.9 | 1.9  | 2.0                    | 79.9 | 0.0     | 0.0            | 2.0  | 80.8              | 79.0             |
| New Zealand        | 457  | 11.2 | 4.6  | 79.7 | 3.9  | 0.6                    | 79.7 | 0.0     | 0.0            | 0.6  | 73.8              | 84.9             |
| Philippines        | 802  | 24.4 | 15.9 | 31.4 | 28.0 | 0.3                    | 31.4 | 0.0     | 0.0            | 0.3  | 32.0              | 30.8             |
| Romania            | 419  | 28.9 | 15.3 | 44.6 | 7.8  | 3.4                    | 44.6 | 2.5     | 0.2            | 0.6  | 38.0              | 50.5             |
| Russian Federation | 545  | 6.7  | 2.2  | 84.1 | 5.4  | 1.6                    | 84.1 | 0.8     | 0.2            | 0.6  | 80.8              | 87.5             |
| Singapore          | 607  | 27.7 | 14.7 | 43.7 | 13.2 | 0.6                    | 43.7 | 0.2     | 0.0            | 0.5  | 37.5              | 50.0             |
| Slovak Republic    | 433  | 16.3 | 5.1  | 71.3 | 6.6  | 0.7                    | 71.3 | 0.0     | 0.0            | 0.7  | 65.8              | 76.8             |
| Slovenia           | 393  | 15.7 | 13.2 | 62.8 | 6.7  | 1.7                    | 62.8 | 0.3     | 0.0            | 1.4  | 57.4              | 68.8             |
| South Africa       | 1029 | 49.1 | 9.8  | 26.2 | 13.3 | 1.6                    | 26.2 | 0.5     | 0.1            | 1.0  | 23.7              | 28.8             |
| Thailand           | 715  | 13.8 | 6.8  | 64.9 | 14.1 | 0.4                    | 64.9 | 0.0     | 0.0            | 0.4  | 61.4              | 69.2             |
| Tunisia            | 634  | 44.2 | 5.9  | 19.0 | 18.7 | 12.3                   | 19.0 | 11.2    | 0.0            | 1.1  | 13.2              | 25.6             |
| Turkey             | 976  | 24.2 | 15.7 | 31.8 | 26.0 | 2.2                    | 31.8 | 0.1     | 0.2            | 1.9  | 27.4              | 34.8             |
| United States      | 1129 | 11.5 | 6.0  | 77.6 | 4.4  | 0.5                    | 77.6 | 0.0     | 0.1            | 0.4  | 75.4              | 80.0             |
| International Avg. | .    | 19.7 | 8.7  | 59.5 | 10.5 | 1.6                    | 59.5 | 0.7     | 0.1            | 0.8  | 55.3              | 63.8             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Chemistry  
 Label: Filtration of mixtures ( S022194 - L06 )  
 Item Type = MC Key = B

| COUNTRY            | N    | A    | B    | C    | D    | E    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 501  | 5.8  | 40.5 | 3.9  | 18.8 | 29.8 | 1.2                    | 40.5 | 0.8     | 0.1            | 0.2  | 38.9              | 42.2             |
| Belgium (Flemish)  | 657  | 8.7  | 32.7 | 10.6 | 18.9 | 26.8 | 2.3                    | 32.7 | 1.3     | 0.0            | 1.0  | 35.0              | 30.3             |
| Bulgaria           | 406  | 5.3  | 37.4 | 7.8  | 26.9 | 12.4 | 10.2                   | 37.4 | 5.7     | 0.3            | 4.2  | 34.9              | 40.3             |
| Canada             | 1095 | 3.9  | 50.5 | 8.2  | 15.5 | 21.4 | 0.6                    | 50.5 | 0.4     | 0.0            | 0.2  | 52.3              | 48.8             |
| Chile              | 727  | 10.5 | 21.1 | 23.8 | 13.6 | 28.1 | 2.9                    | 21.1 | 0.0     | 0.0            | 2.9  | 21.3              | 20.9             |
| Chinese Taipei     | 732  | 22.9 | 46.3 | 3.9  | 9.7  | 17.0 | 0.2                    | 46.3 | 0.2     | 0.0            | 0.0  | 48.5              | 44.1             |
| Cyprus             | 387  | 6.4  | 38.7 | 20.0 | 16.0 | 17.7 | 1.3                    | 38.7 | 0.5     | 0.0            | 0.8  | 41.1              | 35.7             |
| Czech Republic     | 438  | 4.1  | 64.5 | 3.5  | 10.6 | 16.3 | 1.0                    | 64.5 | 1.0     | 0.0            | 0.0  | 61.0              | 68.7             |
| England            | 363  | 3.2  | 33.8 | 3.3  | 19.3 | 37.8 | 2.7                    | 33.8 | 2.0     | 0.3            | 0.5  | 33.5              | 34.1             |
| Finland            | 362  | 3.2  | 53.7 | 3.9  | 7.8  | 19.0 | 12.4                   | 53.7 | 0.0     | 0.0            | 12.4 | 54.6              | 52.5             |
| Hong Kong, SAR     | 648  | 21.9 | 38.4 | 8.6  | 17.3 | 13.6 | 0.3                    | 38.4 | 0.0     | 0.2            | 0.2  | 42.2              | 34.7             |
| Hungary            | 400  | 3.0  | 52.0 | 2.4  | 16.7 | 20.3 | 5.5                    | 52.0 | 4.5     | 0.0            | 1.1  | 52.0              | 52.4             |
| Indonesia          | 724  | 17.9 | 14.6 | 15.6 | 17.6 | 33.3 | 1.1                    | 14.6 | 0.2     | 0.0            | 0.9  | 14.4              | 14.7             |
| Iran, Islamic Rep. | 659  | 5.1  | 18.9 | 8.3  | 22.8 | 43.4 | 1.5                    | 18.9 | 0.0     | 0.0            | 1.5  | 20.7              | 17.7             |
| Israel             | 523  | 9.0  | 32.1 | 14.7 | 14.7 | 21.8 | 7.7                    | 32.1 | 2.8     | 0.3            | 4.6  | 31.5              | 32.7             |
| Italy              | 407  | 6.8  | 30.5 | 10.0 | 24.9 | 25.0 | 2.8                    | 30.5 | 0.0     | 0.0            | 2.8  | 25.6              | 36.0             |
| Japan              | 604  | 6.6  | 42.4 | 4.3  | 13.5 | 32.3 | 0.8                    | 42.4 | 0.8     | 0.0            | 0.0  | 45.4              | 39.8             |
| Jordan             | 622  | 6.8  | 23.5 | 9.6  | 27.0 | 31.5 | 1.5                    | 23.5 | 0.3     | 0.2            | 0.9  | 24.1              | 23.0             |
| Korea, Rep. of     | 764  | 8.5  | 51.0 | 3.0  | 6.8  | 30.4 | 0.3                    | 51.0 | 0.3     | 0.0            | 0.0  | 50.2              | 51.7             |
| Latvia (LSS)       | 368  | 16.1 | 53.4 | 2.2  | 11.5 | 10.8 | 6.1                    | 53.4 | 4.6     | 0.0            | 1.5  | 54.4              | 52.3             |
| Lithuania          | 305  | 10.8 | 53.8 | 3.1  | 14.0 | 12.6 | 5.7                    | 53.8 | 0.0     | 0.0            | 5.7  | 56.2              | 51.1             |
| Macedonia, Rep. of | 509  | 8.9  | 27.0 | 13.5 | 18.8 | 26.2 | 5.6                    | 27.0 | 1.2     | 0.4            | 4.0  | 25.9              | 28.1             |
| Malaysia           | 698  | 17.0 | 41.6 | 3.5  | 21.3 | 16.0 | 0.5                    | 41.6 | 0.0     | 0.0            | 0.5  | 41.3              | 41.9             |
| Moldova            | 468  | 10.6 | 34.1 | 9.4  | 22.4 | 20.6 | 2.8                    | 34.1 | 1.3     | 0.0            | 1.5  | 31.9              | 36.6             |
| Morocco            | 673  | 10.8 | 11.9 | 11.0 | 14.8 | 41.6 | 10.0                   | 11.9 | 9.0     | 0.0            | 1.0  | 10.2              | 13.1             |
| Netherlands        | 376  | 5.7  | 48.0 | 5.5  | 22.1 | 17.5 | 1.1                    | 48.0 | 0.7     | 0.0            | 0.5  | 48.8              | 47.3             |
| New Zealand        | 457  | 5.6  | 39.2 | 8.5  | 20.5 | 24.3 | 1.9                    | 39.2 | 1.0     | 0.0            | 0.9  | 40.4              | 38.2             |
| Philippines        | 802  | 11.3 | 28.9 | 24.8 | 19.2 | 14.6 | 1.2                    | 28.9 | 0.0     | 0.0            | 1.2  | 29.2              | 28.7             |
| Romania            | 419  | 5.4  | 42.5 | 8.5  | 19.8 | 18.8 | 5.0                    | 42.5 | 3.2     | 0.2            | 1.5  | 40.8              | 44.0             |
| Russian Federation | 545  | 12.5 | 50.5 | 2.9  | 17.3 | 12.0 | 4.8                    | 50.5 | 3.2     | 0.2            | 1.4  | 50.3              | 50.6             |
| Singapore          | 607  | 5.3  | 50.4 | 2.4  | 26.9 | 14.8 | 0.3                    | 50.4 | 0.0     | 0.0            | 0.3  | 45.3              | 55.7             |
| Slovak Republic    | 433  | 5.0  | 62.0 | 4.6  | 11.9 | 15.7 | 0.6                    | 62.0 | 0.1     | 0.0            | 0.6  | 59.2              | 64.9             |
| Slovenia           | 393  | 8.6  | 48.1 | 5.0  | 15.4 | 18.1 | 4.9                    | 48.1 | 3.0     | 0.0            | 1.9  | 44.8              | 51.6             |
| South Africa       | 1029 | 12.3 | 26.5 | 17.7 | 17.5 | 24.4 | 1.6                    | 26.5 | 1.1     | 0.1            | 0.4  | 27.6              | 25.4             |
| Thailand           | 715  | 9.3  | 30.3 | 10.5 | 18.8 | 31.0 | 0.1                    | 30.3 | 0.0     | 0.0            | 0.1  | 27.5              | 33.7             |
| Tunisia            | 634  | 6.3  | 33.6 | 11.6 | 28.7 | 11.0 | 8.8                    | 33.6 | 8.0     | 0.0            | 0.8  | 33.9              | 33.2             |
| Turkey             | 976  | 9.0  | 28.1 | 11.6 | 25.5 | 24.0 | 1.7                    | 28.1 | 0.1     | 0.2            | 1.4  | 28.2              | 28.1             |
| United States      | 1129 | 6.8  | 38.7 | 10.7 | 21.0 | 21.9 | 0.9                    | 38.7 | 0.1     | 0.1            | 0.7  | 38.1              | 39.3             |
| International Avg. | .    | 8.9  | 38.7 | 8.7  | 18.0 | 22.5 | 3.2                    | 38.7 | 1.5     | 0.1            | 1.6  | 38.4              | 39.1             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Environmental and Resource Issues  
 Label: Effectiveness of insecticides ( S022118 - L07 )  
 Item Type = MC Key = B

| COUNTRY            | N    | A    | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 501  | 12.5 | 65.5 | 15.7 | 5.0  | 1.2                    | 65.5 | 0.0     | 0.1            | 1.1  | 59.7              | 71.7             |
| Belgium (Flemish)  | 657  | 13.9 | 53.2 | 14.9 | 14.3 | 3.7                    | 53.2 | 0.0     | 0.0            | 3.7  | 44.1              | 62.4             |
| Bulgaria           | 406  | 16.1 | 49.9 | 19.2 | 8.1  | 6.6                    | 49.9 | 1.4     | 0.3            | 4.9  | 51.4              | 48.3             |
| Canada             | 1095 | 16.4 | 59.6 | 16.3 | 6.8  | 0.9                    | 59.6 | 0.0     | 0.0            | 0.9  | 50.7              | 67.9             |
| Chile              | 727  | 15.7 | 37.6 | 31.8 | 12.9 | 2.0                    | 37.6 | 0.0     | 0.2            | 1.8  | 32.5              | 42.3             |
| Chinese Taipei     | 731  | 3.3  | 75.9 | 12.1 | 8.5  | 0.1                    | 75.9 | 0.0     | 0.0            | 0.1  | 68.7              | 83.0             |
| Cyprus             | 386  | 17.8 | 31.2 | 37.3 | 11.0 | 2.7                    | 31.2 | 0.0     | 0.0            | 2.7  | 31.0              | 31.4             |
| Czech Republic     | 438  | 11.1 | 56.5 | 26.3 | 5.3  | 0.7                    | 56.5 | 0.0     | 0.0            | 0.7  | 50.4              | 63.8             |
| England            | 363  | 17.7 | 55.9 | 12.1 | 13.0 | 1.3                    | 55.9 | 0.0     | 0.3            | 1.0  | 48.3              | 62.9             |
| Finland            | 362  | 8.3  | 57.1 | 26.8 | 7.0  | 0.9                    | 57.1 | 0.0     | 0.0            | 0.9  | 50.8              | 64.9             |
| Hong Kong, SAR     | 647  | 5.6  | 74.3 | 12.9 | 6.6  | 0.5                    | 74.3 | 0.0     | 0.2            | 0.3  | 65.1              | 83.1             |
| Hungary            | 400  | 6.2  | 70.0 | 13.8 | 7.4  | 2.5                    | 70.0 | 1.0     | 0.0            | 1.5  | 68.8              | 71.4             |
| Indonesia          | 724  | 18.2 | 26.8 | 27.8 | 25.0 | 2.2                    | 26.8 | 0.0     | 0.0            | 2.2  | 24.8              | 28.7             |
| Iran, Islamic Rep. | 659  | 12.4 | 37.7 | 24.0 | 22.6 | 3.3                    | 37.7 | 0.0     | 0.0            | 3.3  | 40.1              | 36.1             |
| Israel             | 523  | 15.5 | 50.6 | 20.2 | 9.9  | 3.8                    | 50.6 | 0.0     | 0.3            | 3.5  | 47.8              | 53.3             |
| Italy              | 407  | 9.8  | 49.8 | 30.0 | 6.6  | 3.8                    | 49.8 | 0.0     | 0.3            | 3.5  | 41.9              | 58.9             |
| Japan              | 604  | 3.5  | 67.9 | 19.4 | 9.1  | 0.1                    | 67.9 | 0.1     | 0.0            | 0.0  | 59.4              | 75.5             |
| Jordan             | 622  | 17.7 | 31.9 | 30.9 | 17.0 | 2.4                    | 31.9 | 0.0     | 0.2            | 2.2  | 31.5              | 32.2             |
| Korea, Rep. of     | 764  | 5.3  | 46.9 | 33.0 | 14.8 | 0.0                    | 46.9 | 0.0     | 0.0            | 0.0  | 36.8              | 56.4             |
| Latvia (LSS)       | 368  | 14.5 | 37.6 | 34.2 | 9.1  | 4.5                    | 37.6 | 0.0     | 0.0            | 4.5  | 33.6              | 41.8             |
| Lithuania          | 305  | 13.5 | 51.1 | 19.5 | 12.7 | 3.2                    | 51.1 | 0.0     | 0.0            | 3.2  | 44.1              | 59.0             |
| Macedonia, Rep. of | 509  | 14.6 | 36.5 | 23.5 | 18.4 | 6.9                    | 36.5 | 0.0     | 0.4            | 6.5  | 37.8              | 35.4             |
| Malaysia           | 698  | 31.8 | 24.4 | 18.6 | 24.3 | 0.9                    | 24.4 | 0.0     | 0.0            | 0.9  | 20.0              | 30.0             |
| Moldova            | 468  | 14.0 | 42.2 | 30.0 | 10.3 | 3.6                    | 42.2 | 0.8     | 0.0            | 2.8  | 36.7              | 48.1             |
| Morocco            | 672  | 26.0 | 19.6 | 28.2 | 20.0 | 6.2                    | 19.6 | 2.8     | 0.0            | 3.4  | 17.9              | 20.8             |
| Netherlands        | 376  | 5.0  | 60.8 | 22.3 | 11.6 | 0.3                    | 60.8 | 0.0     | 0.0            | 0.3  | 54.7              | 66.9             |
| New Zealand        | 457  | 13.0 | 55.9 | 18.6 | 10.7 | 1.7                    | 55.9 | 0.0     | 0.3            | 1.4  | 52.7              | 58.7             |
| Philippines        | 802  | 24.3 | 33.4 | 14.7 | 25.8 | 1.8                    | 33.4 | 0.0     | 0.0            | 1.8  | 37.2              | 29.0             |
| Romania            | 419  | 16.5 | 47.9 | 11.2 | 20.0 | 4.5                    | 47.9 | 1.7     | 0.2            | 2.5  | 45.8              | 49.7             |
| Russian Federation | 545  | 7.1  | 59.6 | 26.4 | 4.2  | 2.7                    | 59.6 | 0.0     | 0.2            | 2.5  | 59.2              | 59.9             |
| Singapore          | 607  | 7.7  | 68.6 | 12.1 | 11.4 | 0.2                    | 68.6 | 0.0     | 0.0            | 0.2  | 63.3              | 74.2             |
| Slovak Republic    | 433  | 20.2 | 45.4 | 21.1 | 10.4 | 2.9                    | 45.4 | 0.0     | 0.0            | 2.9  | 40.3              | 50.4             |
| Slovenia           | 393  | 12.2 | 56.8 | 19.6 | 8.3  | 3.0                    | 56.8 | 0.0     | 0.0            | 3.0  | 54.8              | 59.1             |
| South Africa       | 1029 | 17.4 | 25.2 | 33.5 | 21.1 | 2.8                    | 25.2 | 0.5     | 0.1            | 2.2  | 27.8              | 22.4             |
| Thailand           | 715  | 11.5 | 49.1 | 9.2  | 29.9 | 0.2                    | 49.1 | 0.0     | 0.0            | 0.2  | 42.7              | 57.0             |
| Tunisia            | 634  | 12.4 | 20.7 | 47.3 | 13.7 | 5.9                    | 20.7 | 3.5     | 0.0            | 2.4  | 16.4              | 25.6             |
| Turkey             | 976  | 17.4 | 43.5 | 14.6 | 20.6 | 3.9                    | 43.5 | 0.3     | 0.2            | 3.4  | 44.3              | 42.9             |
| United States      | 1129 | 13.1 | 61.6 | 15.9 | 8.3  | 1.0                    | 61.6 | 0.0     | 0.1            | 0.9  | 59.2              | 64.3             |
| International Avg. | .    | 13.7 | 48.4 | 22.2 | 13.2 | 2.5                    | 48.4 | 0.3     | 0.1            | 2.1  | 44.5              | 52.3             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Life Science  
 Label: Complete food web ( S022140 - L08 )  
 Item Type = SA Key = X

| COUNTRY            | N    | 10   | 11   | 77   | 79   | 99   | V1   | NOT   | ED   | OMIT | 1.GIRL  | 2.BOY   |
|--------------------|------|------|------|------|------|------|------|-------|------|------|---------|---------|
|                    |      |      |      |      |      |      |      | REACH |      |      | % Right | % Right |
| Australia          | 501  | 51.3 | 8.2  | 0.0  | 37.8 | 2.7  | 59.5 | 0.1   | 2.5  |      | 58.0    | 61.1    |
| Belgium (Flemish)  | 657  | 48.4 | 13.8 | 0.0  | 35.8 | 1.9  | 62.3 | 0.0   | 1.9  |      | 56.9    | 67.7    |
| Bulgaria           | 406  | 59.0 | 10.7 | 0.0  | 23.1 | 7.1  | 69.8 | 0.3   | 6.8  |      | 69.7    | 69.9    |
| Canada             | 1095 | 54.8 | 8.0  | 0.0  | 36.0 | 1.2  | 62.7 | 0.0   | 1.2  |      | 60.3    | 65.0    |
| Chile              | 727  | 24.4 | 3.6  | 0.0  | 68.8 | 3.3  | 27.9 | 0.2   | 3.2  |      | 25.8    | 29.9    |
| Chinese Taipei     | 732  | 83.6 | 5.6  | 0.0  | 9.8  | 1.0  | 89.2 | 0.0   | 1.0  |      | 88.1    | 90.4    |
| Cyprus             | 383  | 32.5 | 4.2  | 0.0  | 59.4 | 3.9  | 36.7 | 0.3   | 3.6  |      | 36.9    | 36.4    |
| Czech Republic     | 438  | 53.8 | 6.5  | 0.0  | 38.3 | 1.4  | 60.3 | 0.0   | 1.4  |      | 58.8    | 62.1    |
| England            | 363  | 60.7 | 14.7 | 0.0  | 23.4 | 1.2  | 75.4 | 0.3   | 0.9  |      | 72.8    | 77.8    |
| Finland            | 362  | 47.7 | 9.6  | 0.0  | 40.8 | 1.9  | 57.3 | 0.0   | 1.9  |      | 58.0    | 56.5    |
| Hong Kong, SAR     | 648  | 56.6 | 7.4  | 0.0  | 35.2 | 0.8  | 64.0 | 0.2   | 0.6  |      | 59.5    | 68.2    |
| Hungary            | 400  | 54.3 | 15.4 | 0.0  | 25.7 | 4.7  | 69.7 | 0.0   | 4.7  |      | 70.2    | 69.3    |
| Indonesia          | 724  | 61.2 | 4.4  | 0.0  | 28.3 | 6.1  | 65.6 | 0.0   | 6.1  |      | 59.9    | 71.1    |
| Iran, Islamic Rep. | 659  | 26.1 | 8.8  | 0.0  | 57.8 | 7.4  | 34.9 | 0.1   | 7.3  |      | 31.0    | 37.5    |
| Israel             | 523  | 32.3 | 3.1  | 0.0  | 51.9 | 12.7 | 35.4 | 0.3   | 12.4 |      | 33.5    | 37.2    |
| Italy              | 407  | 39.2 | 8.6  | 0.0  | 44.7 | 7.6  | 47.7 | 0.3   | 7.3  |      | 47.2    | 48.3    |
| Japan              | 604  | 62.6 | 5.2  | 0.0  | 32.0 | 0.2  | 67.8 | 0.0   | 0.2  |      | 68.2    | 67.5    |
| Jordan             | 626  | 45.7 | 4.8  | 0.0  | 47.7 | 1.7  | 50.5 | 0.2   | 1.6  |      | 50.1    | 50.9    |
| Korea, Rep. of     | 764  | 78.8 | 6.5  | 0.0  | 14.4 | 0.4  | 85.3 | 0.0   | 0.4  |      | 84.3    | 86.2    |
| Latvia (LSS)       | 367  | 44.0 | 5.6  | 0.0  | 45.7 | 4.7  | 49.6 | 0.0   | 4.7  |      | 49.7    | 49.5    |
| Lithuania          | 305  | 29.8 | 7.2  | 0.0  | 53.5 | 9.6  | 37.0 | 0.6   | 9.0  |      | 31.3    | 43.2    |
| Macedonia, Rep. of | 509  | 39.0 | 9.4  | 0.0  | 36.8 | 14.7 | 48.5 | 0.4   | 14.3 |      | 49.9    | 47.2    |
| Malaysia           | 698  | 80.9 | 3.5  | 0.0  | 14.8 | 0.7  | 84.5 | 0.0   | 0.7  |      | 82.2    | 87.4    |
| Moldova            | 468  | 48.3 | 8.1  | 0.0  | 33.3 | 10.3 | 56.4 | 0.0   | 10.3 |      | 59.3    | 53.3    |
| Morocco            | 671  | 10.7 | 5.5  | 0.0  | 74.2 | 9.6  | 16.2 | 0.0   | 9.6  |      | 16.4    | 16.1    |
| Netherlands        | 376  | 34.3 | 24.1 | 0.0  | 38.6 | 3.0  | 58.4 | 0.0   | 3.0  |      | 56.6    | 60.2    |
| New Zealand        | 457  | 36.3 | 11.5 | 12.7 | 36.7 | 2.8  | 47.7 | 0.3   | 2.6  |      | 47.1    | 48.3    |
| Philippines        | 802  | 29.7 | 9.2  | 0.0  | 59.6 | 1.6  | 38.9 | 0.0   | 1.6  |      | 37.2    | 41.0    |
| Romania            | 419  | 56.2 | 8.3  | 0.0  | 27.8 | 7.7  | 64.5 | 0.2   | 7.5  |      | 65.6    | 63.5    |
| Russian Federation | 545  | 63.1 | 3.9  | 0.0  | 28.8 | 4.2  | 67.0 | 0.2   | 4.0  |      | 62.8    | 71.6    |
| Singapore          | 607  | 78.0 | 10.7 | 0.0  | 10.9 | 0.4  | 88.7 | 0.0   | 0.4  |      | 87.1    | 90.4    |
| Slovak Republic    | 433  | 40.7 | 13.0 | 0.0  | 43.8 | 2.4  | 53.7 | 0.0   | 2.4  |      | 48.3    | 59.1    |
| Slovenia           | 393  | 40.3 | 7.6  | 0.0  | 48.2 | 3.9  | 47.9 | 0.0   | 3.9  |      | 48.5    | 47.2    |
| South Africa       | 1029 | 8.6  | 3.1  | 0.0  | 81.5 | 6.8  | 11.7 | 0.1   | 6.7  |      | 13.8    | 9.4     |
| Thailand           | 715  | 54.5 | 3.1  | 0.0  | 40.1 | 2.3  | 57.6 | 0.0   | 2.3  |      | 53.4    | 62.7    |
| Tunisia            | 630  | 28.6 | 7.1  | 0.0  | 57.4 | 6.9  | 35.7 | 0.0   | 6.9  |      | 30.2    | 41.9    |
| Turkey             | 976  | 25.5 | 10.9 | 0.0  | 54.5 | 9.1  | 36.4 | 0.2   | 8.8  |      | 36.8    | 36.1    |
| United States      | 1129 | 48.5 | 7.2  | 0.0  | 42.4 | 1.8  | 55.7 | 0.1   | 1.8  |      | 50.2    | 61.8    |
| International Avg. | .    | 46.6 | 8.1  | 0.3  | 40.5 | 4.5  | 54.7 | 0.1   | 4.3  |      | 53.0    | 56.4    |

V1 = % Scoring 1 or better V2 = % Scoring 2 or better V3 = % Scoring 3 or better  
 Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.  
 Because of missing gender information, some totals may appear inconsistent

Science: Chemistry  
 Label: NOT a mixture ( S022187 - M10 )  
 Item Type = MC Key = B

| COUNTRY            | N    | A    | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 510  | 23.2 | 52.2 | 19.7 | 4.8  | 0.2                    | 52.2 | 0.0     | 0.0            | 0.2  | 49.2              | 55.2             |
| Belgium (Flemish)  | 649  | 23.7 | 47.6 | 27.0 | 0.9  | 0.8                    | 47.6 | 0.4     | 0.0            | 0.4  | 51.4              | 43.5             |
| Bulgaria           | 413  | 16.8 | 39.7 | 35.5 | 4.0  | 4.0                    | 39.7 | 2.1     | 0.2            | 1.7  | 41.6              | 37.5             |
| Canada             | 1106 | 24.2 | 56.0 | 16.6 | 2.5  | 0.8                    | 56.0 | 0.3     | 0.0            | 0.5  | 55.1              | 57.0             |
| Chile              | 736  | 35.3 | 25.5 | 34.5 | 4.1  | 0.6                    | 25.5 | 0.0     | 0.0            | 0.6  | 26.1              | 25.0             |
| Chinese Taipei     | 719  | 13.4 | 58.7 | 22.4 | 4.9  | 0.5                    | 58.7 | 0.3     | 0.0            | 0.3  | 59.3              | 58.1             |
| Cyprus             | 387  | 39.3 | 32.1 | 25.0 | 2.9  | 0.8                    | 32.1 | 0.2     | 0.0            | 0.6  | 30.2              | 33.8             |
| Czech Republic     | 437  | 21.1 | 48.9 | 25.1 | 3.4  | 1.5                    | 48.9 | 0.3     | 0.0            | 1.2  | 51.3              | 46.8             |
| England            | 379  | 30.0 | 41.9 | 19.3 | 3.2  | 5.5                    | 41.9 | 0.7     | 3.7            | 1.1  | 39.9              | 43.9             |
| Finland            | 369  | 31.1 | 52.1 | 15.2 | 0.6  | 0.9                    | 52.1 | 0.0     | 0.2            | 0.7  | 48.9              | 55.3             |
| Hong Kong, SAR     | 648  | 18.0 | 30.6 | 47.9 | 3.2  | 0.3                    | 30.6 | 0.0     | 0.1            | 0.2  | 32.9              | 28.3             |
| Hungary            | 393  | 14.3 | 50.0 | 31.3 | 3.1  | 1.3                    | 50.0 | 0.5     | 0.0            | 0.8  | 42.9              | 57.9             |
| Indonesia          | 733  | 50.2 | 30.2 | 10.2 | 7.8  | 1.7                    | 30.2 | 0.0     | 0.0            | 1.7  | 31.3              | 29.2             |
| Iran, Islamic Rep. | 665  | 38.7 | 28.1 | 23.8 | 7.7  | 1.7                    | 28.1 | 0.3     | 0.3            | 1.1  | 26.1              | 29.5             |
| Israel             | 515  | 28.9 | 37.8 | 27.5 | 4.2  | 1.7                    | 37.8 | 0.2     | 0.4            | 1.2  | 40.0              | 35.6             |
| Italy              | 411  | 31.3 | 38.9 | 22.4 | 5.9  | 1.5                    | 38.9 | 0.3     | 0.0            | 1.2  | 38.0              | 40.0             |
| Japan              | 599  | 14.3 | 50.3 | 30.9 | 3.9  | 0.7                    | 50.3 | 0.5     | 0.0            | 0.2  | 47.2              | 53.2             |
| Jordan             | 630  | 14.9 | 57.5 | 18.0 | 7.8  | 1.7                    | 57.5 | 0.4     | 0.0            | 1.3  | 67.1              | 49.1             |
| Korea, Rep. of     | 762  | 29.6 | 45.8 | 16.6 | 7.8  | 0.2                    | 45.8 | 0.1     | 0.0            | 0.1  | 46.6              | 44.9             |
| Latvia (LSS)       | 357  | 25.2 | 30.7 | 39.1 | 2.2  | 2.8                    | 30.7 | 0.7     | 0.5            | 1.6  | 33.1              | 28.8             |
| Lithuania          | 287  | 29.6 | 38.8 | 27.8 | 1.0  | 2.7                    | 38.8 | 0.0     | 0.0            | 2.7  | 36.9              | 40.8             |
| Macedonia, Rep. of | 510  | 46.5 | 29.1 | 16.1 | 4.3  | 4.0                    | 29.1 | 1.2     | 0.0            | 2.8  | 32.2              | 26.4             |
| Malaysia           | 696  | 45.1 | 32.9 | 13.8 | 7.6  | 0.7                    | 32.9 | 0.0     | 0.0            | 0.7  | 30.5              | 36.2             |
| Moldova            | 466  | 42.6 | 25.0 | 16.6 | 13.7 | 2.2                    | 25.0 | 1.3     | 0.0            | 0.8  | 23.3              | 27.4             |
| Morocco            | 676  | 44.8 | 23.0 | 15.1 | 14.1 | 3.0                    | 23.0 | 1.8     | 0.3            | 0.9  | 24.8              | 21.7             |
| Netherlands        | 365  | 21.4 | 54.0 | 22.4 | 2.0  | 0.1                    | 54.0 | 0.0     | 0.0            | 0.1  | 49.7              | 59.7             |
| New Zealand        | 458  | 29.9 | 47.5 | 16.0 | 5.5  | 1.1                    | 47.5 | 0.4     | 0.0            | 0.7  | 51.1              | 44.0             |
| Philippines        | 828  | 59.1 | 19.9 | 7.8  | 12.5 | 0.7                    | 19.9 | 0.1     | 0.0            | 0.6  | 20.3              | 19.5             |
| Romania            | 429  | 22.7 | 29.1 | 36.4 | 4.6  | 7.2                    | 29.1 | 3.4     | 0.2            | 3.6  | 24.9              | 33.4             |
| Russian Federation | 543  | 21.7 | 56.4 | 14.5 | 6.2  | 1.3                    | 56.4 | 0.8     | 0.0            | 0.5  | 54.2              | 58.5             |
| Singapore          | 628  | 19.8 | 55.5 | 20.0 | 4.1  | 0.6                    | 55.5 | 0.0     | 0.0            | 0.6  | 54.2              | 56.7             |
| Slovak Republic    | 443  | 21.1 | 47.1 | 25.4 | 4.3  | 2.0                    | 47.1 | 0.5     | 0.0            | 1.5  | 44.0              | 50.3             |
| Slovenia           | 393  | 21.1 | 50.5 | 22.5 | 4.5  | 1.4                    | 50.5 | 0.5     | 0.0            | 0.9  | 53.5              | 47.1             |
| South Africa       | 1056 | 50.6 | 16.1 | 20.4 | 11.8 | 1.2                    | 16.1 | 0.8     | 0.2            | 0.1  | 17.1              | 14.9             |
| Thailand           | 717  | 38.1 | 39.8 | 17.6 | 4.4  | 0.1                    | 39.8 | 0.0     | 0.0            | 0.1  | 36.9              | 43.2             |
| Tunisia            | 632  | 34.4 | 36.1 | 13.7 | 4.2  | 11.6                   | 36.1 | 10.7    | 0.0            | 0.9  | 36.2              | 35.9             |
| Turkey             | 977  | 31.0 | 16.9 | 46.5 | 4.2  | 1.4                    | 16.9 | 0.1     | 0.3            | 1.0  | 17.2              | 16.7             |
| United States      | 1127 | 33.5 | 44.6 | 17.7 | 4.1  | 0.1                    | 44.6 | 0.0     | 0.1            | 0.1  | 44.4              | 44.7             |
| International Avg. | .    | 29.9 | 39.9 | 23.1 | 5.2  | 1.9                    | 39.9 | 0.8     | 0.2            | 0.9  | 39.7              | 40.3             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent



Science: Life Science  
 Label: How glasses/contact lenses work ( S022161 - M11 )  
 Item Type = SA Key = X

| COUNTRY            | N    | NOT REACHED |      |      |      |      |      |      |      |      |      | 1.GIRL<br>% Right | 2.BOY<br>% Right |      |      |
|--------------------|------|-------------|------|------|------|------|------|------|------|------|------|-------------------|------------------|------|------|
|                    |      | 10          | 11   | 12   | 13   | 19   | 70   | 71   | 79   | 99   | V1   |                   |                  |      |      |
| Australia          | 510  | 6.1         | 7.6  | 15.3 | 34.9 | 0.6  | 8.5  | 12.1 | 6.2  | 8.8  | 64.4 | 0.0               | 8.8              | 67.4 | 61.4 |
| Belgium (Flemish)  | 649  | 2.5         | 2.2  | 7.2  | 26.6 | 0.6  | 19.9 | 7.6  | 10.5 | 23.0 | 39.0 | 0.0               | 23.0             | 37.2 | 41.0 |
| Bulgaria           | 413  | 9.5         | 3.2  | 9.7  | 10.8 | 7.0  | 10.2 | 7.3  | 10.3 | 32.0 | 40.2 | 0.2               | 31.7             | 39.1 | 41.4 |
| Canada             | 1106 | 4.7         | 7.4  | 13.5 | 26.1 | 1.0  | 10.2 | 13.3 | 13.2 | 10.6 | 52.7 | 0.0               | 10.6             | 49.0 | 56.1 |
| Chile              | 736  | 0.1         | 0.8  | 4.5  | 31.6 | 0.8  | 5.0  | 20.7 | 11.8 | 24.7 | 37.9 | 0.0               | 24.7             | 38.1 | 37.7 |
| Chinese Taipei     | 719  | 15.2        | 3.1  | 1.9  | 3.3  | 10.8 | 6.3  | 12.5 | 35.5 | 11.3 | 34.3 | 0.0               | 11.3             | 33.2 | 35.4 |
| Cyprus             | 385  | 1.2         | 3.8  | 7.7  | 14.8 | 4.3  | 9.6  | 14.6 | 14.8 | 29.3 | 31.7 | 0.0               | 29.3             | 25.1 | 38.3 |
| Czech Republic     | 437  | 10.7        | 5.4  | 18.4 | 10.0 | 2.9  | 3.0  | 11.4 | 18.1 | 20.1 | 47.5 | 0.0               | 20.1             | 47.6 | 47.3 |
| England            | 379  | 3.3         | 6.9  | 19.6 | 32.4 | 0.2  | 7.9  | 12.3 | 5.5  | 12.0 | 62.4 | 3.7               | 8.2              | 61.5 | 63.3 |
| Finland            | 369  | 1.2         | 2.4  | 15.1 | 32.0 | 6.7  | 12.6 | 5.7  | 11.0 | 13.3 | 57.3 | 0.2               | 13.1             | 53.0 | 61.6 |
| Hong Kong, SAR     | 648  | 14.1        | 5.1  | 7.4  | 3.3  | 1.8  | 8.5  | 19.2 | 21.4 | 19.2 | 31.7 | 0.1               | 19.0             | 33.1 | 30.3 |
| Hungary            | 393  | 5.3         | 6.1  | 7.6  | 27.1 | 1.5  | 3.6  | 19.8 | 6.6  | 22.4 | 47.6 | 0.0               | 22.4             | 46.8 | 48.9 |
| Indonesia          | 733  | 2.2         | 2.3  | 2.1  | 3.3  | 0.8  | 5.9  | 31.6 | 44.7 | 7.2  | 10.6 | 0.0               | 7.2              | 8.9  | 12.3 |
| Iran, Islamic Rep. | 665  | 1.3         | 7.0  | 4.8  | 7.6  | 0.5  | 5.6  | 20.3 | 25.9 | 27.0 | 21.2 | 0.5               | 26.5             | 17.0 | 24.0 |
| Israel             | 515  | 0.7         | 5.4  | 11.8 | 30.5 | 1.6  | 6.3  | 10.4 | 9.9  | 23.3 | 50.0 | 0.4               | 23.0             | 44.8 | 54.9 |
| Italy              | 411  | 5.7         | 2.3  | 9.9  | 15.4 | 3.8  | 13.7 | 15.8 | 13.0 | 20.3 | 37.1 | 0.0               | 20.3             | 31.5 | 44.3 |
| Japan              | 599  | 0.6         | 4.3  | 20.8 | 7.5  | 0.0  | 9.1  | 12.0 | 29.7 | 15.8 | 33.3 | 0.0               | 15.8             | 31.5 | 35.1 |
| Jordan             | 630  | 1.3         | 3.4  | 12.5 | 25.0 | 3.5  | 2.2  | 12.5 | 18.6 | 21.0 | 45.7 | 0.0               | 21.0             | 46.5 | 45.0 |
| Korea, Rep. of     | 762  | 9.7         | 11.0 | 16.3 | 5.9  | 1.9  | 15.1 | 17.7 | 5.1  | 17.1 | 44.9 | 0.0               | 17.1             | 40.2 | 49.4 |
| Latvia (LSS)       | 357  | 3.9         | 5.6  | 16.7 | 19.9 | 7.0  | 4.3  | 14.5 | 8.1  | 19.8 | 53.2 | 0.5               | 19.4             | 50.4 | 55.4 |
| Lithuania          | 287  | 0.3         | 0.3  | 0.4  | 32.8 | 1.9  | 9.9  | 13.6 | 17.6 | 23.2 | 35.7 | 0.0               | 23.2             | 30.5 | 40.9 |
| Macedonia, Rep. of | 510  | 6.8         | 4.1  | 10.5 | 5.0  | 3.0  | 5.4  | 5.8  | 13.2 | 46.2 | 29.5 | 0.0               | 46.2             | 32.6 | 26.6 |
| Malaysia           | 696  | 15.6        | 7.3  | 6.3  | 8.6  | 1.7  | 4.3  | 17.0 | 15.6 | 23.6 | 39.4 | 0.0               | 23.6             | 39.6 | 39.1 |
| Moldova            | 466  | 2.6         | 1.8  | 6.5  | 44.2 | 0.9  | 1.5  | 5.5  | 9.9  | 27.1 | 55.9 | 0.0               | 27.1             | 52.5 | 60.7 |
| Morocco            | 677  | 0.4         | 0.0  | 0.6  | 11.4 | 0.8  | 3.1  | 10.9 | 18.7 | 54.1 | 13.2 | 0.3               | 53.8             | 14.1 | 12.7 |
| Netherlands        | 365  | 4.9         | 4.5  | 5.6  | 32.1 | 1.6  | 11.9 | 10.9 | 24.2 | 4.3  | 48.6 | 0.0               | 4.3              | 37.6 | 63.5 |
| New Zealand        | 458  | 6.0         | 8.9  | 12.9 | 32.5 | 0.6  | 5.6  | 12.1 | 10.8 | 10.7 | 60.9 | 0.0               | 10.7             | 60.6 | 61.1 |
| Philippines        | 827  | 0.0         | 0.6  | 0.6  | 9.5  | 1.6  | 3.7  | 32.2 | 18.2 | 33.5 | 12.4 | 0.0               | 33.5             | 10.5 | 14.6 |
| Romania            | 429  | 15.8        | 2.1  | 5.7  | 15.1 | 1.4  | 1.5  | 8.5  | 8.6  | 41.4 | 40.1 | 0.2               | 41.2             | 36.3 | 43.8 |
| Russian Federation | 543  | 8.0         | 3.4  | 10.5 | 27.7 | 3.0  | 4.1  | 5.8  | 9.6  | 28.0 | 52.6 | 0.0               | 28.0             | 46.2 | 58.7 |
| Singapore          | 628  | 26.3        | 20.4 | 4.3  | 3.2  | 1.7  | 12.4 | 11.3 | 11.4 | 9.1  | 55.9 | 0.0               | 9.1              | 56.3 | 55.5 |
| Slovak Republic    | 443  | 4.0         | 7.0  | 11.5 | 17.9 | 2.7  | 10.5 | 9.8  | 14.8 | 21.9 | 43.0 | 0.0               | 21.9             | 39.2 | 47.0 |
| Slovenia           | 393  | 2.7         | 5.3  | 11.6 | 23.8 | 1.1  | 8.8  | 13.9 | 10.5 | 22.4 | 44.5 | 0.0               | 22.4             | 41.9 | 47.5 |
| South Africa       | 1056 | 0.0         | 0.4  | 1.7  | 5.5  | 0.1  | 2.7  | 16.3 | 28.4 | 44.9 | 7.8  | 0.2               | 44.6             | 6.4  | 9.4  |
| Thailand           | 717  | 0.8         | 1.8  | 21.1 | 13.3 | 7.0  | 18.7 | 22.0 | 6.2  | 9.3  | 43.9 | 0.0               | 9.3              | 46.0 | 41.4 |
| Tunisia            | 631  | 0.2         | 1.2  | 2.7  | 23.7 | 0.5  | 12.4 | 17.8 | 20.2 | 21.5 | 28.2 | 0.2               | 21.3             | 24.4 | 32.2 |
| Turkey             | 977  | 1.5         | 1.5  | 2.9  | 2.1  | 5.9  | 20.5 | 12.2 | 24.1 | 29.4 | 13.8 | 0.3               | 29.1             | 15.6 | 12.6 |
| United States      | 1127 | 2.0         | 9.6  | 10.6 | 24.1 | 0.2  | 14.2 | 22.3 | 10.0 | 7.1  | 46.5 | 0.1               | 7.0              | 41.1 | 51.6 |
| International Avg. | .    | 5.2         | 4.6  | 9.2  | 18.4 | 2.4  | 8.4  | 14.2 | 15.6 | 22.0 | 39.9 | 0.2               | 21.8             | 37.7 | 42.2 |

V1 = % Scoring 1 or better V2 = % Scoring 2 or better V3 = % Scoring 3 or better  
 Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.  
 Because of missing gender information, some totals may appear inconsistent

Science: Scientific Inquiry and the Nature of Science  
 Label: Controlled experiment with cart ( S022222 - M12 )  
 Item Type = MC Key = E

| COUNTRY            | N    | A    | B    | C    | D    | E    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 510  | 4.6  | 21.8 | 5.5  | 6.8  | 59.8 | 1.6                    | 59.8 | 0.4     | 0.0            | 1.1  | 64.1              | 55.2             |
| Belgium (Flemish)  | 649  | 5.1  | 22.9 | 7.4  | 7.8  | 55.8 | 1.0                    | 55.8 | 0.7     | 0.0            | 0.3  | 55.3              | 56.4             |
| Bulgaria           | 413  | 5.4  | 21.0 | 10.3 | 7.0  | 49.3 | 7.1                    | 49.3 | 1.1     | 0.6            | 5.4  | 54.0              | 43.7             |
| Canada             | 1106 | 3.3  | 26.2 | 6.6  | 7.5  | 56.1 | 0.2                    | 56.1 | 0.0     | 0.0            | 0.2  | 56.6              | 55.7             |
| Chile              | 736  | 9.1  | 30.2 | 12.6 | 14.0 | 30.8 | 3.2                    | 30.8 | 0.0     | 0.1            | 3.0  | 31.2              | 30.5             |
| Chinese Taipei     | 719  | 4.5  | 23.9 | 2.1  | 5.3  | 64.0 | 0.2                    | 64.0 | 0.1     | 0.0            | 0.1  | 64.3              | 63.6             |
| Cyprus             | 384  | 3.7  | 30.9 | 16.2 | 11.6 | 35.7 | 1.9                    | 35.7 | 1.4     | 0.0            | 0.5  | 36.5              | 34.9             |
| Czech Republic     | 437  | 5.2  | 21.4 | 8.9  | 5.9  | 56.4 | 2.2                    | 56.4 | 0.4     | 0.0            | 1.8  | 63.9              | 49.5             |
| England            | 379  | 6.2  | 18.0 | 6.2  | 7.1  | 58.5 | 4.0                    | 58.5 | 0.3     | 3.7            | 0.0  | 61.3              | 55.7             |
| Finland            | 369  | 3.1  | 18.2 | 9.3  | 5.8  | 61.6 | 2.0                    | 61.6 | 0.0     | 0.2            | 1.8  | 62.0              | 61.1             |
| Hong Kong, SAR     | 648  | 3.6  | 19.3 | 7.3  | 7.4  | 61.7 | 0.8                    | 61.7 | 0.0     | 0.1            | 0.6  | 64.8              | 58.5             |
| Hungary            | 393  | 2.8  | 22.5 | 5.5  | 8.4  | 56.2 | 4.5                    | 56.2 | 2.4     | 0.3            | 1.8  | 56.7              | 55.9             |
| Indonesia          | 733  | 10.6 | 33.5 | 10.3 | 18.3 | 26.6 | 0.7                    | 26.6 | 0.0     | 0.1            | 0.6  | 29.8              | 23.4             |
| Iran, Islamic Rep. | 665  | 12.0 | 24.2 | 15.4 | 15.9 | 30.2 | 2.3                    | 30.2 | 0.0     | 0.5            | 1.8  | 35.6              | 26.6             |
| Israel             | 514  | 8.5  | 23.1 | 13.8 | 10.1 | 40.9 | 3.6                    | 40.9 | 1.3     | 0.4            | 1.9  | 43.8              | 38.1             |
| Italy              | 411  | 7.7  | 26.8 | 9.5  | 13.9 | 39.1 | 3.0                    | 39.1 | 0.0     | 0.0            | 3.0  | 41.1              | 36.5             |
| Japan              | 599  | 2.1  | 11.4 | 2.3  | 1.3  | 82.7 | 0.1                    | 82.7 | 0.1     | 0.0            | 0.0  | 80.1              | 85.2             |
| Jordan             | 626  | 19.5 | 23.4 | 12.3 | 12.1 | 31.5 | 1.3                    | 31.5 | 0.7     | 0.0            | 0.7  | 34.8              | 28.5             |
| Korea, Rep. of     | 762  | 1.2  | 19.6 | 5.2  | 4.6  | 69.4 | 0.0                    | 69.4 | 0.0     | 0.0            | 0.0  | 71.5              | 67.3             |
| Latvia (LSS)       | 357  | 11.0 | 19.8 | 11.2 | 11.8 | 43.5 | 2.8                    | 43.5 | 1.1     | 0.5            | 1.2  | 43.1              | 44.0             |
| Lithuania          | 287  | 5.7  | 22.7 | 6.0  | 8.3  | 53.3 | 4.1                    | 53.3 | 0.0     | 0.0            | 4.1  | 54.7              | 51.9             |
| Macedonia, Rep. of | 510  | 12.7 | 23.3 | 9.2  | 11.8 | 33.5 | 9.5                    | 33.5 | 1.5     | 0.6            | 7.3  | 34.6              | 32.6             |
| Malaysia           | 696  | 5.7  | 28.8 | 9.4  | 8.6  | 47.4 | 0.1                    | 47.4 | 0.0     | 0.0            | 0.1  | 50.7              | 43.1             |
| Moldova            | 466  | 8.3  | 33.7 | 17.9 | 11.0 | 25.6 | 3.5                    | 25.6 | 1.9     | 0.0            | 1.5  | 26.5              | 24.3             |
| Morocco            | 678  | 14.3 | 24.2 | 19.8 | 16.6 | 17.4 | 7.6                    | 17.4 | 3.6     | 0.3            | 3.7  | 18.0              | 17.0             |
| Netherlands        | 365  | 8.5  | 16.4 | 6.1  | 7.4  | 61.2 | 0.3                    | 61.2 | 0.3     | 0.0            | 0.0  | 60.6              | 61.9             |
| New Zealand        | 459  | 5.2  | 25.6 | 6.6  | 8.2  | 53.9 | 0.5                    | 53.9 | 0.3     | 0.0            | 0.2  | 58.1              | 49.8             |
| Philippines        | 828  | 26.1 | 25.3 | 9.0  | 12.6 | 26.0 | 1.1                    | 26.0 | 0.3     | 0.0            | 0.8  | 29.8              | 21.7             |
| Romania            | 429  | 13.4 | 28.2 | 11.8 | 12.5 | 27.6 | 6.5                    | 27.6 | 2.4     | 0.2            | 3.9  | 29.6              | 25.6             |
| Russian Federation | 543  | 8.2  | 21.8 | 8.4  | 8.2  | 48.8 | 4.6                    | 48.8 | 1.0     | 0.1            | 3.4  | 50.3              | 47.3             |
| Singapore          | 628  | 3.7  | 12.6 | 2.0  | 2.4  | 79.1 | 0.1                    | 79.1 | 0.1     | 0.0            | 0.0  | 79.9              | 78.4             |
| Slovak Republic    | 443  | 5.0  | 27.7 | 6.8  | 8.9  | 48.0 | 3.5                    | 48.0 | 1.2     | 0.0            | 2.3  | 49.0              | 47.1             |
| Slovenia           | 393  | 5.0  | 22.3 | 7.9  | 6.4  | 54.5 | 4.0                    | 54.5 | 1.9     | 0.0            | 2.1  | 54.4              | 54.5             |
| South Africa       | 1056 | 18.3 | 29.0 | 13.4 | 14.8 | 22.3 | 2.2                    | 22.3 | 0.9     | 0.2            | 1.1  | 22.5              | 22.1             |
| Thailand           | 717  | 12.6 | 27.7 | 9.7  | 10.8 | 38.8 | 0.4                    | 38.8 | 0.2     | 0.0            | 0.1  | 42.0              | 35.0             |
| Tunisia            | 632  | 7.0  | 22.9 | 16.5 | 11.4 | 26.7 | 15.5                   | 26.7 | 13.2    | 0.5            | 1.8  | 24.8              | 28.8             |
| Turkey             | 976  | 8.0  | 29.3 | 13.9 | 19.6 | 27.4 | 1.8                    | 27.4 | 0.1     | 0.5            | 1.2  | 31.1              | 24.8             |
| United States      | 1127 | 5.5  | 27.9 | 7.0  | 8.2  | 50.9 | 0.4                    | 50.9 | 0.1     | 0.1            | 0.2  | 51.8              | 50.1             |
| International Avg. | .    | 8.0  | 23.9 | 9.5  | 9.8  | 46.1 | 2.8                    | 46.1 | 1.0     | 0.2            | 1.6  | 47.9              | 44.4             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Chemistry  
 Label: Candles burning in 3 jars ( S022191 - M13 )  
 Item Type = EX Key = X

| COUNTRY            | N    | 20   | 29   | 10   | 11   | 19  | 70   | 71   | 72   | 79   | 99  | V1   | V2   | NOT   | OMIT | 1.GIRL  | 2.BOY   |
|--------------------|------|------|------|------|------|-----|------|------|------|------|-----|------|------|-------|------|---------|---------|
|                    |      |      |      |      |      |     |      |      |      |      |     |      |      | REACH |      | % Right | % Right |
| Australia          | 510  | 75.6 | 0.0  | 7.3  | 1.5  | 0.4 | 2.9  | 6.6  | 3.3  | 1.1  | 1.3 | 84.7 | 75.6 | 0.3   | 1.0  | 70.6    | 80.8    |
| Belgium (Flemish)  | 649  | 83.7 | 0.1  | 7.2  | 2.1  | 1.8 | 2.1  | 0.7  | 1.9  | 0.4  | 0.0 | 94.8 | 83.8 | 0.0   | 0.0  | 83.2    | 84.4    |
| Bulgaria           | 413  | 56.7 | 0.4  | 11.5 | 4.9  | 0.9 | 7.4  | 0.9  | 2.1  | 9.2  | 6.1 | 74.4 | 57.1 | 0.9   | 5.1  | 62.0    | 51.2    |
| Canada             | 1106 | 72.7 | 0.0  | 12.1 | 1.1  | 0.3 | 4.6  | 4.7  | 1.6  | 2.5  | 0.4 | 86.2 | 72.7 | 0.0   | 0.4  | 71.4    | 74.1    |
| Chile              | 736  | 40.6 | 0.0  | 9.3  | 7.2  | 0.1 | 12.6 | 17.9 | 4.8  | 3.9  | 3.6 | 57.2 | 40.6 | 0.3   | 3.3  | 31.4    | 49.2    |
| Chinese Taipei     | 719  | 68.9 | 0.0  | 18.3 | 2.1  | 0.6 | 4.8  | 0.6  | 0.0  | 4.4  | 0.3 | 89.9 | 68.9 | 0.0   | 0.3  | 70.4    | 67.3    |
| Cyprus             | 375  | 53.6 | 0.9  | 5.4  | 2.2  | 4.3 | 5.0  | 12.3 | 7.1  | 5.9  | 3.2 | 66.4 | 54.5 | 0.0   | 3.2  | 46.0    | 62.8    |
| Czech Republic     | 438  | 64.1 | 0.0  | 20.1 | 3.6  | 0.4 | 4.7  | 2.7  | 3.9  | 0.6  | 0.0 | 88.1 | 64.1 | 0.0   | 0.0  | 59.4    | 68.4    |
| England            | 379  | 69.9 | 0.0  | 8.7  | 2.3  | 0.5 | 4.3  | 5.1  | 4.3  | 0.8  | 4.1 | 81.4 | 69.9 | 3.7   | 0.3  | 61.7    | 77.7    |
| Finland            | 369  | 81.4 | 0.4  | 10.3 | 1.1  | 1.0 | 2.5  | 0.2  | 1.3  | 1.0  | 0.8 | 94.2 | 81.8 | 0.2   | 0.6  | 86.5    | 77.3    |
| Hong Kong, SAR     | 648  | 66.4 | 0.0  | 20.1 | 0.8  | 2.2 | 4.5  | 0.8  | 3.4  | 0.3  | 1.5 | 89.5 | 66.4 | 0.1   | 1.4  | 65.6    | 67.2    |
| Hungary            | 393  | 74.4 | 0.2  | 8.1  | 5.3  | 2.0 | 1.8  | 1.7  | 3.6  | 1.5  | 1.5 | 90.0 | 74.6 | 0.3   | 1.2  | 72.4    | 76.7    |
| Indonesia          | 731  | 18.1 | 0.7  | 9.5  | 7.9  | 1.2 | 23.1 | 14.7 | 10.2 | 14.0 | 0.7 | 37.4 | 18.8 | 0.1   | 0.6  | 15.1    | 22.4    |
| Iran, Islamic Rep. | 665  | 42.7 | 0.5  | 14.8 | 11.3 | 0.8 | 5.9  | 7.2  | 12.8 | 2.5  | 1.5 | 70.1 | 43.1 | 0.5   | 1.1  | 38.7    | 46.1    |
| Israel             | 515  | 56.2 | 0.4  | 10.0 | 4.5  | 1.1 | 4.1  | 8.6  | 4.4  | 6.3  | 4.3 | 72.3 | 56.6 | 0.5   | 3.8  | 50.1    | 62.7    |
| Italy              | 411  | 70.0 | 0.5  | 6.8  | 3.8  | 1.4 | 5.0  | 4.2  | 6.2  | 0.7  | 1.4 | 82.5 | 70.5 | 0.0   | 1.4  | 67.6    | 74.1    |
| Japan              | 599  | 78.3 | 0.5  | 9.4  | 0.5  | 0.1 | 5.0  | 0.9  | 4.2  | 0.3  | 0.8 | 88.8 | 78.8 | 0.0   | 0.8  | 78.6    | 78.9    |
| Jordan             | 629  | 34.8 | 5.5  | 9.4  | 11.3 | 2.7 | 7.3  | 6.1  | 11.0 | 10.6 | 1.5 | 63.6 | 40.3 | 0.0   | 1.5  | 40.5    | 40.0    |
| Korea, Rep. of     | 762  | 79.2 | 0.0  | 14.3 | 0.5  | 0.0 | 2.8  | 2.1  | 0.3  | 0.5  | 0.4 | 94.0 | 79.2 | 0.0   | 0.4  | 79.4    | 79.0    |
| Latvia (LSS)       | 357  | 57.8 | 0.0  | 11.3 | 9.6  | 3.0 | 5.6  | 2.4  | 7.0  | 2.1  | 1.3 | 81.7 | 57.8 | 0.5   | 0.7  | 55.5    | 59.7    |
| Lithuania          | 287  | 58.9 | 9.7  | 12.1 | 2.6  | 1.6 | 4.5  | 6.1  | 3.0  | 0.0  | 1.6 | 84.8 | 68.6 | 0.0   | 1.6  | 63.4    | 73.8    |
| Macedonia, Rep. of | 510  | 44.8 | 6.1  | 16.2 | 5.7  | 2.9 | 6.9  | 1.0  | 1.4  | 8.6  | 6.5 | 75.6 | 50.9 | 0.6   | 5.8  | 48.1    | 53.3    |
| Malaysia           | 696  | 55.7 | 1.1  | 14.0 | 6.9  | 0.5 | 9.8  | 7.2  | 1.9  | 2.1  | 0.7 | 78.3 | 56.8 | 0.0   | 0.7  | 52.4    | 62.7    |
| Moldova            | 466  | 48.8 | 0.0  | 12.9 | 14.0 | 0.9 | 8.6  | 1.7  | 4.1  | 6.0  | 2.9 | 76.6 | 48.8 | 0.0   | 2.9  | 46.5    | 52.0    |
| Morocco            | 677  | 27.9 | 3.5  | 12.2 | 7.6  | 6.2 | 10.7 | 8.3  | 5.9  | 13.7 | 3.9 | 57.4 | 31.4 | 0.4   | 3.5  | 27.9    | 33.8    |
| Netherlands        | 365  | 83.0 | 1.1  | 6.2  | 2.2  | 1.7 | 4.2  | 0.4  | 1.2  | 0.1  | 0.0 | 94.2 | 84.1 | 0.0   | 0.0  | 83.9    | 84.3    |
| New Zealand        | 459  | 68.6 | 0.2  | 10.0 | 4.3  | 0.3 | 4.9  | 6.0  | 4.5  | 0.7  | 0.5 | 83.4 | 68.8 | 0.0   | 0.5  | 67.3    | 70.2    |
| Philippines        | 828  | 9.6  | 0.4  | 6.5  | 4.0  | 8.1 | 2.6  | 6.2  | 50.2 | 6.1  | 6.3 | 28.5 | 10.0 | 0.3   | 6.0  | 9.2     | 10.9    |
| Romania            | 429  | 53.2 | 0.8  | 6.5  | 12.1 | 2.8 | 6.8  | 3.5  | 3.3  | 3.6  | 7.4 | 75.4 | 54.0 | 0.2   | 7.1  | 50.0    | 58.0    |
| Russian Federation | 543  | 72.8 | 0.0  | 9.9  | 4.4  | 0.8 | 5.4  | 0.9  | 2.0  | 1.9  | 2.0 | 87.8 | 72.8 | 0.1   | 1.9  | 70.3    | 75.2    |
| Singapore          | 628  | 81.3 | 0.6  | 6.4  | 1.3  | 0.2 | 2.9  | 4.4  | 2.4  | 0.2  | 0.3 | 89.8 | 81.9 | 0.0   | 0.3  | 77.8    | 85.6    |
| Slovak Republic    | 443  | 62.8 | 9.5  | 12.9 | 2.0  | 1.9 | 3.6  | 0.9  | 4.0  | 0.9  | 1.4 | 89.1 | 72.3 | 0.0   | 1.4  | 66.5    | 78.3    |
| Slovenia           | 393  | 81.6 | 0.0  | 8.7  | 2.5  | 0.5 | 3.7  | 1.3  | 1.1  | 0.2  | 0.3 | 93.3 | 81.6 | 0.0   | 0.3  | 81.8    | 81.4    |
| South Africa       | 1056 | 11.4 | 0.1  | 3.3  | 2.1  | 0.1 | 9.2  | 4.9  | 58.3 | 8.4  | 2.2 | 17.0 | 11.5 | 0.4   | 1.8  | 9.4     | 14.2    |
| Thailand           | 717  | 38.2 | 0.2  | 16.3 | 10.5 | 0.9 | 4.6  | 22.6 | 5.2  | 0.8  | 0.7 | 66.1 | 38.4 | 0.0   | 0.7  | 34.1    | 43.5    |
| Tunisia            | 631  | 40.3 | 13.5 | 11.1 | 13.2 | 9.1 | 4.8  | 2.0  | 4.3  | 0.5  | 1.1 | 87.3 | 53.8 | 0.5   | 0.6  | 47.6    | 60.4    |
| Turkey             | 976  | 52.2 | 0.7  | 12.0 | 12.4 | 0.9 | 4.4  | 4.6  | 2.2  | 6.1  | 4.5 | 78.2 | 52.9 | 0.5   | 4.0  | 49.0    | 55.5    |
| United States      | 1127 | 64.1 | 0.0  | 9.5  | 2.3  | 0.0 | 8.2  | 7.4  | 5.9  | 1.6  | 0.9 | 75.9 | 64.1 | 0.1   | 0.8  | 59.8    | 68.3    |
| International Avg. | .    | 57.9 | 1.5  | 10.8 | 5.1  | 1.7 | 5.8  | 5.0  | 6.7  | 3.4  | 2.0 | 77.0 | 59.4 | 0.3   | 1.8  | 56.6    | 62.1    |

V1 = % Scoring 1 or better V2 = % Scoring 2 or better V3 = % Scoring 3 or better  
 Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.  
 Because of missing gender information, some totals may appear inconsistent

Science: Physics  
 Label: Brush reflected in mirror at angle ( S022279 - M14 )  
 Item Type = SA Key = X

| COUNTRY            | N    | NOT REACHED |     |      |      |     |     |      |      |      |     | 1.GIRL |         | 2.BOY   |  |
|--------------------|------|-------------|-----|------|------|-----|-----|------|------|------|-----|--------|---------|---------|--|
|                    |      | 10          | 70  | 71   | 72   | 73  | 74  | 79   | 99   | V1   | ED  | OMIT   | % Right | % Right |  |
| Australia          | 510  | 68.8        | 1.8 | 14.9 | 4.0  | 1.4 | 2.4 | 4.8  | 1.8  | 68.8 | 0.3 | 1.5    | 70.2    | 67.4    |  |
| Belgium (Flemish)  | 649  | 78.5        | 0.8 | 9.7  | 2.8  | 2.6 | 1.0 | 4.2  | 0.4  | 78.5 | 0.0 | 0.4    | 80.5    | 76.3    |  |
| Bulgaria           | 413  | 44.2        | 1.5 | 19.8 | 2.2  | 2.0 | 2.6 | 9.9  | 17.9 | 44.2 | 1.2 | 16.7   | 47.6    | 40.1    |  |
| Canada             | 1106 | 65.1        | 2.3 | 18.7 | 2.3  | 1.8 | 4.0 | 3.1  | 2.7  | 65.1 | 0.0 | 2.7    | 63.3    | 66.8    |  |
| Chile              | 736  | 39.5        | 1.0 | 35.6 | 4.5  | 2.6 | 4.1 | 3.4  | 9.2  | 39.5 | 0.5 | 8.6    | 35.2    | 43.5    |  |
| Chinese Taipei     | 719  | 55.6        | 3.6 | 25.5 | 4.7  | 1.7 | 3.3 | 4.3  | 1.3  | 55.6 | 0.0 | 1.3    | 56.0    | 55.2    |  |
| Cyprus             | 383  | 28.4        | 2.3 | 27.9 | 12.5 | 3.5 | 5.5 | 11.2 | 8.7  | 28.4 | 0.0 | 8.7    | 28.2    | 28.7    |  |
| Czech Republic     | 438  | 61.4        | 3.0 | 11.7 | 5.4  | 2.8 | 6.5 | 7.6  | 1.7  | 61.4 | 0.0 | 1.7    | 62.1    | 60.7    |  |
| England            | 379  | 72.8        | 1.2 | 13.6 | 3.0  | 1.8 | 1.3 | 2.0  | 4.1  | 72.8 | 3.7 | 0.4    | 72.3    | 73.4    |  |
| Finland            | 369  | 61.4        | 2.2 | 15.4 | 5.0  | 2.1 | 4.3 | 7.7  | 1.8  | 61.4 | 0.2 | 1.7    | 65.2    | 57.7    |  |
| Hong Kong, SAR     | 648  | 57.7        | 3.1 | 20.1 | 4.9  | 1.8 | 3.2 | 6.4  | 2.8  | 57.7 | 0.3 | 2.5    | 58.8    | 56.6    |  |
| Hungary            | 393  | 69.1        | 1.2 | 16.1 | 2.3  | 2.4 | 2.1 | 4.2  | 2.8  | 69.1 | 0.3 | 2.5    | 64.0    | 74.6    |  |
| Indonesia          | 730  | 42.3        | 0.6 | 29.4 | 3.7  | 1.3 | 3.8 | 12.0 | 6.8  | 42.3 | 0.1 | 6.7    | 34.4    | 50.0    |  |
| Iran, Islamic Rep. | 665  | 35.1        | 2.6 | 31.4 | 9.7  | 1.4 | 3.8 | 10.4 | 5.6  | 35.1 | 0.5 | 5.1    | 30.8    | 38.0    |  |
| Israel             | 515  | 36.8        | 2.4 | 28.8 | 4.6  | 1.9 | 4.1 | 11.5 | 9.9  | 36.8 | 0.5 | 9.3    | 37.5    | 36.0    |  |
| Italy              | 411  | 40.1        | 2.6 | 25.7 | 3.0  | 1.8 | 2.3 | 13.2 | 11.3 | 40.1 | 0.0 | 11.3   | 48.1    | 30.1    |  |
| Japan              | 599  | 67.9        | 0.7 | 16.9 | 4.0  | 2.2 | 1.9 | 5.1  | 1.3  | 67.9 | 0.0 | 1.3    | 68.0    | 67.8    |  |
| Jordan             | 629  | 15.5        | 2.4 | 49.1 | 3.5  | 2.7 | 2.8 | 14.3 | 9.8  | 15.5 | 0.2 | 9.7    | 16.0    | 15.0    |  |
| Korea, Rep. of     | 762  | 53.2        | 0.5 | 25.3 | 6.4  | 1.6 | 6.7 | 4.6  | 1.7  | 53.2 | 0.0 | 1.7    | 52.5    | 53.9    |  |
| Latvia (LSS)       | 357  | 64.1        | 0.7 | 16.0 | 6.3  | 4.4 | 2.4 | 4.4  | 1.6  | 64.1 | 0.5 | 1.0    | 61.6    | 66.8    |  |
| Lithuania          | 287  | 55.7        | 0.3 | 26.2 | 6.2  | 2.6 | 3.2 | 2.7  | 3.1  | 55.7 | 0.0 | 3.1    | 57.2    | 54.1    |  |
| Macedonia, Rep. of | 510  | 31.2        | 5.3 | 19.9 | 3.0  | 1.3 | 0.7 | 15.1 | 23.5 | 31.2 | 0.9 | 22.6   | 29.9    | 32.3    |  |
| Malaysia           | 696  | 50.2        | 1.9 | 30.1 | 4.0  | 1.0 | 5.3 | 4.7  | 2.8  | 50.2 | 0.1 | 2.6    | 48.4    | 52.7    |  |
| Moldova            | 466  | 43.7        | 1.4 | 25.4 | 1.5  | 0.6 | 1.6 | 15.1 | 10.8 | 43.7 | 0.0 | 10.8   | 43.0    | 44.6    |  |
| Morocco            | 676  | 25.2        | 0.0 | 30.0 | 1.7  | 0.8 | 1.3 | 17.7 | 23.3 | 25.2 | 0.5 | 22.8   | 27.6    | 23.6    |  |
| Netherlands        | 365  | 73.7        | 0.8 | 11.0 | 4.9  | 1.9 | 2.3 | 4.6  | 0.9  | 73.7 | 0.0 | 0.9    | 73.6    | 73.7    |  |
| New Zealand        | 459  | 67.0        | 1.4 | 16.3 | 5.1  | 0.4 | 3.6 | 3.8  | 2.3  | 67.0 | 0.0 | 2.3    | 66.3    | 67.7    |  |
| Philippines        | 828  | 21.3        | 0.1 | 26.7 | 2.5  | 2.6 | 2.0 | 21.8 | 23.1 | 21.3 | 0.4 | 22.7   | 19.1    | 23.8    |  |
| Romania            | 429  | 32.0        | 1.6 | 38.8 | 3.0  | 2.7 | 0.8 | 5.3  | 15.8 | 32.0 | 0.7 | 15.1   | 32.0    | 32.0    |  |
| Russian Federation | 543  | 58.4        | 1.8 | 23.1 | 2.7  | 0.9 | 0.9 | 9.1  | 3.0  | 58.4 | 0.1 | 2.9    | 58.4    | 58.4    |  |
| Singapore          | 628  | 63.1        | 1.1 | 23.1 | 4.7  | 1.0 | 1.7 | 4.2  | 1.1  | 63.1 | 0.0 | 1.1    | 63.1    | 63.2    |  |
| Slovak Republic    | 443  | 54.0        | 0.6 | 21.5 | 4.7  | 3.0 | 4.4 | 6.7  | 5.1  | 54.0 | 0.0 | 5.1    | 51.3    | 56.8    |  |
| Slovenia           | 393  | 54.9        | 1.6 | 24.3 | 4.5  | 1.7 | 2.5 | 8.3  | 2.2  | 54.9 | 0.0 | 2.2    | 57.0    | 52.4    |  |
| South Africa       | 1056 | 8.4         | 0.6 | 20.0 | 1.1  | 1.5 | 1.3 | 30.9 | 36.2 | 8.4  | 0.6 | 35.6   | 6.2     | 11.1    |  |
| Thailand           | 717  | 41.4        | 1.8 | 39.6 | 5.6  | 0.4 | 4.4 | 2.8  | 4.0  | 41.4 | 0.0 | 4.0    | 39.3    | 43.9    |  |
| Tunisia            | 622  | 36.3        | 0.9 | 19.0 | 7.9  | 2.8 | 4.3 | 16.1 | 12.7 | 36.3 | 0.5 | 12.2   | 34.2    | 38.6    |  |
| Turkey             | 977  | 30.7        | 6.3 | 32.7 | 3.0  | 2.1 | 0.4 | 8.9  | 15.9 | 30.7 | 0.5 | 15.4   | 34.9    | 27.9    |  |
| United States      | 1127 | 49.0        | 0.5 | 22.0 | 4.4  | 1.6 | 3.6 | 16.1 | 2.9  | 49.0 | 0.1 | 2.8    | 46.0    | 51.9    |  |
| International Avg. | .    | 48.8        | 1.7 | 23.7 | 4.4  | 1.9 | 3.0 | 8.9  | 7.7  | 48.8 | 0.3 | 7.3    | 48.4    | 49.1    |  |

V1 = % Scoring 1 or better V2 = % Scoring 2 or better V3 = % Scoring 3 or better  
 Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.  
 Because of missing gender information, some totals may appear inconsistent

Science: Physics  
 Label: Path of ball released from orbit ( S022040 - M15 )  
 Item Type = MC Key = A

| COUNTRY            | N    | A    | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 510  | 80.4 | 6.4  | 9.0  | 3.5  | 0.7                    | 80.4 | 0.0     | 0.3            | 0.4  | 76.5              | 84.4             |
| Belgium (Flemish)  | 649  | 78.1 | 11.0 | 6.3  | 4.3  | 0.3                    | 78.1 | 0.0     | 0.0            | 0.3  | 79.3              | 76.8             |
| Bulgaria           | 413  | 51.7 | 16.0 | 12.7 | 11.9 | 7.7                    | 51.7 | 0.6     | 1.9            | 5.2  | 55.4              | 47.3             |
| Canada             | 1106 | 78.5 | 8.9  | 10.0 | 2.6  | 0.1                    | 78.5 | 0.0     | 0.0            | 0.1  | 77.8              | 79.3             |
| Chile              | 736  | 53.2 | 20.6 | 13.3 | 8.5  | 4.3                    | 53.2 | 0.0     | 0.8            | 3.5  | 45.9              | 59.9             |
| Chinese Taipei     | 719  | 66.6 | 21.4 | 7.8  | 3.9  | 0.3                    | 66.6 | 0.0     | 0.0            | 0.3  | 62.7              | 70.5             |
| Cyprus             | 387  | 57.3 | 16.9 | 15.1 | 9.6  | 1.1                    | 57.3 | 0.2     | 0.0            | 0.8  | 54.9              | 59.7             |
| Czech Republic     | 438  | 73.0 | 11.2 | 9.7  | 5.2  | 0.9                    | 73.0 | 0.0     | 0.2            | 0.6  | 71.8              | 74.0             |
| England            | 379  | 74.4 | 11.1 | 8.2  | 2.2  | 4.0                    | 74.4 | 0.0     | 3.7            | 0.3  | 70.9              | 77.8             |
| Finland            | 369  | 76.1 | 7.4  | 12.8 | 3.2  | 0.5                    | 76.1 | 0.0     | 0.2            | 0.3  | 79.1              | 73.1             |
| Hong Kong, SAR     | 648  | 65.1 | 20.3 | 9.1  | 4.7  | 0.8                    | 65.1 | 0.0     | 0.3            | 0.5  | 61.2              | 69.1             |
| Hungary            | 393  | 79.2 | 4.2  | 10.1 | 4.8  | 1.7                    | 79.2 | 0.0     | 0.6            | 1.1  | 78.5              | 79.7             |
| Indonesia          | 733  | 54.3 | 24.1 | 11.2 | 8.4  | 2.1                    | 54.3 | 0.0     | 0.3            | 1.8  | 41.3              | 67.0             |
| Iran, Islamic Rep. | 665  | 43.5 | 22.6 | 16.3 | 14.7 | 2.9                    | 43.5 | 0.0     | 1.3            | 1.6  | 37.8              | 47.3             |
| Israel             | 514  | 49.0 | 22.1 | 12.1 | 9.6  | 7.2                    | 49.0 | 0.9     | 1.3            | 5.0  | 42.4              | 55.3             |
| Italy              | 411  | 58.0 | 15.5 | 13.7 | 11.1 | 1.7                    | 58.0 | 0.0     | 0.2            | 1.5  | 52.9              | 64.5             |
| Japan              | 599  | 77.9 | 9.4  | 10.7 | 1.9  | 0.2                    | 77.9 | 0.0     | 0.0            | 0.2  | 77.3              | 78.4             |
| Jordan             | 630  | 41.0 | 27.2 | 16.1 | 13.7 | 2.0                    | 41.0 | 0.3     | 0.2            | 1.5  | 38.8              | 42.9             |
| Korea, Rep. of     | 762  | 73.0 | 15.2 | 9.5  | 2.3  | 0.1                    | 73.0 | 0.0     | 0.1            | 0.0  | 70.0              | 75.9             |
| Latvia (LSS)       | 357  | 67.6 | 9.6  | 15.5 | 5.6  | 1.8                    | 67.6 | 0.0     | 0.5            | 1.2  | 66.5              | 68.9             |
| Lithuania          | 287  | 70.0 | 8.2  | 16.7 | 3.7  | 1.4                    | 70.0 | 0.0     | 0.0            | 1.4  | 70.6              | 69.4             |
| Macedonia, Rep. of | 510  | 41.9 | 32.3 | 12.0 | 8.0  | 5.8                    | 41.9 | 0.0     | 1.8            | 4.1  | 34.0              | 48.9             |
| Malaysia           | 696  | 70.5 | 9.4  | 9.1  | 10.6 | 0.5                    | 70.5 | 0.0     | 0.3            | 0.1  | 63.3              | 79.8             |
| Moldova            | 466  | 49.0 | 16.6 | 18.5 | 14.3 | 1.6                    | 49.0 | 0.0     | 0.2            | 1.4  | 45.4              | 53.9             |
| Morocco            | 676  | 30.0 | 26.8 | 17.7 | 16.7 | 8.9                    | 30.0 | 0.0     | 2.3            | 6.5  | 24.0              | 34.2             |
| Netherlands        | 365  | 77.6 | 10.4 | 7.4  | 4.6  | 0.0                    | 77.6 | 0.0     | 0.0            | 0.0  | 73.7              | 82.8             |
| New Zealand        | 459  | 75.0 | 12.1 | 7.8  | 4.6  | 0.5                    | 75.0 | 0.0     | 0.0            | 0.5  | 74.8              | 75.3             |
| Philippines        | 828  | 37.1 | 43.1 | 11.5 | 6.6  | 1.7                    | 37.1 | 0.1     | 0.8            | 0.8  | 30.4              | 44.8             |
| Romania            | 429  | 62.1 | 10.6 | 16.1 | 9.0  | 2.3                    | 62.1 | 0.0     | 0.7            | 1.6  | 55.9              | 68.2             |
| Russian Federation | 543  | 76.6 | 9.9  | 6.0  | 5.9  | 1.6                    | 76.6 | 0.0     | 0.2            | 1.3  | 70.5              | 82.5             |
| Singapore          | 628  | 76.1 | 15.2 | 5.4  | 3.2  | 0.2                    | 76.1 | 0.0     | 0.0            | 0.2  | 70.0              | 81.5             |
| Slovak Republic    | 443  | 72.5 | 7.1  | 13.2 | 6.1  | 1.2                    | 72.5 | 0.3     | 0.0            | 0.9  | 68.4              | 76.8             |
| Slovenia           | 393  | 69.2 | 15.4 | 10.8 | 3.5  | 1.0                    | 69.2 | 0.0     | 0.0            | 1.0  | 64.5              | 74.5             |
| South Africa       | 1056 | 24.1 | 36.2 | 23.9 | 13.1 | 2.7                    | 24.1 | 0.4     | 0.7            | 1.6  | 21.3              | 27.5             |
| Thailand           | 717  | 63.5 | 19.2 | 8.0  | 8.2  | 1.2                    | 63.5 | 0.0     | 0.6            | 0.6  | 58.9              | 68.8             |
| Tunisia            | 632  | 40.2 | 25.1 | 20.4 | 9.5  | 4.8                    | 40.2 | 0.7     | 1.3            | 2.8  | 28.7              | 52.3             |
| Turkey             | 977  | 51.4 | 21.7 | 13.0 | 11.5 | 2.3                    | 51.4 | 0.0     | 0.5            | 1.9  | 43.2              | 57.1             |
| United States      | 1127 | 70.9 | 11.5 | 13.9 | 3.4  | 0.4                    | 70.9 | 0.0     | 0.2            | 0.1  | 71.3              | 70.5             |
| International Avg. | .    | 62.0 | 16.6 | 12.1 | 7.2  | 2.1                    | 62.0 | 0.1     | 0.6            | 1.4  | 58.2              | 65.8             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Physics  
 Label: Complete circuits ( S022007 - N01 )  
 Item Type = MC Key = C

| COUNTRY            | N    | A    | B    | C    | D    | E    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 491  | 17.0 | 2.9  | 73.3 | 2.4  | 3.7  | 0.8                    | 73.3 | 0.2     | 0.0            | 0.6  | 71.9              | 75.1             |
| Belgium (Flemish)  | 663  | 3.9  | 2.7  | 80.6 | 6.3  | 5.4  | 1.2                    | 80.6 | 0.1     | 0.0            | 1.1  | 75.1              | 86.1             |
| Bulgaria           | 404  | 27.1 | 5.4  | 56.8 | 2.2  | 4.3  | 4.1                    | 56.8 | 0.3     | 0.7            | 3.2  | 52.3              | 61.4             |
| Canada             | 1094 | 24.4 | 2.9  | 60.5 | 7.4  | 4.6  | 0.2                    | 60.5 | 0.1     | 0.0            | 0.1  | 54.8              | 67.0             |
| Chile              | 750  | 23.4 | 4.7  | 50.1 | 12.4 | 8.9  | 0.5                    | 50.1 | 0.1     | 0.0            | 0.4  | 46.7              | 53.7             |
| Chinese Taipei     | 724  | 8.9  | 4.7  | 79.5 | 3.9  | 2.2  | 0.7                    | 79.5 | 0.1     | 0.0            | 0.5  | 74.7              | 84.9             |
| Cyprus             | 386  | 16.0 | 4.0  | 68.9 | 6.4  | 4.1  | 0.6                    | 68.9 | 0.1     | 0.0            | 0.5  | 65.8              | 71.5             |
| Czech Republic     | 425  | 13.3 | 6.2  | 72.1 | 3.5  | 4.3  | 0.6                    | 72.1 | 0.3     | 0.0            | 0.3  | 65.4              | 78.1             |
| England            | 363  | 27.2 | 2.1  | 65.1 | 1.2  | 2.5  | 1.9                    | 65.1 | 0.0     | 1.9            | 0.0  | 59.4              | 70.5             |
| Finland            | 368  | 13.9 | 3.0  | 68.5 | 8.5  | 4.9  | 1.2                    | 68.5 | 0.0     | 0.0            | 1.2  | 67.7              | 69.2             |
| Hong Kong, SAR     | 646  | 7.4  | 2.8  | 84.0 | 1.6  | 3.6  | 0.5                    | 84.0 | 0.1     | 0.2            | 0.2  | 83.5              | 84.5             |
| Hungary            | 392  | 7.5  | 5.5  | 73.9 | 5.1  | 7.3  | 0.8                    | 73.9 | 0.0     | 0.3            | 0.5  | 65.9              | 80.4             |
| Indonesia          | 725  | 17.0 | 9.8  | 51.6 | 10.7 | 10.3 | 0.5                    | 51.6 | 0.0     | 0.0            | 0.5  | 42.2              | 60.2             |
| Iran, Islamic Rep. | 664  | 27.1 | 8.4  | 42.8 | 10.5 | 10.2 | 1.0                    | 42.8 | 0.0     | 0.0            | 1.0  | 32.4              | 49.9             |
| Israel             | 524  | 7.8  | 5.1  | 79.1 | 2.3  | 3.8  | 1.9                    | 79.1 | 0.4     | 0.7            | 0.7  | 78.9              | 79.3             |
| Italy              | 412  | 26.0 | 4.2  | 56.3 | 6.0  | 6.5  | 1.0                    | 56.3 | 0.0     | 0.0            | 1.0  | 52.6              | 59.8             |
| Japan              | 590  | 15.8 | 3.9  | 68.4 | 1.4  | 10.2 | 0.2                    | 68.4 | 0.0     | 0.0            | 0.2  | 64.4              | 72.3             |
| Jordan             | 624  | 7.2  | 9.8  | 69.9 | 4.0  | 7.4  | 1.7                    | 69.9 | 0.7     | 0.2            | 0.8  | 70.4              | 69.4             |
| Korea, Rep. of     | 763  | 13.1 | 3.3  | 77.8 | 2.9  | 2.6  | 0.4                    | 77.8 | 0.1     | 0.1            | 0.1  | 77.4              | 78.1             |
| Latvia (LSS)       | 361  | 20.3 | 5.5  | 56.0 | 12.2 | 3.6  | 2.4                    | 56.0 | 0.2     | 0.0            | 2.2  | 43.5              | 68.2             |
| Lithuania          | 293  | 20.6 | 3.5  | 63.2 | 6.8  | 4.0  | 2.0                    | 63.2 | 0.6     | 0.0            | 1.4  | 54.2              | 73.0             |
| Macedonia, Rep. of | 502  | 30.2 | 6.8  | 47.7 | 6.4  | 5.7  | 3.2                    | 47.7 | 0.3     | 0.6            | 2.2  | 41.7              | 53.5             |
| Malaysia           | 699  | 19.7 | 1.5  | 72.4 | 3.8  | 2.5  | 0.2                    | 72.4 | 0.0     | 0.0            | 0.2  | 70.1              | 75.1             |
| Moldova            | 462  | 20.3 | 9.1  | 48.1 | 9.1  | 9.9  | 3.5                    | 48.1 | 1.4     | 0.6            | 1.5  | 44.3              | 52.9             |
| Morocco            | 674  | 14.3 | 11.8 | 56.2 | 6.9  | 9.4  | 1.5                    | 56.2 | 0.0     | 0.1            | 1.3  | 51.6              | 59.1             |
| Netherlands        | 362  | 7.5  | 3.8  | 77.7 | 4.0  | 6.8  | 0.3                    | 77.7 | 0.0     | 0.0            | 0.3  | 75.1              | 80.6             |
| New Zealand        | 454  | 23.2 | 2.8  | 64.0 | 6.3  | 3.2  | 0.4                    | 64.0 | 0.0     | 0.0            | 0.4  | 60.0              | 68.0             |
| Philippines        | 836  | 18.2 | 10.9 | 42.2 | 16.4 | 12.2 | 0.1                    | 42.2 | 0.0     | 0.1            | 0.0  | 36.1              | 48.7             |
| Romania            | 430  | 23.4 | 8.6  | 56.6 | 7.1  | 2.9  | 1.3                    | 56.6 | 0.0     | 0.0            | 1.3  | 47.7              | 65.5             |
| Russian Federation | 549  | 7.0  | 2.2  | 82.0 | 3.2  | 4.9  | 0.8                    | 82.0 | 0.2     | 0.0            | 0.6  | 77.6              | 87.1             |
| Singapore          | 620  | 16.6 | 0.9  | 79.2 | 0.7  | 2.5  | 0.0                    | 79.2 | 0.0     | 0.0            | 0.0  | 78.9              | 79.5             |
| Slovak Republic    | 442  | 14.0 | 6.9  | 71.0 | 3.0  | 4.6  | 0.5                    | 71.0 | 0.0     | 0.0            | 0.5  | 69.1              | 72.8             |
| Slovenia           | 390  | 24.0 | 3.5  | 65.1 | 3.9  | 3.2  | 0.3                    | 65.1 | 0.3     | 0.0            | 0.0  | 63.2              | 67.1             |
| South Africa       | 1023 | 32.4 | 11.0 | 32.6 | 14.3 | 8.2  | 1.5                    | 32.6 | 0.7     | 0.2            | 0.6  | 32.0              | 33.2             |
| Thailand           | 722  | 14.5 | 4.8  | 65.4 | 5.8  | 9.0  | 0.6                    | 65.4 | 0.0     | 0.0            | 0.6  | 64.1              | 66.9             |
| Tunisia            | 636  | 9.9  | 8.6  | 64.7 | 3.0  | 6.6  | 7.2                    | 64.7 | 5.9     | 0.0            | 1.3  | 61.2              | 68.8             |
| Turkey             | 980  | 25.3 | 8.9  | 45.9 | 7.5  | 11.2 | 1.3                    | 45.9 | 0.2     | 0.0            | 1.1  | 45.7              | 46.0             |
| United States      | 1112 | 24.8 | 2.8  | 64.4 | 4.9  | 2.9  | 0.2                    | 64.4 | 0.0     | 0.0            | 0.2  | 63.3              | 65.5             |
| International Avg. | .    | 17.6 | 5.4  | 64.1 | 5.9  | 5.8  | 1.2                    | 64.1 | 0.3     | 0.1            | 0.8  | 60.0              | 68.0             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Life Science  
 Label: Food web - effect of crop failure ( S022141 - N02 )  
 Item Type = SA Key = X

| COUNTRY            | N    | 10   | 11   | 12  | 19  | 70   | 71   | 72   | 73   | 79   | 99   | V1   | NOT REACH ED | OMIT | 1.GIRL % Right | 2.BOY % Right |
|--------------------|------|------|------|-----|-----|------|------|------|------|------|------|------|--------------|------|----------------|---------------|
| Australia          | 491  | 30.6 | 12.5 | 0.4 | 0.2 | 6.8  | 3.8  | 14.7 | 2.7  | 17.9 | 10.3 | 43.7 | 0.0          | 10.3 | 45.2           | 42.0          |
| Belgium (Flemish)  | 663  | 30.6 | 11.9 | 0.8 | 1.2 | 3.9  | 4.1  | 17.4 | 3.5  | 20.0 | 6.5  | 44.5 | 0.0          | 6.5  | 41.8           | 47.2          |
| Bulgaria           | 404  | 11.5 | 3.9  | 2.1 | 2.1 | 8.1  | 0.8  | 0.5  | 5.2  | 19.6 | 46.2 | 19.7 | 0.9          | 45.3 | 19.3           | 20.1          |
| Canada             | 1094 | 22.0 | 13.5 | 0.6 | 1.8 | 7.2  | 4.4  | 13.0 | 4.5  | 28.2 | 4.8  | 38.0 | 0.0          | 4.8  | 36.3           | 39.9          |
| Chile              | 750  | 6.9  | 2.8  | 1.0 | 0.2 | 10.2 | 17.4 | 6.2  | 6.0  | 20.5 | 28.8 | 10.8 | 0.0          | 28.8 | 10.6           | 11.1          |
| Chinese Taipei     | 724  | 41.4 | 9.4  | 2.3 | 1.8 | 6.7  | 3.8  | 7.9  | 2.4  | 19.0 | 5.3  | 54.9 | 0.0          | 5.3  | 57.0           | 52.4          |
| Cyprus             | 385  | 6.4  | 2.7  | 1.1 | 2.7 | 2.0  | 14.3 | 5.2  | 13.5 | 24.0 | 28.1 | 12.8 | 0.0          | 28.1 | 11.5           | 13.9          |
| Czech Republic     | 425  | 15.1 | 9.2  | 1.3 | 0.3 | 10.3 | 0.7  | 14.5 | 1.5  | 25.4 | 21.7 | 25.9 | 0.0          | 21.7 | 24.6           | 27.1          |
| England            | 363  | 30.8 | 14.0 | 0.9 | 0.2 | 6.7  | 9.3  | 9.7  | 3.8  | 17.6 | 7.0  | 45.8 | 1.9          | 5.1  | 44.7           | 47.0          |
| Finland            | 368  | 12.9 | 9.2  | 0.5 | 3.7 | 9.0  | 4.1  | 21.0 | 1.3  | 31.5 | 6.8  | 26.3 | 0.2          | 6.6  | 29.7           | 23.0          |
| Hong Kong, SAR     | 646  | 30.6 | 4.4  | 0.3 | 0.7 | 9.6  | 5.1  | 8.6  | 1.0  | 25.1 | 14.6 | 36.0 | 0.2          | 14.4 | 35.0           | 36.9          |
| Hungary            | 392  | 16.8 | 8.3  | 1.4 | 1.9 | 4.9  | 2.4  | 16.7 | 5.5  | 20.2 | 21.9 | 28.4 | 0.3          | 21.6 | 27.9           | 28.3          |
| Indonesia          | 725  | 14.1 | 3.6  | 1.3 | 0.2 | 4.5  | 16.7 | 4.2  | 2.7  | 46.0 | 6.8  | 19.1 | 0.0          | 6.8  | 19.0           | 19.2          |
| Iran, Islamic Rep. | 664  | 5.3  | 2.4  | 1.0 | 0.2 | 4.9  | 0.5  | 8.2  | 0.8  | 43.3 | 33.4 | 8.9  | 0.0          | 33.4 | 7.1            | 10.0          |
| Israel             | 524  | 9.3  | 2.8  | 1.2 | 1.5 | 12.5 | 5.1  | 10.3 | 6.0  | 22.1 | 29.1 | 14.8 | 0.7          | 28.4 | 13.9           | 15.7          |
| Italy              | 412  | 12.9 | 6.3  | 0.9 | 2.1 | 12.6 | 2.7  | 7.5  | 4.4  | 25.0 | 25.5 | 22.3 | 0.0          | 25.5 | 22.9           | 21.7          |
| Japan              | 590  | 13.0 | 12.4 | 0.0 | 3.1 | 8.4  | 2.8  | 20.8 | 0.7  | 26.9 | 12.0 | 28.5 | 0.0          | 12.0 | 26.1           | 30.8          |
| Jordan             | 624  | 8.5  | 0.9  | 0.3 | 2.2 | 5.2  | 22.8 | 11.2 | 2.8  | 33.7 | 12.4 | 12.0 | 0.4          | 12.0 | 13.5           | 10.6          |
| Korea, Rep. of     | 763  | 29.9 | 24.0 | 0.3 | 0.0 | 5.6  | 2.5  | 16.3 | 0.4  | 16.0 | 4.9  | 54.1 | 0.1          | 4.7  | 55.6           | 52.7          |
| Latvia (LSS)       | 361  | 15.6 | 2.3  | 0.2 | 2.3 | 1.7  | 9.9  | 7.2  | 1.5  | 30.1 | 29.4 | 20.3 | 0.2          | 29.1 | 20.1           | 20.6          |
| Lithuania          | 293  | 7.6  | 2.7  | 1.0 | 2.9 | 2.6  | 13.9 | 16.2 | 2.8  | 16.8 | 33.5 | 14.2 | 0.0          | 33.5 | 9.6            | 19.2          |
| Macedonia, Rep. of | 503  | 10.6 | 0.7  | 0.9 | 8.6 | 4.9  | 1.8  | 1.7  | 4.8  | 14.0 | 52.0 | 20.8 | 0.6          | 51.3 | 22.7           | 19.0          |
| Malaysia           | 699  | 21.4 | 7.5  | 0.1 | 1.5 | 2.2  | 13.5 | 10.4 | 1.1  | 29.7 | 12.6 | 30.5 | 0.0          | 12.6 | 33.2           | 27.4          |
| Moldova            | 462  | 3.8  | 2.2  | 0.2 | 1.7 | 3.6  | 4.7  | 6.5  | 6.9  | 29.9 | 40.5 | 8.0  | 0.6          | 39.9 | 9.0            | 6.8           |
| Morocco            | 674  | 0.7  | 0.6  | 0.0 | 0.7 | 2.2  | 1.1  | 1.3  | 11.0 | 41.6 | 40.8 | 2.0  | 0.3          | 40.6 | 3.5            | 1.1           |
| Netherlands        | 362  | 25.8 | 9.2  | 0.2 | 0.6 | 0.3  | 7.9  | 18.1 | 0.4  | 33.8 | 3.5  | 35.9 | 0.1          | 3.4  | 37.3           | 34.2          |
| New Zealand        | 453  | 26.4 | 9.2  | 1.5 | 0.4 | 4.9  | 5.9  | 9.8  | 1.5  | 27.6 | 12.8 | 37.6 | 0.0          | 12.8 | 46.4           | 28.8          |
| Philippines        | 836  | 10.3 | 2.4  | 0.7 | 3.5 | 0.3  | 12.6 | 2.0  | 1.7  | 39.7 | 26.9 | 16.8 | 0.1          | 26.8 | 19.7           | 13.8          |
| Romania            | 430  | 11.1 | 5.5  | 0.6 | 1.4 | 4.3  | 7.0  | 2.5  | 1.6  | 29.4 | 36.6 | 18.6 | 0.0          | 36.6 | 18.2           | 19.0          |
| Russian Federation | 549  | 18.1 | 2.8  | 0.3 | 8.7 | 3.0  | 3.5  | 11.7 | 2.7  | 20.4 | 28.8 | 30.0 | 0.0          | 28.8 | 29.5           | 30.4          |
| Singapore          | 620  | 51.3 | 18.1 | 0.1 | 2.4 | 4.9  | 1.7  | 4.8  | 0.6  | 13.0 | 3.1  | 71.9 | 0.0          | 3.1  | 70.6           | 73.1          |
| Slovak Republic    | 442  | 15.7 | 5.1  | 0.1 | 0.4 | 9.5  | 2.8  | 15.8 | 8.0  | 19.3 | 23.4 | 21.2 | 0.0          | 23.4 | 23.7           | 18.9          |
| Slovenia           | 390  | 15.1 | 6.8  | 0.8 | 0.5 | 3.4  | 4.0  | 13.4 | 6.7  | 27.4 | 22.0 | 23.1 | 0.0          | 22.0 | 24.6           | 21.6          |
| South Africa       | 1023 | 1.3  | 1.1  | 0.4 | 0.0 | 1.8  | 1.7  | 1.2  | 6.2  | 53.7 | 32.6 | 2.7  | 0.2          | 32.5 | 3.5            | 1.9           |
| Thailand           | 722  | 12.3 | 1.1  | 0.0 | 0.5 | 3.5  | 23.4 | 5.6  | 3.5  | 39.2 | 10.8 | 14.0 | 0.3          | 10.6 | 12.6           | 15.5          |
| Tunisia            | 637  | 6.2  | 1.3  | 0.5 | 5.3 | 4.9  | 8.7  | 4.9  | 18.6 | 29.7 | 19.9 | 13.2 | 0.0          | 19.9 | 12.1           | 14.6          |
| Turkey             | 980  | 11.1 | 1.9  | 3.7 | 6.4 | 3.6  | 14.6 | 4.6  | 4.1  | 17.7 | 32.3 | 23.1 | 0.0          | 32.3 | 22.0           | 23.8          |
| United States      | 1112 | 19.9 | 13.8 | 0.7 | 0.7 | 12.6 | 6.0  | 13.4 | 2.4  | 23.0 | 7.4  | 35.2 | 0.1          | 7.4  | 38.4           | 31.9          |
| International Avg. | .    | 16.7 | 6.5  | 0.8 | 2.0 | 5.6  | 7.1  | 9.6  | 4.1  | 26.8 | 20.9 | 25.9 | 0.2          | 20.7 | 26.3           | 25.6          |

V1 = % Scoring 1 or better V2 = % Scoring 2 or better V3 = % Scoring 3 or better  
 Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.  
 Because of missing gender information, some totals may appear inconsistent

Science: Life Science  
 Label: Bacteria to convert milk to yogurt ( S022123 - N03 )  
 Item Type = MC Key = A

| COUNTRY            | N    | A    | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 491  | 43.5 | 47.9 | 2.3  | 4.7  | 1.6                    | 43.5 | 0.2     | 0.0            | 1.4  | 48.0              | 38.2             |
| Belgium (Flemish)  | 663  | 23.8 | 65.2 | 0.2  | 9.3  | 1.4                    | 23.8 | 0.6     | 0.0            | 0.9  | 18.4              | 29.4             |
| Bulgaria           | 404  | 62.3 | 30.1 | 1.9  | 2.0  | 3.7                    | 62.3 | 0.9     | 0.9            | 1.9  | 64.7              | 59.9             |
| Canada             | 1094 | 52.1 | 34.7 | 3.0  | 9.1  | 1.1                    | 52.1 | 1.0     | 0.0            | 0.1  | 51.2              | 53.3             |
| Chile              | 750  | 26.4 | 56.3 | 1.7  | 12.4 | 3.1                    | 26.4 | 0.0     | 0.0            | 3.1  | 28.1              | 24.7             |
| Chinese Taipei     | 724  | 85.8 | 9.9  | 2.0  | 2.3  | 0.1                    | 85.8 | 0.0     | 0.0            | 0.1  | 83.7              | 88.1             |
| Cyprus             | 384  | 65.0 | 25.1 | 3.7  | 5.1  | 1.1                    | 65.0 | 0.2     | 0.0            | 0.9  | 68.2              | 62.3             |
| Czech Republic     | 425  | 70.8 | 13.0 | 6.2  | 7.4  | 2.5                    | 70.8 | 0.0     | 0.0            | 2.5  | 72.3              | 69.5             |
| England            | 363  | 43.9 | 39.3 | 3.6  | 10.6 | 2.5                    | 43.9 | 0.3     | 1.9            | 0.4  | 38.0              | 49.5             |
| Finland            | 368  | 63.9 | 18.4 | 1.5  | 14.6 | 1.6                    | 63.9 | 0.0     | 0.2            | 1.4  | 63.8              | 64.0             |
| Hong Kong, SAR     | 646  | 73.3 | 5.8  | 8.3  | 12.1 | 0.5                    | 73.3 | 0.0     | 0.2            | 0.3  | 75.3              | 71.6             |
| Hungary            | 392  | 47.4 | 37.4 | 1.9  | 9.9  | 3.4                    | 47.4 | 0.0     | 0.3            | 3.1  | 45.9              | 48.6             |
| Indonesia          | 725  | 37.4 | 27.6 | 10.6 | 23.2 | 1.1                    | 37.4 | 0.1     | 0.0            | 1.1  | 38.3              | 36.6             |
| Iran, Islamic Rep. | 664  | 67.3 | 16.5 | 11.4 | 2.8  | 2.0                    | 67.3 | 0.0     | 0.0            | 2.0  | 62.5              | 70.5             |
| Israel             | 524  | 39.5 | 36.4 | 6.5  | 14.2 | 3.4                    | 39.5 | 0.4     | 0.7            | 2.2  | 40.1              | 38.9             |
| Italy              | 412  | 61.9 | 32.6 | 0.9  | 3.2  | 1.4                    | 61.9 | 0.0     | 0.0            | 1.4  | 63.9              | 60.0             |
| Japan              | 590  | 85.8 | 5.3  | 3.4  | 5.3  | 0.2                    | 85.8 | 0.0     | 0.0            | 0.2  | 84.5              | 87.0             |
| Jordan             | 624  | 70.5 | 16.4 | 7.2  | 4.3  | 1.6                    | 70.5 | 0.2     | 0.4            | 1.1  | 74.9              | 66.5             |
| Korea, Rep. of     | 763  | 75.2 | 14.1 | 8.2  | 2.3  | 0.1                    | 75.2 | 0.0     | 0.1            | 0.0  | 74.3              | 76.1             |
| Latvia (LSS)       | 361  | 58.7 | 19.5 | 3.3  | 16.4 | 2.1                    | 58.7 | 0.0     | 0.2            | 1.9  | 61.4              | 56.1             |
| Lithuania          | 293  | 57.8 | 17.7 | 2.3  | 19.0 | 3.2                    | 57.8 | 0.0     | 0.0            | 3.2  | 61.3              | 53.9             |
| Macedonia, Rep. of | 503  | 53.9 | 31.0 | 4.5  | 5.5  | 5.1                    | 53.9 | 0.2     | 0.6            | 4.3  | 51.5              | 56.2             |
| Malaysia           | 699  | 34.4 | 38.9 | 5.7  | 20.0 | 1.0                    | 34.4 | 0.0     | 0.0            | 1.0  | 38.2              | 30.0             |
| Moldova            | 462  | 59.5 | 13.9 | 6.8  | 16.3 | 3.4                    | 59.5 | 0.4     | 0.6            | 2.4  | 59.1              | 60.0             |
| Morocco            | 674  | 41.9 | 26.5 | 17.8 | 11.7 | 2.2                    | 41.9 | 0.0     | 0.3            | 1.9  | 42.2              | 41.8             |
| Netherlands        | 362  | 57.9 | 33.7 | 1.2  | 6.4  | 0.8                    | 57.9 | 0.3     | 0.1            | 0.4  | 58.2              | 57.5             |
| New Zealand        | 453  | 43.3 | 33.6 | 7.6  | 14.2 | 1.2                    | 43.3 | 0.3     | 0.0            | 0.9  | 46.5              | 40.3             |
| Philippines        | 836  | 26.7 | 40.7 | 12.0 | 20.1 | 0.5                    | 26.7 | 0.0     | 0.1            | 0.4  | 27.9              | 25.3             |
| Romania            | 430  | 55.9 | 27.0 | 3.1  | 11.2 | 2.7                    | 55.9 | 0.2     | 0.0            | 2.5  | 56.4              | 55.5             |
| Russian Federation | 549  | 72.9 | 19.6 | 3.1  | 2.8  | 1.6                    | 72.9 | 0.7     | 0.0            | 0.9  | 72.8              | 73.1             |
| Singapore          | 620  | 36.0 | 56.0 | 3.7  | 3.8  | 0.5                    | 36.0 | 0.0     | 0.0            | 0.5  | 30.1              | 41.5             |
| Slovak Republic    | 441  | 61.0 | 19.7 | 2.8  | 13.9 | 2.6                    | 61.0 | 0.0     | 0.0            | 2.6  | 58.9              | 63.1             |
| Slovenia           | 390  | 53.9 | 41.6 | 0.9  | 1.4  | 2.3                    | 53.9 | 0.6     | 0.0            | 1.7  | 52.9              | 55.0             |
| South Africa       | 1023 | 35.3 | 32.2 | 16.2 | 15.5 | 0.7                    | 35.3 | 0.3     | 0.3            | 0.1  | 38.9              | 31.0             |
| Thailand           | 722  | 57.1 | 32.1 | 5.8  | 4.5  | 0.5                    | 57.1 | 0.0     | 0.3            | 0.2  | 58.8              | 55.2             |
| Tunisia            | 637  | 51.7 | 27.0 | 13.0 | 3.9  | 4.3                    | 51.7 | 2.3     | 0.0            | 2.1  | 49.8              | 53.9             |
| Turkey             | 980  | 64.4 | 14.7 | 5.2  | 13.8 | 1.9                    | 64.4 | 0.1     | 0.0            | 1.8  | 67.1              | 62.5             |
| United States      | 1112 | 43.1 | 38.9 | 4.3  | 13.0 | 0.7                    | 43.1 | 0.1     | 0.1            | 0.5  | 43.5              | 42.8             |
| International Avg. | .    | 54.2 | 28.9 | 5.4  | 9.7  | 1.8                    | 54.2 | 0.2     | 0.2            | 1.4  | 54.5              | 53.9             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent



Science: Scientific Inquiry and the Nature of Science  
 Label: Evaporation of vinegar and oil ( S022238 - N04 )  
 Item Type = MC Key = C

| COUNTRY            | N    | A    | B    | C    | D    | E    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 491  | 5.0  | 1.6  | 70.2 | 6.0  | 14.9 | 2.2                    | 70.2 | 1.7     | 0.0            | 0.5  | 66.9              | 74.3             |
| Belgium (Flemish)  | 663  | 17.8 | 2.8  | 49.0 | 23.1 | 6.1  | 1.3                    | 49.0 | 0.9     | 0.0            | 0.4  | 50.3              | 47.6             |
| Bulgaria           | 404  | 22.7 | 2.9  | 45.4 | 13.0 | 8.1  | 7.8                    | 45.4 | 4.7     | 0.9            | 2.2  | 41.0              | 49.9             |
| Canada             | 1094 | 11.7 | 2.0  | 63.6 | 10.5 | 11.6 | 0.6                    | 63.6 | 0.2     | 0.0            | 0.4  | 62.4              | 65.0             |
| Chile              | 750  | 9.9  | 4.1  | 37.5 | 15.5 | 31.9 | 1.1                    | 37.5 | 0.0     | 0.0            | 1.1  | 36.2              | 38.9             |
| Chinese Taipei     | 724  | 21.2 | 5.6  | 43.9 | 15.1 | 14.1 | 0.1                    | 43.9 | 0.0     | 0.0            | 0.1  | 41.1              | 47.1             |
| Cyprus             | 387  | 24.2 | 3.7  | 35.5 | 11.1 | 24.1 | 1.4                    | 35.5 | 0.1     | 0.0            | 1.3  | 32.5              | 38.1             |
| Czech Republic     | 425  | 17.7 | 2.6  | 48.7 | 17.0 | 13.6 | 0.4                    | 48.7 | 0.1     | 0.0            | 0.3  | 46.1              | 51.1             |
| England            | 363  | 3.1  | 0.8  | 77.8 | 6.2  | 9.4  | 2.7                    | 77.8 | 0.9     | 1.9            | 0.0  | 79.2              | 76.5             |
| Finland            | 368  | 12.4 | 2.0  | 45.3 | 17.2 | 18.5 | 4.6                    | 45.3 | 0.0     | 0.2            | 4.4  | 44.7              | 45.8             |
| Hong Kong, SAR     | 646  | 6.3  | 3.1  | 48.9 | 16.5 | 24.6 | 0.7                    | 48.9 | 0.0     | 0.2            | 0.5  | 47.8              | 49.9             |
| Hungary            | 392  | 11.3 | 1.2  | 63.6 | 9.3  | 11.4 | 3.2                    | 63.6 | 2.7     | 0.3            | 0.3  | 64.2              | 62.9             |
| Indonesia          | 725  | 18.5 | 4.5  | 42.1 | 8.4  | 26.1 | 0.5                    | 42.1 | 0.0     | 0.0            | 0.5  | 43.7              | 40.6             |
| Iran, Islamic Rep. | 664  | 12.6 | 4.5  | 41.7 | 18.7 | 20.4 | 2.0                    | 41.7 | 0.0     | 0.0            | 2.0  | 37.6              | 44.5             |
| Israel             | 524  | 2.9  | 3.4  | 66.8 | 20.1 | 5.1  | 1.7                    | 66.8 | 0.2     | 0.7            | 0.8  | 65.7              | 67.8             |
| Italy              | 412  | 16.1 | 1.6  | 49.3 | 12.8 | 18.9 | 1.2                    | 49.3 | 0.0     | 0.0            | 1.2  | 48.9              | 49.8             |
| Japan              | 590  | 14.5 | 5.2  | 49.9 | 19.6 | 9.3  | 1.4                    | 49.9 | 1.1     | 0.0            | 0.4  | 48.9              | 50.9             |
| Jordan             | 624  | 5.8  | 4.5  | 49.1 | 11.9 | 26.4 | 2.3                    | 49.1 | 0.2     | 0.4            | 1.6  | 49.6              | 48.7             |
| Korea, Rep. of     | 763  | 6.3  | 2.1  | 59.3 | 11.5 | 20.6 | 0.1                    | 59.3 | 0.0     | 0.1            | 0.0  | 55.7              | 62.7             |
| Latvia (LSS)       | 361  | 31.2 | 3.4  | 40.6 | 10.9 | 12.1 | 1.9                    | 40.6 | 1.4     | 0.2            | 0.2  | 41.9              | 39.4             |
| Lithuania          | 293  | 24.5 | 1.8  | 39.0 | 17.0 | 16.1 | 1.7                    | 39.0 | 0.0     | 0.0            | 1.7  | 42.0              | 35.8             |
| Macedonia, Rep. of | 503  | 19.9 | 3.5  | 44.2 | 13.1 | 14.6 | 4.7                    | 44.2 | 1.0     | 0.6            | 3.1  | 42.4              | 46.0             |
| Malaysia           | 699  | 9.6  | 2.1  | 46.3 | 9.4  | 32.2 | 0.3                    | 46.3 | 0.0     | 0.0            | 0.3  | 46.5              | 46.0             |
| Moldova            | 462  | 29.9 | 2.0  | 19.5 | 22.9 | 21.5 | 4.2                    | 19.5 | 1.7     | 0.6            | 1.9  | 22.4              | 15.9             |
| Morocco            | 671  | 9.6  | 8.2  | 37.8 | 17.7 | 25.0 | 1.7                    | 37.8 | 0.0     | 0.3            | 1.4  | 35.8              | 38.8             |
| Netherlands        | 362  | 4.1  | 2.1  | 76.3 | 11.9 | 5.5  | 0.1                    | 76.3 | 0.0     | 0.1            | 0.0  | 72.7              | 80.4             |
| New Zealand        | 454  | 7.0  | 4.2  | 66.8 | 8.2  | 13.4 | 0.4                    | 66.8 | 0.3     | 0.0            | 0.2  | 65.8              | 67.7             |
| Philippines        | 836  | 18.2 | 10.6 | 37.6 | 14.9 | 18.3 | 0.4                    | 37.6 | 0.0     | 0.1            | 0.3  | 40.0              | 35.0             |
| Romania            | 429  | 24.7 | 1.8  | 29.6 | 14.2 | 27.3 | 2.4                    | 29.6 | 1.4     | 0.0            | 1.0  | 26.4              | 32.7             |
| Russian Federation | 549  | 36.8 | 1.2  | 28.6 | 14.4 | 14.9 | 4.1                    | 28.6 | 2.8     | 0.0            | 1.2  | 29.2              | 27.8             |
| Singapore          | 620  | 6.4  | 0.7  | 77.5 | 6.2  | 9.0  | 0.1                    | 77.5 | 0.0     | 0.0            | 0.1  | 80.6              | 74.6             |
| Slovak Republic    | 442  | 24.6 | 1.5  | 40.3 | 23.6 | 9.7  | 0.3                    | 40.3 | 0.3     | 0.0            | 0.0  | 41.0              | 39.6             |
| Slovenia           | 390  | 22.0 | 1.9  | 38.8 | 16.2 | 18.3 | 2.8                    | 38.8 | 1.3     | 0.0            | 1.5  | 37.8              | 39.9             |
| South Africa       | 1023 | 22.4 | 15.2 | 29.4 | 15.0 | 16.5 | 1.5                    | 29.4 | 0.6     | 0.3            | 0.6  | 27.8              | 31.2             |
| Thailand           | 722  | 8.2  | 4.2  | 28.1 | 19.1 | 39.6 | 0.8                    | 28.1 | 0.0     | 0.3            | 0.5  | 27.7              | 28.6             |
| Tunisia            | 638  | 1.8  | 0.3  | 26.8 | 7.8  | 39.4 | 23.8                   | 26.8 | 23.5    | 0.0            | 0.3  | 25.8              | 28.1             |
| Turkey             | 980  | 8.6  | 6.6  | 40.8 | 42.6 | 0.0  | 1.4                    | 40.8 | 0.0     | 0.0            | 1.4  | 41.2              | 40.5             |
| United States      | 1112 | 4.4  | 2.4  | 76.1 | 7.3  | 9.3  | 0.5                    | 76.1 | 0.2     | 0.1            | 0.2  | 77.1              | 75.1             |
| International Avg. | .    | 14.6 | 3.5  | 47.7 | 14.6 | 17.3 | 2.3                    | 47.7 | 1.2     | 0.2            | 0.9  | 47.0              | 48.3             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Life Science  
 Label: Bone meal for plant growth ( S022145 - N05 )  
 Item Type = MC Key = B

| COUNTRY            | N    | A    | B    | C    | D    | E    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 491  | 6.8  | 56.7 | 25.0 | 3.1  | 7.0  | 1.4                    | 56.7 | 0.8     | 0.0            | 0.6  | 61.6              | 50.8             |
| Belgium (Flemish)  | 663  | 14.0 | 51.0 | 23.3 | 3.8  | 7.0  | 0.9                    | 51.0 | 0.4     | 0.0            | 0.6  | 50.3              | 51.8             |
| Bulgaria           | 404  | 10.2 | 56.8 | 9.1  | 8.3  | 6.6  | 8.9                    | 56.8 | 5.8     | 1.2            | 1.9  | 54.1              | 59.6             |
| Canada             | 1094 | 3.0  | 64.6 | 25.1 | 2.3  | 4.4  | 0.5                    | 64.6 | 0.4     | 0.0            | 0.1  | 63.6              | 65.9             |
| Chile              | 750  | 9.6  | 40.6 | 29.9 | 9.4  | 8.7  | 1.9                    | 40.6 | 0.0     | 0.0            | 1.9  | 38.8              | 42.5             |
| Chinese Taipei     | 724  | 9.5  | 71.6 | 14.8 | 1.9  | 2.0  | 0.2                    | 71.6 | 0.0     | 0.0            | 0.2  | 71.0              | 72.3             |
| Cyprus             | 387  | 22.0 | 41.8 | 27.1 | 3.6  | 4.1  | 1.3                    | 41.8 | 0.3     | 0.0            | 1.1  | 39.7              | 43.6             |
| Czech Republic     | 425  | 5.5  | 69.4 | 17.2 | 4.1  | 2.5  | 1.2                    | 69.4 | 0.7     | 0.0            | 0.5  | 67.9              | 70.8             |
| England            | 363  | 9.0  | 59.1 | 16.8 | 5.4  | 7.3  | 2.4                    | 59.1 | 0.5     | 1.9            | 0.0  | 55.3              | 62.7             |
| Finland            | 368  | 8.0  | 72.9 | 7.8  | 7.7  | 1.5  | 2.1                    | 72.9 | 0.0     | 0.2            | 1.9  | 68.3              | 77.3             |
| Hong Kong, SAR     | 646  | 7.9  | 58.0 | 23.2 | 6.6  | 3.6  | 0.7                    | 58.0 | 0.2     | 0.4            | 0.1  | 55.4              | 60.3             |
| Hungary            | 392  | 3.6  | 78.1 | 10.8 | 2.3  | 3.9  | 1.3                    | 78.1 | 0.5     | 0.3            | 0.5  | 77.5              | 78.4             |
| Indonesia          | 725  | 14.7 | 33.8 | 10.5 | 20.0 | 21.0 | 0.1                    | 33.8 | 0.0     | 0.0            | 0.1  | 29.3              | 37.9             |
| Iran, Islamic Rep. | 664  | 9.6  | 52.3 | 25.0 | 7.9  | 4.8  | 0.4                    | 52.3 | 0.0     | 0.0            | 0.4  | 50.6              | 53.4             |
| Israel             | 524  | 16.2 | 30.0 | 29.8 | 8.8  | 12.5 | 2.7                    | 30.0 | 0.2     | 0.7            | 1.7  | 27.3              | 32.3             |
| Italy              | 412  | 8.1  | 60.0 | 18.2 | 8.5  | 4.5  | 0.6                    | 60.0 | 0.0     | 0.0            | 0.6  | 56.5              | 63.2             |
| Japan              | 590  | 12.8 | 67.0 | 10.1 | 2.9  | 6.5  | 0.7                    | 67.0 | 0.4     | 0.2            | 0.2  | 63.9              | 70.0             |
| Jordan             | 624  | 13.2 | 38.6 | 17.6 | 10.7 | 17.8 | 2.2                    | 38.6 | 0.3     | 0.4            | 1.5  | 37.9              | 39.2             |
| Korea, Rep. of     | 763  | 8.2  | 57.7 | 26.5 | 3.9  | 3.6  | 0.1                    | 57.7 | 0.0     | 0.1            | 0.0  | 54.6              | 60.8             |
| Latvia (LSS)       | 361  | 4.5  | 81.8 | 8.9  | 3.2  | 0.2  | 1.5                    | 81.8 | 1.0     | 0.2            | 0.2  | 82.3              | 81.2             |
| Lithuania          | 293  | 3.4  | 78.5 | 11.2 | 3.3  | 2.7  | 0.8                    | 78.5 | 0.0     | 0.0            | 0.8  | 76.1              | 81.2             |
| Macedonia, Rep. of | 503  | 9.2  | 43.6 | 19.5 | 7.3  | 16.0 | 4.3                    | 43.6 | 1.0     | 0.6            | 2.7  | 43.0              | 44.1             |
| Malaysia           | 699  | 4.6  | 75.1 | 5.2  | 7.6  | 6.9  | 0.6                    | 75.1 | 0.0     | 0.0            | 0.6  | 75.1              | 75.1             |
| Moldova            | 462  | 6.8  | 59.2 | 20.6 | 5.8  | 4.4  | 3.2                    | 59.2 | 0.6     | 0.6            | 2.1  | 55.3              | 64.0             |
| Morocco            | 674  | 12.0 | 19.1 | 20.9 | 19.1 | 27.9 | 1.0                    | 19.1 | 0.0     | 0.3            | 0.7  | 15.2              | 21.6             |
| Netherlands        | 362  | 16.7 | 42.7 | 25.1 | 10.1 | 4.8  | 0.6                    | 42.7 | 0.2     | 0.1            | 0.3  | 41.8              | 43.8             |
| New Zealand        | 454  | 6.2  | 57.7 | 14.8 | 6.9  | 13.5 | 1.0                    | 57.7 | 0.5     | 0.0            | 0.5  | 56.2              | 59.2             |
| Philippines        | 836  | 12.1 | 30.8 | 8.9  | 24.0 | 23.9 | 0.3                    | 30.8 | 0.1     | 0.3            | 0.0  | 29.7              | 32.1             |
| Romania            | 430  | 7.9  | 48.9 | 24.7 | 4.4  | 11.0 | 3.2                    | 48.9 | 1.7     | 0.0            | 1.5  | 44.9              | 52.8             |
| Russian Federation | 549  | 5.3  | 74.5 | 12.8 | 3.4  | 1.6  | 2.4                    | 74.5 | 1.8     | 0.0            | 0.6  | 74.6              | 74.3             |
| Singapore          | 620  | 3.8  | 80.0 | 5.5  | 5.9  | 4.4  | 0.5                    | 80.0 | 0.1     | 0.0            | 0.4  | 79.4              | 80.4             |
| Slovak Republic    | 442  | 8.3  | 45.3 | 32.8 | 8.1  | 4.3  | 1.2                    | 45.3 | 0.3     | 0.0            | 0.9  | 45.1              | 45.6             |
| Slovenia           | 390  | 7.5  | 64.7 | 15.0 | 6.5  | 4.7  | 1.8                    | 64.7 | 0.7     | 0.0            | 1.1  | 63.4              | 65.9             |
| South Africa       | 1023 | 12.5 | 26.6 | 12.5 | 8.4  | 37.5 | 2.6                    | 26.6 | 1.5     | 0.3            | 0.9  | 25.7              | 27.7             |
| Thailand           | 722  | 4.1  | 81.2 | 5.4  | 3.6  | 5.4  | 0.3                    | 81.2 | 0.0     | 0.3            | 0.0  | 82.9              | 79.2             |
| Tunisia            | 638  | 9.3  | 57.3 | 13.8 | 1.0  | 5.1  | 13.5                   | 57.3 | 12.5    | 0.0            | 1.0  | 56.2              | 58.5             |
| Turkey             | 980  | 11.9 | 43.9 | 23.7 | 5.8  | 13.9 | 0.9                    | 43.9 | 0.1     | 0.0            | 0.8  | 43.5              | 44.1             |
| United States      | 1112 | 5.1  | 59.6 | 24.5 | 5.3  | 4.9  | 0.5                    | 59.6 | 0.2     | 0.1            | 0.2  | 56.6              | 62.7             |
| International Avg. | .    | 9.0  | 56.1 | 17.7 | 6.9  | 8.5  | 1.8                    | 56.1 | 0.9     | 0.2            | 0.8  | 54.5              | 57.5             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Life Science  
 Label: Definition of tissue ( S022293 - N06 )  
 Item Type = MC Key = A

| COUNTRY            | N    | A    | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 491  | 37.3 | 8.9  | 5.8  | 47.1 | 0.9                    | 37.3 | 0.2     | 0.0            | 0.7  | 35.3              | 39.8             |
| Belgium (Flemish)  | 663  | 47.2 | 19.6 | 4.3  | 27.5 | 1.4                    | 47.2 | 0.3     | 0.0            | 1.1  | 39.8              | 54.6             |
| Bulgaria           | 404  | 66.7 | 8.2  | 4.9  | 16.1 | 4.1                    | 66.7 | 1.0     | 1.2            | 1.9  | 65.1              | 68.4             |
| Canada             | 1094 | 41.8 | 10.2 | 9.1  | 38.4 | 0.4                    | 41.8 | 0.0     | 0.0            | 0.4  | 37.2              | 47.3             |
| Chile              | 750  | 23.3 | 16.2 | 10.7 | 46.2 | 3.6                    | 23.3 | 0.0     | 0.0            | 3.6  | 22.6              | 23.9             |
| Chinese Taipei     | 724  | 59.8 | 30.7 | 4.0  | 5.2  | 0.3                    | 59.8 | 0.0     | 0.0            | 0.3  | 56.9              | 63.1             |
| Cyprus             | 386  | 55.9 | 11.4 | 11.7 | 19.6 | 1.4                    | 55.9 | 0.0     | 0.0            | 1.4  | 58.5              | 53.8             |
| Czech Republic     | 425  | 52.5 | 14.6 | 5.2  | 25.9 | 1.8                    | 52.5 | 0.0     | 0.0            | 1.8  | 46.6              | 57.8             |
| England            | 363  | 40.8 | 8.2  | 3.3  | 45.2 | 2.4                    | 40.8 | 0.0     | 1.9            | 0.5  | 38.3              | 43.3             |
| Finland            | 368  | 29.9 | 22.9 | 9.5  | 36.9 | 0.8                    | 29.9 | 0.0     | 0.2            | 0.6  | 27.9              | 31.8             |
| Hong Kong, SAR     | 646  | 37.1 | 38.5 | 8.1  | 15.5 | 0.8                    | 37.1 | 0.2     | 0.4            | 0.3  | 34.4              | 39.6             |
| Hungary            | 392  | 43.7 | 7.7  | 17.0 | 27.6 | 4.0                    | 43.7 | 0.0     | 0.3            | 3.8  | 42.2              | 44.6             |
| Indonesia          | 725  | 21.8 | 42.8 | 12.2 | 22.3 | 0.9                    | 21.8 | 0.0     | 0.0            | 0.9  | 24.8              | 19.1             |
| Iran, Islamic Rep. | 663  | 30.0 | 16.9 | 12.1 | 38.7 | 2.2                    | 30.0 | 0.0     | 0.0            | 2.2  | 28.1              | 31.3             |
| Israel             | 524  | 41.2 | 15.0 | 13.6 | 26.7 | 3.5                    | 41.2 | 0.0     | 0.7            | 2.8  | 40.0              | 42.2             |
| Italy              | 412  | 37.6 | 17.9 | 6.9  | 34.9 | 2.8                    | 37.6 | 0.0     | 0.0            | 2.8  | 38.5              | 36.7             |
| Japan              | 590  | 36.9 | 37.7 | 14.3 | 10.6 | 0.4                    | 36.9 | 0.0     | 0.2            | 0.2  | 34.2              | 39.6             |
| Jordan             | 623  | 49.3 | 20.7 | 12.9 | 14.5 | 2.6                    | 49.3 | 0.0     | 0.4            | 2.2  | 50.7              | 48.0             |
| Korea, Rep. of     | 763  | 54.1 | 16.8 | 16.7 | 12.2 | 0.3                    | 54.1 | 0.0     | 0.1            | 0.1  | 58.7              | 49.7             |
| Latvia (LSS)       | 361  | 36.5 | 16.1 | 4.5  | 40.7 | 2.2                    | 36.5 | 0.0     | 0.2            | 2.0  | 30.0              | 42.8             |
| Lithuania          | 293  | 56.1 | 17.1 | 7.2  | 15.7 | 3.9                    | 56.1 | 0.0     | 0.0            | 3.9  | 58.9              | 53.1             |
| Macedonia, Rep. of | 503  | 50.1 | 9.7  | 15.2 | 19.4 | 5.6                    | 50.1 | 0.2     | 0.6            | 4.8  | 50.2              | 50.1             |
| Malaysia           | 699  | 24.6 | 30.6 | 5.8  | 37.9 | 1.0                    | 24.6 | 0.0     | 0.0            | 1.0  | 25.1              | 24.1             |
| Moldova            | 462  | 45.5 | 13.5 | 12.0 | 24.0 | 5.0                    | 45.5 | 0.3     | 0.8            | 4.0  | 47.8              | 42.6             |
| Morocco            | 674  | 27.4 | 20.6 | 25.3 | 22.9 | 3.9                    | 27.4 | 0.1     | 0.3            | 3.5  | 25.4              | 28.7             |
| Netherlands        | 361  | 45.6 | 18.7 | 11.7 | 23.8 | 0.3                    | 45.6 | 0.0     | 0.1            | 0.2  | 43.3              | 48.2             |
| New Zealand        | 454  | 32.7 | 14.5 | 9.2  | 41.9 | 1.7                    | 32.7 | 0.4     | 0.0            | 1.3  | 32.7              | 32.8             |
| Philippines        | 836  | 28.5 | 33.4 | 13.1 | 24.3 | 0.7                    | 28.5 | 0.0     | 0.3            | 0.4  | 31.5              | 25.3             |
| Romania            | 430  | 46.6 | 17.5 | 12.7 | 21.7 | 1.5                    | 46.6 | 0.0     | 0.0            | 1.5  | 45.5              | 47.6             |
| Russian Federation | 549  | 60.7 | 8.3  | 7.5  | 18.3 | 5.3                    | 60.7 | 0.4     | 0.0            | 4.9  | 63.3              | 57.6             |
| Singapore          | 620  | 40.3 | 19.8 | 8.7  | 30.5 | 0.8                    | 40.3 | 0.0     | 0.0            | 0.8  | 35.7              | 44.5             |
| Slovak Republic    | 441  | 52.2 | 6.7  | 3.2  | 36.6 | 1.2                    | 52.2 | 0.0     | 0.0            | 1.2  | 57.5              | 47.0             |
| Slovenia           | 390  | 56.8 | 12.1 | 7.4  | 21.7 | 2.0                    | 56.8 | 0.0     | 0.0            | 2.0  | 58.0              | 55.5             |
| South Africa       | 1023 | 17.2 | 23.8 | 27.7 | 29.8 | 1.4                    | 17.2 | 0.4     | 0.3            | 0.7  | 16.5              | 18.2             |
| Thailand           | 722  | 24.0 | 21.0 | 30.6 | 24.0 | 0.3                    | 24.0 | 0.0     | 0.3            | 0.0  | 21.5              | 27.0             |
| Tunisia            | 638  | 20.6 | 32.8 | 20.8 | 21.3 | 4.5                    | 20.6 | 2.8     | 0.0            | 1.7  | 18.0              | 23.6             |
| Turkey             | 980  | 26.2 | 14.1 | 16.4 | 41.2 | 2.1                    | 26.2 | 0.0     | 0.0            | 2.1  | 28.2              | 24.9             |
| United States      | 1112 | 46.1 | 11.7 | 7.3  | 34.4 | 0.5                    | 46.1 | 0.0     | 0.1            | 0.4  | 44.4              | 47.8             |
| International Avg. | .    | 40.6 | 18.6 | 11.3 | 27.4 | 2.1                    | 40.6 | 0.2     | 0.2            | 1.7  | 39.8              | 41.5             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Chemistry  
 Label: Example of chemical reaction ( S022178 - N07 )  
 Item Type = MC Key = C

| COUNTRY            | N    | A    | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 491  | 10.5 | 24.4 | 52.6 | 11.7 | 0.9                    | 52.6 | 0.4     | 0.0            | 0.4  | 51.3              | 54.1             |
| Belgium (Flemish)  | 663  | 11.5 | 26.7 | 48.7 | 12.8 | 0.4                    | 48.7 | 0.2     | 0.0            | 0.1  | 47.3              | 50.1             |
| Bulgaria           | 404  | 6.8  | 31.5 | 54.4 | 3.4  | 3.9                    | 54.4 | 2.5     | 1.2            | 0.2  | 46.1              | 62.8             |
| Canada             | 1094 | 10.1 | 20.9 | 54.5 | 14.3 | 0.1                    | 54.5 | 0.0     | 0.0            | 0.1  | 55.5              | 53.4             |
| Chile              | 750  | 23.0 | 18.0 | 37.0 | 19.2 | 2.8                    | 37.0 | 0.0     | 0.0            | 2.8  | 35.7              | 38.3             |
| Chinese Taipei     | 724  | 4.3  | 5.2  | 87.0 | 3.3  | 0.3                    | 87.0 | 0.1     | 0.0            | 0.1  | 86.0              | 88.0             |
| Cyprus             | 386  | 9.8  | 34.5 | 40.2 | 14.5 | 1.0                    | 40.2 | 0.5     | 0.0            | 0.5  | 40.7              | 39.8             |
| Czech Republic     | 425  | 8.8  | 39.0 | 46.9 | 4.6  | 0.6                    | 46.9 | 0.3     | 0.0            | 0.3  | 42.9              | 50.5             |
| England            | 363  | 8.7  | 16.8 | 65.8 | 6.6  | 2.2                    | 65.8 | 0.3     | 1.9            | 0.0  | 61.9              | 69.4             |
| Finland            | 368  | 9.9  | 22.1 | 55.9 | 4.3  | 7.7                    | 55.9 | 0.0     | 0.2            | 7.5  | 51.7              | 60.0             |
| Hong Kong, SAR     | 646  | 9.6  | 12.4 | 71.7 | 5.8  | 0.5                    | 71.7 | 0.0     | 0.4            | 0.1  | 68.9              | 74.3             |
| Hungary            | 392  | 9.0  | 28.2 | 55.6 | 3.3  | 3.9                    | 55.6 | 2.9     | 0.3            | 0.7  | 54.7              | 56.0             |
| Indonesia          | 725  | 21.1 | 18.3 | 34.9 | 24.7 | 1.0                    | 34.9 | 0.0     | 0.0            | 1.0  | 32.6              | 37.0             |
| Iran, Islamic Rep. | 664  | 7.3  | 10.0 | 58.3 | 23.7 | 0.8                    | 58.3 | 0.0     | 0.1            | 0.6  | 54.0              | 61.1             |
| Israel             | 524  | 15.4 | 36.9 | 30.8 | 13.6 | 3.3                    | 30.8 | 0.4     | 0.7            | 2.2  | 32.7              | 29.1             |
| Italy              | 412  | 22.2 | 15.4 | 47.9 | 13.3 | 1.1                    | 47.9 | 0.0     | 0.0            | 1.1  | 45.5              | 50.2             |
| Japan              | 590  | 5.2  | 13.4 | 76.2 | 4.7  | 0.5                    | 76.2 | 0.3     | 0.2            | 0.0  | 74.0              | 78.4             |
| Jordan             | 623  | 8.6  | 12.0 | 54.1 | 24.4 | 0.8                    | 54.1 | 0.3     | 0.4            | 0.2  | 52.5              | 55.6             |
| Korea, Rep. of     | 763  | 11.7 | 18.0 | 59.1 | 11.0 | 0.3                    | 59.1 | 0.0     | 0.1            | 0.1  | 61.2              | 57.1             |
| Latvia (LSS)       | 361  | 13.7 | 21.4 | 47.2 | 16.5 | 1.2                    | 47.2 | 0.9     | 0.2            | 0.0  | 46.4              | 48.0             |
| Lithuania          | 293  | 9.2  | 41.1 | 36.9 | 10.1 | 2.7                    | 36.9 | 0.0     | 0.0            | 2.7  | 35.9              | 38.0             |
| Macedonia, Rep. of | 503  | 21.6 | 28.1 | 40.3 | 6.7  | 3.4                    | 40.3 | 0.7     | 0.6            | 2.1  | 38.7              | 41.7             |
| Malaysia           | 699  | 8.0  | 13.5 | 57.3 | 20.6 | 0.5                    | 57.3 | 0.0     | 0.0            | 0.5  | 59.4              | 54.9             |
| Moldova            | 462  | 19.0 | 35.6 | 34.1 | 7.2  | 4.1                    | 34.1 | 1.9     | 0.8            | 1.4  | 29.3              | 40.1             |
| Morocco            | 674  | 32.3 | 16.8 | 29.5 | 19.2 | 2.1                    | 29.5 | 0.0     | 0.3            | 1.8  | 32.4              | 27.8             |
| Netherlands        | 362  | 5.3  | 14.2 | 64.2 | 15.7 | 0.5                    | 64.2 | 0.2     | 0.1            | 0.2  | 63.9              | 64.7             |
| New Zealand        | 454  | 13.0 | 33.9 | 42.5 | 10.2 | 0.5                    | 42.5 | 0.0     | 0.0            | 0.5  | 42.2              | 42.7             |
| Philippines        | 836  | 27.3 | 21.6 | 30.4 | 19.5 | 1.2                    | 30.4 | 0.0     | 0.3            | 0.9  | 30.0              | 30.9             |
| Romania            | 430  | 14.2 | 28.1 | 52.1 | 3.1  | 2.5                    | 52.1 | 1.6     | 0.0            | 0.9  | 49.7              | 54.5             |
| Russian Federation | 549  | 9.2  | 20.8 | 60.2 | 5.6  | 4.2                    | 60.2 | 2.9     | 0.0            | 1.3  | 59.8              | 60.6             |
| Singapore          | 620  | 3.6  | 15.3 | 64.4 | 16.1 | 0.6                    | 64.4 | 0.2     | 0.0            | 0.4  | 66.4              | 62.6             |
| Slovak Republic    | 441  | 8.9  | 39.1 | 46.7 | 3.5  | 1.7                    | 46.7 | 0.3     | 0.0            | 1.4  | 44.5              | 48.9             |
| Slovenia           | 390  | 18.4 | 18.7 | 54.0 | 5.7  | 3.2                    | 54.0 | 1.9     | 0.0            | 1.3  | 56.5              | 51.5             |
| South Africa       | 1023 | 32.5 | 28.9 | 17.8 | 19.1 | 1.6                    | 17.8 | 0.7     | 0.3            | 0.6  | 19.2              | 16.1             |
| Thailand           | 722  | 16.7 | 15.1 | 48.5 | 19.1 | 0.6                    | 48.5 | 0.0     | 0.3            | 0.3  | 47.8              | 49.4             |
| Tunisia            | 638  | 16.0 | 13.6 | 23.2 | 36.8 | 10.3                   | 23.2 | 8.5     | 0.0            | 1.8  | 20.7              | 26.2             |
| Turkey             | 980  | 14.6 | 30.9 | 31.7 | 21.3 | 1.5                    | 31.7 | 0.0     | 0.0            | 1.5  | 30.3              | 32.6             |
| United States      | 1112 | 13.5 | 21.6 | 51.6 | 12.8 | 0.6                    | 51.6 | 0.2     | 0.1            | 0.4  | 50.6              | 52.5             |
| International Avg. | .    | 13.4 | 22.7 | 49.1 | 12.8 | 2.0                    | 49.1 | 0.7     | 0.2            | 1.0  | 47.9              | 50.2             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Life Science  
 Label: Mammal/lizards living in cold regions ( S022137 - N08 )  
 Item Type = MC Key = D

| COUNTRY            | N    | A    | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 491  | 8.2  | 7.0  | 37.9 | 46.1 | 0.8                    | 46.1 | 0.5     | 0.0            | 0.3  | 47.6              | 44.3             |
| Belgium (Flemish)  | 663  | 13.5 | 8.5  | 38.3 | 39.4 | 0.3                    | 39.4 | 0.0     | 0.0            | 0.3  | 35.7              | 43.2             |
| Bulgaria           | 404  | 10.5 | 3.5  | 22.2 | 58.9 | 5.0                    | 58.9 | 1.0     | 1.2            | 2.7  | 58.5              | 59.3             |
| Canada             | 1094 | 6.5  | 4.9  | 36.1 | 52.3 | 0.2                    | 52.3 | 0.0     | 0.0            | 0.2  | 52.1              | 52.7             |
| Chile              | 750  | 25.2 | 13.4 | 29.9 | 29.6 | 2.0                    | 29.6 | 0.0     | 0.0            | 2.0  | 31.0              | 28.1             |
| Chinese Taipei     | 724  | 7.3  | 2.9  | 40.6 | 49.2 | 0.0                    | 49.2 | 0.0     | 0.0            | 0.0  | 46.1              | 52.6             |
| Cyprus             | 386  | 23.5 | 7.6  | 31.6 | 34.9 | 2.4                    | 34.9 | 0.1     | 0.0            | 2.3  | 35.8              | 34.1             |
| Czech Republic     | 425  | 15.4 | 9.2  | 33.5 | 40.7 | 1.2                    | 40.7 | 0.0     | 0.0            | 1.2  | 34.9              | 45.9             |
| England            | 363  | 17.0 | 9.1  | 31.8 | 39.8 | 2.2                    | 39.8 | 0.0     | 1.9            | 0.3  | 36.0              | 43.4             |
| Finland            | 368  | 16.0 | 5.5  | 35.0 | 42.6 | 0.9                    | 42.6 | 0.0     | 0.2            | 0.8  | 42.3              | 42.9             |
| Hong Kong, SAR     | 646  | 8.3  | 5.1  | 34.9 | 51.1 | 0.5                    | 51.1 | 0.0     | 0.4            | 0.2  | 49.4              | 52.8             |
| Hungary            | 392  | 11.7 | 6.7  | 39.5 | 39.2 | 2.9                    | 39.2 | 0.4     | 0.3            | 2.2  | 42.4              | 36.4             |
| Indonesia          | 723  | 26.5 | 6.8  | 38.8 | 27.2 | 0.7                    | 27.2 | 0.1     | 0.0            | 0.6  | 29.1              | 25.3             |
| Iran, Islamic Rep. | 664  | 14.0 | 14.6 | 40.6 | 28.1 | 2.8                    | 28.1 | 0.0     | 0.1            | 2.7  | 26.4              | 29.2             |
| Israel             | 524  | 25.5 | 15.6 | 21.1 | 34.4 | 3.4                    | 34.4 | 0.3     | 0.7            | 2.4  | 34.0              | 34.8             |
| Italy              | 412  | 10.5 | 5.6  | 37.0 | 43.9 | 2.9                    | 43.9 | 0.0     | 0.0            | 2.9  | 45.3              | 42.6             |
| Japan              | 590  | 9.3  | 7.7  | 25.9 | 56.4 | 0.7                    | 56.4 | 0.3     | 0.2            | 0.2  | 54.8              | 57.9             |
| Jordan             | 623  | 26.8 | 14.4 | 28.1 | 28.6 | 2.0                    | 28.6 | 0.0     | 0.4            | 1.6  | 28.9              | 28.4             |
| Korea, Rep. of     | 763  | 7.3  | 3.5  | 30.8 | 58.1 | 0.3                    | 58.1 | 0.0     | 0.1            | 0.1  | 62.5              | 53.9             |
| Latvia (LSS)       | 361  | 12.4 | 7.3  | 33.2 | 45.4 | 1.7                    | 45.4 | 0.0     | 0.2            | 1.5  | 45.6              | 45.2             |
| Lithuania          | 293  | 12.1 | 6.8  | 35.1 | 44.4 | 1.6                    | 44.4 | 0.0     | 0.0            | 1.6  | 41.3              | 48.0             |
| Macedonia, Rep. of | 503  | 26.8 | 9.7  | 30.8 | 26.9 | 5.9                    | 26.9 | 0.2     | 0.6            | 5.1  | 27.3              | 26.6             |
| Malaysia           | 699  | 20.4 | 9.3  | 29.5 | 39.0 | 1.8                    | 39.0 | 0.0     | 0.0            | 1.8  | 38.2              | 40.0             |
| Moldova            | 462  | 24.4 | 15.9 | 23.8 | 31.7 | 4.2                    | 31.7 | 0.0     | 0.8            | 3.4  | 28.3              | 35.9             |
| Morocco            | 674  | 23.6 | 27.4 | 23.0 | 21.2 | 4.7                    | 21.2 | 0.0     | 0.3            | 4.4  | 22.8              | 20.2             |
| Netherlands        | 362  | 11.7 | 4.9  | 30.3 | 52.9 | 0.1                    | 52.9 | 0.0     | 0.1            | 0.0  | 54.1              | 51.6             |
| New Zealand        | 454  | 12.1 | 9.5  | 37.7 | 39.5 | 1.1                    | 39.5 | 0.0     | 0.0            | 1.1  | 41.8              | 37.3             |
| Philippines        | 836  | 17.1 | 14.3 | 32.6 | 34.7 | 1.3                    | 34.7 | 0.0     | 0.3            | 1.1  | 36.4              | 32.9             |
| Romania            | 430  | 22.3 | 13.5 | 23.3 | 38.2 | 2.6                    | 38.2 | 0.3     | 0.0            | 2.3  | 40.4              | 36.1             |
| Russian Federation | 549  | 9.5  | 6.9  | 19.3 | 62.2 | 2.1                    | 62.2 | 0.4     | 0.0            | 1.7  | 63.7              | 60.5             |
| Singapore          | 620  | 16.9 | 9.0  | 26.3 | 47.3 | 0.4                    | 47.3 | 0.0     | 0.0            | 0.4  | 44.1              | 50.4             |
| Slovak Republic    | 441  | 8.2  | 6.0  | 35.5 | 48.9 | 1.4                    | 48.9 | 0.0     | 0.0            | 1.4  | 42.8              | 54.9             |
| Slovenia           | 390  | 9.0  | 8.5  | 50.0 | 30.1 | 2.4                    | 30.1 | 0.3     | 0.0            | 2.1  | 25.5              | 34.8             |
| South Africa       | 1023 | 27.2 | 30.1 | 25.8 | 15.3 | 1.6                    | 15.3 | 0.5     | 0.3            | 0.8  | 17.1              | 13.2             |
| Thailand           | 722  | 8.9  | 11.1 | 29.9 | 48.7 | 1.3                    | 48.7 | 0.0     | 0.3            | 1.1  | 48.9              | 48.4             |
| Tunisia            | 638  | 24.1 | 10.8 | 31.4 | 24.1 | 9.6                    | 24.1 | 7.2     | 0.0            | 2.4  | 28.2              | 19.4             |
| Turkey             | 980  | 16.0 | 19.2 | 38.9 | 23.3 | 2.5                    | 23.3 | 0.0     | 0.0            | 2.5  | 27.3              | 20.5             |
| United States      | 1112 | 11.7 | 7.4  | 32.7 | 47.5 | 0.6                    | 47.5 | 0.0     | 0.1            | 0.5  | 46.0              | 49.0             |
| International Avg. | .    | 15.7 | 10.0 | 32.2 | 40.0 | 2.1                    | 40.0 | 0.3     | 0.2            | 1.5  | 39.8              | 40.3             |

DIFF = Item Difficulty Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Physics  
 Label: Balancing 10 and 5 liter buckets ( S022030 - N09 )  
 Item Type = MC Key = D

| COUNTRY            | N    | A    | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 491  | 6.1  | 4.7  | 8.3  | 80.3 | 0.6                    | 80.3 | 0.2     | 0.0            | 0.4  | 75.7              | 85.8             |
| Belgium (Flemish)  | 663  | 7.1  | 5.1  | 10.8 | 76.9 | 0.1                    | 76.9 | 0.0     | 0.0            | 0.1  | 69.7              | 84.2             |
| Bulgaria           | 404  | 5.6  | 6.4  | 9.0  | 75.8 | 3.2                    | 75.8 | 0.8     | 1.4            | 1.0  | 72.2              | 79.4             |
| Canada             | 1094 | 9.7  | 4.6  | 7.4  | 77.9 | 0.4                    | 77.9 | 0.2     | 0.0            | 0.2  | 70.4              | 86.6             |
| Chile              | 750  | 12.3 | 11.5 | 12.0 | 63.1 | 1.2                    | 63.1 | 0.0     | 0.1            | 1.0  | 54.3              | 72.3             |
| Chinese Taipei     | 724  | 4.2  | 3.7  | 8.5  | 83.6 | 0.0                    | 83.6 | 0.0     | 0.0            | 0.0  | 81.7              | 85.8             |
| Cyprus             | 387  | 12.4 | 23.5 | 12.4 | 50.0 | 1.6                    | 50.0 | 0.0     | 0.0            | 1.6  | 41.8              | 56.9             |
| Czech Republic     | 425  | 4.8  | 4.0  | 9.5  | 81.6 | 0.0                    | 81.6 | 0.0     | 0.0            | 0.0  | 77.9              | 85.0             |
| England            | 363  | 11.3 | 7.7  | 9.3  | 69.5 | 2.1                    | 69.5 | 0.0     | 1.9            | 0.3  | 65.1              | 73.7             |
| Finland            | 368  | 3.7  | 2.9  | 6.4  | 85.7 | 1.2                    | 85.7 | 0.0     | 0.2            | 1.1  | 86.3              | 85.1             |
| Hong Kong, SAR     | 646  | 9.2  | 7.5  | 10.9 | 71.8 | 0.5                    | 71.8 | 0.0     | 0.4            | 0.2  | 66.5              | 76.7             |
| Hungary            | 392  | 5.6  | 2.7  | 8.1  | 81.5 | 2.2                    | 81.5 | 0.6     | 0.3            | 1.4  | 75.8              | 86.2             |
| Indonesia          | 725  | 11.6 | 11.4 | 11.0 | 65.7 | 0.3                    | 65.7 | 0.0     | 0.0            | 0.3  | 55.5              | 74.9             |
| Iran, Islamic Rep. | 664  | 20.4 | 13.9 | 16.0 | 46.9 | 2.8                    | 46.9 | 0.0     | 0.1            | 2.6  | 35.0              | 54.8             |
| Israel             | 524  | 14.8 | 12.0 | 13.7 | 56.1 | 3.4                    | 56.1 | 0.7     | 0.7            | 2.0  | 54.4              | 57.7             |
| Italy              | 412  | 12.7 | 9.3  | 7.5  | 69.2 | 1.4                    | 69.2 | 0.0     | 0.0            | 1.4  | 63.1              | 74.9             |
| Japan              | 590  | 2.7  | 2.1  | 7.3  | 87.6 | 0.3                    | 87.6 | 0.0     | 0.2            | 0.1  | 86.5              | 88.5             |
| Jordan             | .    | .    | .    | .    | .    | .                      | .    | .       | .              | .    | .                 | .                |
| Korea, Rep. of     | 763  | 3.0  | 1.4  | 8.3  | 86.8 | 0.5                    | 86.8 | 0.2     | 0.1            | 0.2  | 85.6              | 88.0             |
| Latvia (LSS)       | 361  | 5.6  | 5.6  | 5.5  | 81.7 | 1.7                    | 81.7 | 0.7     | 0.2            | 0.7  | 74.4              | 88.8             |
| Lithuania          | 293  | 7.3  | 5.7  | 6.4  | 78.3 | 2.4                    | 78.3 | 0.3     | 0.0            | 2.1  | 73.3              | 83.8             |
| Macedonia, Rep. of | 503  | 12.7 | 10.6 | 12.3 | 61.6 | 2.8                    | 61.6 | 0.6     | 0.6            | 1.6  | 51.3              | 71.6             |
| Malaysia           | 699  | 7.4  | 8.6  | 8.4  | 75.6 | 0.0                    | 75.6 | 0.0     | 0.0            | 0.0  | 70.7              | 81.4             |
| Moldova            | 462  | 8.5  | 12.3 | 14.0 | 61.9 | 3.3                    | 61.9 | 1.0     | 0.8            | 1.5  | 56.1              | 69.1             |
| Morocco            | 674  | 17.8 | 23.4 | 16.7 | 34.3 | 7.8                    | 34.3 | 0.0     | 0.3            | 7.5  | 27.7              | 38.7             |
| Netherlands        | 362  | 5.6  | 3.6  | 7.8  | 82.9 | 0.1                    | 82.9 | 0.0     | 0.1            | 0.0  | 86.1              | 79.3             |
| New Zealand        | 454  | 9.4  | 4.5  | 7.8  | 76.7 | 1.5                    | 76.7 | 0.5     | 0.0            | 1.0  | 73.5              | 79.9             |
| Philippines        | 836  | 12.5 | 16.5 | 12.1 | 58.2 | 0.7                    | 58.2 | 0.2     | 0.3            | 0.2  | 52.7              | 64.0             |
| Romania            | 430  | 14.4 | 7.2  | 7.2  | 70.0 | 1.2                    | 70.0 | 0.2     | 0.0            | 1.0  | 66.0              | 74.0             |
| Russian Federation | 549  | 3.9  | 1.7  | 6.0  | 87.5 | 0.8                    | 87.5 | 0.2     | 0.0            | 0.7  | 86.6              | 88.5             |
| Singapore          | 620  | 6.9  | 6.0  | 10.1 | 77.1 | 0.0                    | 77.1 | 0.0     | 0.0            | 0.0  | 76.6              | 77.5             |
| Slovak Republic    | 441  | 3.0  | 4.9  | 11.1 | 80.1 | 1.0                    | 80.1 | 0.0     | 0.0            | 1.0  | 74.5              | 85.6             |
| Slovenia           | 390  | 4.9  | 5.7  | 5.2  | 84.0 | 0.2                    | 84.0 | 0.2     | 0.0            | 0.0  | 80.6              | 87.4             |
| South Africa       | 1023 | 27.8 | 18.8 | 17.1 | 32.7 | 3.6                    | 32.7 | 0.7     | 0.5            | 2.5  | 25.4              | 41.3             |
| Thailand           | 722  | 6.3  | 7.1  | 7.9  | 78.4 | 0.3                    | 78.4 | 0.0     | 0.3            | 0.0  | 76.2              | 80.8             |
| Tunisia            | 638  | 13.2 | 17.0 | 12.9 | 52.2 | 4.8                    | 52.2 | 3.0     | 0.0            | 1.7  | 44.1              | 61.5             |
| Turkey             | 980  | 13.6 | 8.3  | 7.7  | 69.2 | 1.3                    | 69.2 | 0.0     | 0.0            | 1.3  | 64.2              | 72.7             |
| United States      | 1112 | 9.4  | 5.9  | 10.7 | 73.3 | 0.8                    | 73.3 | 0.4     | 0.1            | 0.3  | 67.0              | 79.8             |
| International Avg. | .    | 9.4  | 8.3  | 9.8  | 71.0 | 1.5                    | 71.0 | 0.3     | 0.2            | 1.0  | 66.1              | 75.7             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Physics  
 Label: Flashlights with white/black reflectors ( S022049 - N10 )  
 Item Type = SA Key = X

| COUNTRY            | N    | NOT REACHED |      |     |      |      |      |      |      |      | 1.GIRL |      | 2.BOY   |         |
|--------------------|------|-------------|------|-----|------|------|------|------|------|------|--------|------|---------|---------|
|                    |      | 10          | 11   | 19  | 70   | 71   | 77   | 79   | 99   | V1   | ED     | OMIT | % Right | % Right |
| Australia          | 491  | 41.1        | 5.8  | 0.0 | 9.2  | 40.7 | 0.0  | 0.6  | 2.5  | 47.0 | 0.0    | 2.5  | 44.2    | 50.2    |
| Belgium (Flemish)  | 663  | 36.0        | 14.1 | 0.4 | 15.8 | 29.7 | 0.0  | 3.5  | 0.5  | 50.5 | 0.0    | 0.5  | 44.7    | 56.4    |
| Bulgaria           | 404  | 41.3        | 2.9  | 1.1 | 24.3 | 23.1 | 0.0  | 1.7  | 5.6  | 45.3 | 1.4    | 4.2  | 38.1    | 52.5    |
| Canada             | 1094 | 40.2        | 6.8  | 0.5 | 9.0  | 41.9 | 0.0  | 1.1  | 0.5  | 47.4 | 0.0    | 0.5  | 36.9    | 59.9    |
| Chile              | 750  | 10.8        | 6.1  | 0.1 | 21.6 | 22.3 | 33.8 | 1.9  | 3.4  | 17.0 | 0.1    | 3.3  | 11.5    | 22.8    |
| Chinese Taipei     | 724  | 54.6        | 2.9  | 2.0 | 10.9 | 28.7 | 0.0  | 0.4  | 0.5  | 59.5 | 0.0    | 0.5  | 53.1    | 66.5    |
| Cyprus             | 385  | 15.2        | 6.8  | 3.8 | 17.5 | 50.2 | 0.0  | 5.5  | 1.0  | 25.7 | 0.0    | 1.0  | 20.1    | 30.4    |
| Czech Republic     | 425  | 43.3        | 4.8  | 0.4 | 11.3 | 35.7 | 0.0  | 3.3  | 1.2  | 48.4 | 0.0    | 1.2  | 32.6    | 62.8    |
| England            | 363  | 50.3        | 3.4  | 0.0 | 10.1 | 33.1 | 0.0  | 0.3  | 2.7  | 53.7 | 1.9    | 0.8  | 41.6    | 65.1    |
| Finland            | 368  | 38.5        | 5.3  | 0.0 | 13.8 | 40.7 | 0.0  | 1.1  | 0.6  | 43.8 | 0.2    | 0.4  | 33.5    | 53.6    |
| Hong Kong, SAR     | 646  | 36.4        | 1.5  | 0.2 | 19.6 | 39.6 | 0.0  | 1.2  | 1.5  | 38.1 | 0.4    | 1.1  | 35.0    | 41.0    |
| Hungary            | 392  | 39.4        | 12.9 | 0.0 | 10.7 | 32.0 | 0.0  | 0.5  | 4.5  | 52.3 | 0.3    | 4.3  | 43.6    | 59.3    |
| Indonesia          | 725  | 14.4        | 25.3 | 0.6 | 20.6 | 33.6 | 0.0  | 4.1  | 1.4  | 40.3 | 0.0    | 1.4  | 35.2    | 44.9    |
| Iran, Islamic Rep. | 664  | 21.2        | 0.1  | 0.0 | 16.6 | 58.2 | 0.0  | 1.4  | 2.5  | 21.3 | 0.1    | 2.3  | 13.9    | 26.3    |
| Israel             | 524  | 18.3        | 5.2  | 0.7 | 26.0 | 35.7 | 0.0  | 6.8  | 7.3  | 24.2 | 0.9    | 6.4  | 24.0    | 24.5    |
| Italy              | 412  | 25.4        | 8.7  | 0.2 | 17.9 | 43.1 | 0.0  | 1.8  | 2.8  | 34.3 | 0.0    | 2.8  | 32.3    | 36.3    |
| Japan              | 590  | 42.8        | 7.1  | 0.0 | 11.1 | 38.0 | 0.0  | 0.0  | 1.1  | 49.8 | 0.2    | 0.9  | 41.5    | 57.8    |
| Jordan             | 624  | 35.6        | 6.4  | 0.6 | 22.2 | 28.4 | 0.0  | 2.4  | 4.4  | 42.5 | 0.4    | 4.0  | 38.5    | 46.2    |
| Korea, Rep. of     | 763  | 41.1        | 1.7  | 0.2 | 8.5  | 44.2 | 0.0  | 3.9  | 0.4  | 43.0 | 0.1    | 0.2  | 41.8    | 44.2    |
| Latvia (LSS)       | 361  | 30.7        | 10.0 | 0.0 | 11.2 | 45.3 | 0.0  | 1.4  | 1.5  | 40.7 | 0.2    | 1.2  | 25.7    | 55.4    |
| Lithuania          | 293  | 39.5        | 4.8  | 2.8 | 11.6 | 37.1 | 0.0  | 2.1  | 2.1  | 47.1 | 0.0    | 2.1  | 32.1    | 63.6    |
| Macedonia, Rep. of | 503  | 25.2        | 5.9  | 6.2 | 19.5 | 14.2 | 0.0  | 15.3 | 13.7 | 37.3 | 0.6    | 13.1 | 33.1    | 41.3    |
| Malaysia           | 699  | 46.6        | 7.8  | 0.4 | 13.0 | 28.8 | 0.0  | 2.3  | 1.2  | 54.8 | 0.0    | 1.2  | 50.4    | 60.0    |
| Moldova            | 462  | 14.2        | 7.0  | 0.6 | 31.6 | 35.3 | 0.0  | 3.7  | 7.6  | 21.7 | 0.8    | 6.9  | 20.0    | 23.8    |
| Morocco            | 674  | 11.0        | 2.7  | 2.6 | 27.3 | 33.0 | 0.0  | 10.8 | 12.5 | 16.4 | 0.7    | 11.8 | 14.7    | 17.5    |
| Netherlands        | 362  | 39.9        | 11.9 | 0.0 | 16.4 | 31.0 | 0.0  | 0.7  | 0.1  | 51.8 | 0.1    | 0.0  | 46.9    | 57.4    |
| New Zealand        | 454  | 33.6        | 7.6  | 0.2 | 12.2 | 45.4 | 0.0  | 0.7  | 0.4  | 41.3 | 0.0    | 0.4  | 39.0    | 43.6    |
| Philippines        | 836  | 3.1         | 7.4  | 1.1 | 34.2 | 38.1 | 0.0  | 8.4  | 7.6  | 11.6 | 0.3    | 7.3  | 13.5    | 9.6     |
| Romania            | 430  | 20.7        | 4.7  | 0.0 | 26.7 | 42.4 | 0.0  | 1.1  | 4.4  | 25.4 | 0.0    | 4.4  | 21.5    | 29.3    |
| Russian Federation | 549  | 40.4        | 15.5 | 1.1 | 17.6 | 23.0 | 0.0  | 0.7  | 1.7  | 57.0 | 0.4    | 1.3  | 52.0    | 62.8    |
| Singapore          | 620  | 55.9        | 1.3  | 0.8 | 14.8 | 26.3 | 0.0  | 0.2  | 0.8  | 58.0 | 0.0    | 0.8  | 55.0    | 60.8    |
| Slovak Republic    | 442  | 30.2        | 11.9 | 0.0 | 11.6 | 42.7 | 0.0  | 1.9  | 1.8  | 42.1 | 0.0    | 1.8  | 33.3    | 50.7    |
| Slovenia           | 390  | 36.8        | 10.0 | 0.0 | 13.6 | 36.4 | 0.0  | 1.5  | 1.7  | 46.8 | 0.0    | 1.7  | 37.9    | 56.0    |
| South Africa       | 1023 | 3.2         | 7.7  | 0.0 | 36.6 | 28.9 | 0.0  | 16.5 | 7.0  | 10.9 | 0.6    | 6.5  | 10.0    | 11.9    |
| Thailand           | 722  | 26.6        | 12.9 | 0.1 | 11.1 | 45.9 | 0.0  | 2.4  | 0.9  | 39.7 | 0.3    | 0.6  | 35.8    | 44.1    |
| Tunisia            | 636  | 31.7        | 3.0  | 0.2 | 15.8 | 44.3 | 0.0  | 2.5  | 2.5  | 34.8 | 0.3    | 2.2  | 30.5    | 39.9    |
| Turkey             | 980  | 22.8        | 8.6  | 0.8 | 12.5 | 44.4 | 0.0  | 4.2  | 6.6  | 32.3 | 0.0    | 6.6  | 29.3    | 34.4    |
| United States      | 1112 | 40.5        | 4.3  | 0.3 | 14.8 | 36.9 | 0.0  | 1.0  | 2.1  | 45.1 | 0.1    | 2.1  | 39.8    | 50.7    |
| International Avg. | .    | 31.5        | 7.2  | 0.7 | 17.1 | 36.3 | 0.9  | 3.1  | 3.2  | 39.5 | 0.3    | 2.9  | 33.8    | 45.1    |

V1 = % Scoring 1 or better V2 = % Scoring 2 or better V3 = % Scoring 3 or better  
 Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.  
 Because of missing gender information, some totals may appear inconsistent

Science: Environmental and Resource Issues  
 Label: Hole in ozone layer ( S022086 - 010 )  
 Item Type = SA Key = X

| COUNTRY            | N    | 10   | 11   | 12   | 13   | 14   | 19  | 70   | 71   | 79   | 99   | V1   | NOT REACHED | OMIT | 1.GIRL % Right | 2.BOY % Right |
|--------------------|------|------|------|------|------|------|-----|------|------|------|------|------|-------------|------|----------------|---------------|
| Australia          | 518  | 28.4 | 10.3 | 11.9 | 4.8  | 6.7  | 0.0 | 15.6 | 3.2  | 13.9 | 5.2  | 62.1 | 0.0         | 5.2  | 58.7           | 65.4          |
| Belgium (Flemish)  | 664  | 16.6 | 7.8  | 11.8 | 9.0  | 3.7  | 1.0 | 13.3 | 16.4 | 16.4 | 4.1  | 49.9 | 0.0         | 4.1  | 46.9           | 52.8          |
| Bulgaria           | 411  | 11.3 | 16.1 | 6.7  | 7.7  | 5.8  | 4.0 | 9.4  | 1.4  | 17.7 | 20.0 | 51.6 | 1.0         | 19.0 | 51.1           | 52.0          |
| Canada             | 1079 | 21.9 | 10.1 | 14.5 | 9.7  | 7.7  | 0.2 | 8.8  | 8.1  | 14.4 | 4.5  | 64.2 | 0.2         | 4.3  | 62.4           | 66.2          |
| Chile              | 745  | 22.1 | 14.9 | 12.8 | 7.6  | 6.6  | 0.5 | 4.6  | 5.5  | 12.0 | 13.3 | 64.6 | 0.3         | 13.0 | 59.7           | 69.6          |
| Chinese Taipei     | 711  | 49.5 | 21.4 | 2.4  | 1.5  | 2.8  | 1.7 | 7.7  | 0.2  | 10.4 | 2.4  | 79.3 | 0.0         | 2.4  | 78.2           | 80.2          |
| Cyprus             | 381  | 5.6  | 2.0  | 9.8  | 4.9  | 5.9  | 5.6 | 14.5 | 1.6  | 32.3 | 17.8 | 33.8 | 0.0         | 17.8 | 30.9           | 36.7          |
| Czech Republic     | 425  | 17.1 | 19.7 | 11.8 | 15.5 | 10.8 | 0.2 | 3.3  | 2.0  | 10.4 | 9.2  | 75.2 | 0.0         | 9.2  | 70.3           | 79.9          |
| England            | 360  | 9.5  | 2.1  | 14.6 | 6.3  | 4.6  | 0.0 | 20.8 | 14.2 | 16.4 | 11.5 | 37.1 | 3.9         | 7.6  | 30.9           | 42.4          |
| Finland            | 357  | 9.5  | 26.5 | 5.7  | 16.0 | 3.9  | 1.0 | 2.8  | 13.7 | 15.7 | 5.1  | 62.7 | 0.0         | 5.1  | 59.8           | 66.0          |
| Hong Kong, SAR     | 638  | 24.4 | 11.5 | 8.3  | 10.8 | 3.8  | 1.2 | 8.6  | 9.4  | 15.8 | 6.2  | 60.0 | 0.1         | 6.1  | 55.7           | 64.3          |
| Hungary            | 397  | 24.7 | 14.3 | 16.5 | 14.2 | 3.9  | 2.2 | 4.5  | 0.8  | 12.7 | 6.2  | 75.9 | 0.0         | 6.2  | 71.5           | 80.3          |
| Indonesia          | 734  | 6.2  | 4.9  | 2.5  | 6.5  | 3.3  | 0.2 | 7.2  | 4.6  | 57.9 | 6.7  | 23.7 | 0.0         | 6.7  | 22.8           | 24.7          |
| Iran, Islamic Rep. | 666  | 0.9  | 1.3  | 4.2  | 8.1  | 1.1  | 0.4 | 6.9  | 4.7  | 43.9 | 28.4 | 16.0 | 0.0         | 28.4 | 10.3           | 19.7          |
| Israel             | 525  | 8.4  | 4.4  | 11.8 | 14.3 | 2.8  | 1.5 | 13.1 | 5.0  | 19.9 | 18.8 | 43.2 | 1.8         | 17.0 | 44.3           | 42.0          |
| Italy              | 416  | 19.6 | 19.5 | 4.5  | 6.4  | 3.6  | 6.5 | 6.9  | 0.7  | 19.0 | 13.4 | 60.0 | 0.0         | 13.4 | 57.9           | 62.1          |
| Japan              | 601  | 17.1 | 22.4 | 3.4  | 7.0  | 0.9  | 6.5 | 2.7  | 3.0  | 22.8 | 14.3 | 57.1 | 0.3         | 14.0 | 53.8           | 60.5          |
| Jordan             | 639  | 9.0  | 5.7  | 3.5  | 4.5  | 9.9  | 0.7 | 3.7  | 1.0  | 47.8 | 14.3 | 33.2 | 0.2         | 14.1 | 38.5           | 28.4          |
| Korea, Rep. of     | 764  | 28.5 | 17.4 | 10.1 | 7.6  | 3.7  | 0.1 | 6.3  | 5.9  | 13.6 | 6.8  | 67.4 | 0.0         | 6.8  | 60.8           | 73.8          |
| Latvia (LSS)       | 353  | 10.9 | 13.0 | 9.4  | 14.1 | 6.4  | 2.4 | 5.4  | 6.8  | 18.8 | 12.9 | 56.2 | 1.1         | 11.8 | 51.0           | 62.8          |
| Lithuania          | 299  | 16.1 | 17.5 | 5.3  | 7.2  | 5.7  | 0.0 | 2.2  | 6.8  | 23.1 | 16.1 | 51.8 | 0.6         | 15.6 | 40.4           | 62.1          |
| Macedonia, Rep. of | 501  | 9.3  | 8.0  | 5.6  | 2.1  | 1.7  | 8.2 | 2.5  | 1.2  | 20.7 | 40.6 | 34.9 | 1.0         | 39.6 | 35.8           | 34.1          |
| Malaysia           | 687  | 11.8 | 4.4  | 5.9  | 4.0  | 2.0  | 0.8 | 17.7 | 7.5  | 30.0 | 15.8 | 29.0 | 0.0         | 15.8 | 26.5           | 32.0          |
| Moldova            | 466  | 8.6  | 15.7 | 7.0  | 4.0  | 2.0  | 5.4 | 2.5  | 6.0  | 17.5 | 31.4 | 42.7 | 1.3         | 30.1 | 46.1           | 38.8          |
| Morocco            | 696  | 1.2  | 1.7  | 3.1  | 2.3  | 2.2  | 5.1 | 1.4  | 0.4  | 49.3 | 33.3 | 15.5 | 0.3         | 33.0 | 15.2           | 15.8          |
| Netherlands        | 370  | 17.2 | 21.6 | 7.0  | 10.1 | 5.4  | 0.0 | 11.1 | 5.0  | 21.0 | 1.7  | 61.3 | 0.1         | 1.5  | 56.5           | 65.9          |
| New Zealand        | 448  | 21.9 | 4.2  | 15.6 | 9.4  | 10.9 | 0.2 | 12.1 | 5.2  | 15.5 | 4.9  | 62.3 | 0.2         | 4.7  | 62.6           | 62.0          |
| Philippines        | 815  | 8.5  | 5.5  | 4.3  | 3.4  | 5.5  | 2.0 | 10.8 | 1.6  | 39.0 | 19.3 | 29.2 | 0.3         | 19.0 | 30.3           | 27.9          |
| Romania            | 425  | 5.5  | 12.2 | 2.7  | 9.0  | 0.6  | 0.0 | 8.7  | 2.1  | 24.7 | 34.4 | 30.1 | 0.3         | 34.1 | 26.2           | 35.1          |
| Russian Federation | 541  | 14.2 | 9.2  | 12.8 | 9.6  | 2.8  | 0.8 | 4.5  | 4.2  | 20.9 | 21.0 | 49.4 | 0.3         | 20.6 | 47.5           | 51.5          |
| Singapore          | 622  | 53.4 | 13.8 | 2.7  | 2.4  | 6.8  | 1.5 | 8.5  | 1.4  | 7.7  | 2.0  | 80.5 | 0.1         | 1.9  | 76.9           | 84.2          |
| Slovak Republic    | 443  | 17.7 | 16.8 | 12.4 | 9.2  | 18.0 | 3.5 | 3.4  | 1.8  | 9.2  | 8.0  | 77.7 | 0.0         | 8.0  | 78.9           | 76.6          |
| Slovenia           | 390  | 26.5 | 16.6 | 7.3  | 8.8  | 6.0  | 0.5 | 1.7  | 2.9  | 16.6 | 13.0 | 65.7 | 0.0         | 13.0 | 66.5           | 64.9          |
| South Africa       | 1021 | 0.5  | 0.6  | 1.8  | 0.6  | 1.5  | 0.3 | 1.6  | 1.2  | 59.4 | 32.5 | 5.2  | 0.1         | 32.3 | 5.6            | 4.7           |
| Thailand           | 725  | 9.9  | 3.4  | 8.1  | 5.4  | 3.2  | 6.6 | 10.6 | 1.4  | 43.2 | 8.2  | 36.6 | 0.2         | 8.1  | 35.0           | 38.6          |
| Tunisia            | 629  | 5.0  | 5.6  | 12.4 | 16.0 | 8.7  | 3.1 | 4.7  | 12.3 | 23.8 | 8.4  | 50.7 | 0.5         | 7.9  | 45.7           | 56.3          |
| Turkey             | 980  | 4.2  | 3.3  | 4.3  | 12.4 | 5.1  | 2.5 | 8.5  | 9.6  | 28.5 | 21.6 | 31.9 | 0.1         | 21.5 | 26.1           | 36.4          |
| United States      | 1088 | 17.1 | 9.2  | 8.4  | 7.8  | 5.7  | 0.0 | 9.9  | 9.0  | 25.8 | 7.1  | 48.2 | 0.1         | 7.0  | 39.8           | 56.4          |
| International Avg. | .    | 15.5 | 10.9 | 8.0  | 7.9  | 5.1  | 2.0 | 7.6  | 4.9  | 23.9 | 14.2 | 49.4 | 0.4         | 13.8 | 46.8           | 51.9          |

V1 = % Scoring 1 or better V2 = % Scoring 2 or better V3 = % Scoring 3 or better  
 Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.  
 Because of missing gender information, some totals may appear inconsistent



Science: Chemistry  
 Label: Chemical change involving elements ( S022198 - 011 )  
 Item Type = MC Key = C

| COUNTRY            | N    | A    | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 518  | 8.4  | 37.6 | 41.7 | 11.8 | 0.4                    | 41.7 | 0.2     | 0.0            | 0.2  | 35.2              | 48.1             |
| Belgium (Flemish)  | 664  | 6.3  | 37.8 | 35.0 | 18.6 | 2.2                    | 35.0 | 0.4     | 0.0            | 1.9  | 30.8              | 39.1             |
| Bulgaria           | 411  | 1.3  | 39.5 | 41.1 | 12.2 | 5.9                    | 41.1 | 1.5     | 1.0            | 3.4  | 36.0              | 46.4             |
| Canada             | 1079 | 8.2  | 42.1 | 37.3 | 11.5 | 0.8                    | 37.3 | 0.2     | 0.2            | 0.4  | 36.2              | 38.5             |
| Chile              | 745  | 7.8  | 46.1 | 16.8 | 27.3 | 2.0                    | 16.8 | 0.0     | 0.3            | 1.7  | 17.9              | 15.6             |
| Chinese Taipei     | 711  | 5.2  | 12.0 | 73.3 | 9.5  | 0.0                    | 73.3 | 0.0     | 0.0            | 0.0  | 73.4              | 73.2             |
| Cyprus             | 381  | 4.3  | 38.0 | 34.1 | 21.5 | 2.2                    | 34.1 | 0.0     | 0.0            | 2.2  | 38.0              | 30.3             |
| Czech Republic     | 425  | 2.6  | 40.8 | 26.8 | 27.9 | 1.9                    | 26.8 | 0.9     | 0.0            | 1.0  | 24.7              | 28.9             |
| England            | 360  | 5.1  | 36.7 | 41.1 | 12.7 | 4.4                    | 41.1 | 0.0     | 3.9            | 0.4  | 38.2              | 43.6             |
| Finland            | 357  | 4.0  | 43.9 | 29.5 | 18.1 | 4.6                    | 29.5 | 0.0     | 0.0            | 4.6  | 25.7              | 33.7             |
| Hong Kong, SAR     | 638  | 6.8  | 23.3 | 51.7 | 17.7 | 0.6                    | 51.7 | 0.0     | 0.1            | 0.5  | 50.3              | 52.8             |
| Hungary            | 397  | 1.4  | 33.1 | 50.4 | 12.4 | 2.7                    | 50.4 | 2.1     | 0.0            | 0.6  | 47.1              | 53.5             |
| Indonesia          | 734  | 16.6 | 50.4 | 20.0 | 11.3 | 1.7                    | 20.0 | 0.2     | 0.0            | 1.5  | 22.0              | 17.9             |
| Iran, Islamic Rep. | 666  | 7.7  | 32.6 | 48.4 | 9.5  | 1.8                    | 48.4 | 0.1     | 0.0            | 1.7  | 45.7              | 50.2             |
| Israel             | 97   | 13.3 | 33.4 | 31.7 | 19.7 | 1.8                    | 31.7 | 0.0     | 0.0            | 1.8  | 19.8              | 48.1             |
| Italy              | 416  | 3.8  | 31.9 | 44.6 | 18.5 | 1.1                    | 44.6 | 0.0     | 0.0            | 1.1  | 43.0              | 46.1             |
| Japan              | 601  | 2.1  | 29.5 | 47.5 | 20.3 | 0.7                    | 47.5 | 0.0     | 0.3            | 0.3  | 47.6              | 47.4             |
| Jordan             | 639  | 4.9  | 27.2 | 49.9 | 16.5 | 1.5                    | 49.9 | 0.0     | 0.2            | 1.3  | 51.5              | 48.3             |
| Korea, Rep. of     | 765  | 3.9  | 38.5 | 47.5 | 9.9  | 0.1                    | 47.5 | 0.1     | 0.0            | 0.0  | 46.8              | 48.2             |
| Latvia (LSS)       | 353  | 2.1  | 53.6 | 27.3 | 13.2 | 3.8                    | 27.3 | 1.2     | 1.5            | 1.0  | 28.7              | 25.7             |
| Lithuania          | 299  | 5.9  | 49.3 | 17.5 | 23.7 | 3.6                    | 17.5 | 0.0     | 0.6            | 3.0  | 13.6              | 21.0             |
| Macedonia, Rep. of | 501  | 5.2  | 36.1 | 25.5 | 27.9 | 5.3                    | 25.5 | 1.1     | 1.0            | 3.1  | 22.0              | 28.9             |
| Malaysia           | 687  | 13.5 | 22.7 | 46.1 | 17.0 | 0.8                    | 46.1 | 0.0     | 0.0            | 0.8  | 44.0              | 48.5             |
| Moldova            | 466  | 1.9  | 27.3 | 32.9 | 33.2 | 4.7                    | 32.9 | 1.6     | 1.3            | 1.8  | 30.2              | 35.9             |
| Morocco            | 695  | 11.2 | 45.0 | 20.5 | 19.9 | 3.4                    | 20.5 | 0.1     | 0.3            | 3.0  | 21.4              | 19.9             |
| Netherlands        | 370  | 4.0  | 37.5 | 46.4 | 10.6 | 1.6                    | 46.4 | 0.0     | 0.1            | 1.5  | 43.8              | 48.7             |
| New Zealand        | 448  | 5.4  | 44.9 | 34.2 | 14.2 | 1.3                    | 34.2 | 0.4     | 0.2            | 0.8  | 37.1              | 31.4             |
| Philippines        | 815  | 13.8 | 33.9 | 31.7 | 19.7 | 0.9                    | 31.7 | 0.0     | 0.3            | 0.6  | 32.6              | 30.7             |
| Romania            | 425  | 4.6  | 36.4 | 29.1 | 25.3 | 4.6                    | 29.1 | 1.8     | 0.3            | 2.5  | 30.7              | 27.0             |
| Russian Federation | 541  | 4.4  | 30.7 | 39.7 | 20.6 | 4.7                    | 39.7 | 1.8     | 0.3            | 2.6  | 34.5              | 45.2             |
| Singapore          | 622  | 7.1  | 30.4 | 51.3 | 10.6 | 0.6                    | 51.3 | 0.0     | 0.1            | 0.5  | 51.2              | 51.3             |
| Slovak Republic    | 443  | 1.5  | 34.7 | 27.3 | 34.0 | 2.5                    | 27.3 | 0.6     | 0.0            | 2.0  | 27.4              | 27.3             |
| Slovenia           | 390  | 3.0  | 53.6 | 25.0 | 17.4 | 1.0                    | 25.0 | 0.2     | 0.0            | 0.8  | 24.1              | 26.0             |
| South Africa       | 1021 | 11.2 | 36.2 | 24.5 | 27.5 | 0.6                    | 24.5 | 0.1     | 0.1            | 0.3  | 25.2              | 23.7             |
| Thailand           | 725  | 4.3  | 35.6 | 50.2 | 9.4  | 0.5                    | 50.2 | 0.0     | 0.2            | 0.4  | 49.3              | 51.4             |
| Tunisia            | 629  | 2.6  | 32.5 | 37.4 | 21.3 | 6.3                    | 37.4 | 4.2     | 0.5            | 1.6  | 38.9              | 35.7             |
| Turkey             | 980  | 7.0  | 39.7 | 28.3 | 22.8 | 2.3                    | 28.3 | 0.1     | 0.1            | 2.1  | 25.4              | 30.5             |
| United States      | 1088 | 5.5  | 45.0 | 34.8 | 13.8 | 0.8                    | 34.8 | 0.1     | 0.1            | 0.7  | 32.1              | 37.4             |
| International Avg. | .    | 6.0  | 36.8 | 36.8 | 18.1 | 2.3                    | 36.8 | 0.5     | 0.3            | 1.4  | 35.3              | 38.3             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Earth Science  
 Label: Abundance of gases in atmosphere ( S022275 - O12 )  
 Item Type = MC Key = A

| COUNTRY            | N    | A    | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 518  | 19.4 | 14.0 | 38.8 | 27.5 | 0.4                    | 19.4 | 0.0     | 0.0            | 0.4  | 16.7              | 22.0             |
| Belgium (Flemish)  | 664  | 12.7 | 18.5 | 36.8 | 31.7 | 0.3                    | 12.7 | 0.1     | 0.0            | 0.2  | 10.6              | 14.7             |
| Bulgaria           | 411  | 42.2 | 9.9  | 30.2 | 12.9 | 4.8                    | 42.2 | 0.3     | 1.0            | 3.6  | 42.0              | 42.5             |
| Canada             | 1079 | 23.0 | 15.5 | 39.3 | 21.1 | 1.1                    | 23.0 | 0.2     | 0.2            | 0.7  | 23.5              | 22.7             |
| Chile              | 744  | 15.2 | 12.8 | 53.4 | 17.3 | 1.3                    | 15.2 | 0.0     | 0.4            | 0.9  | 15.4              | 15.0             |
| Chinese Taipei     | 711  | 55.8 | 18.1 | 15.7 | 10.3 | 0.0                    | 55.8 | 0.0     | 0.0            | 0.0  | 57.0              | 54.8             |
| Cyprus             | 381  | 27.5 | 14.4 | 37.3 | 20.0 | 0.7                    | 27.5 | 0.0     | 0.0            | 0.7  | 27.5              | 27.5             |
| Czech Republic     | 425  | 38.5 | 13.1 | 35.3 | 13.1 | 0.0                    | 38.5 | 0.0     | 0.0            | 0.0  | 36.2              | 40.8             |
| England            | 360  | 19.4 | 16.8 | 31.2 | 28.4 | 4.2                    | 19.4 | 0.0     | 3.9            | 0.2  | 16.0              | 22.4             |
| Finland            | 357  | 21.6 | 15.2 | 44.5 | 18.0 | 0.7                    | 21.6 | 0.0     | 0.0            | 0.7  | 20.3              | 23.0             |
| Hong Kong, SAR     | 638  | 40.7 | 17.5 | 22.1 | 19.2 | 0.6                    | 40.7 | 0.0     | 0.1            | 0.5  | 37.1              | 44.0             |
| Hungary            | 397  | 34.3 | 12.6 | 36.4 | 15.0 | 1.6                    | 34.3 | 0.3     | 0.0            | 1.3  | 33.1              | 35.6             |
| Indonesia          | 734  | 29.9 | 14.1 | 42.0 | 13.8 | 0.2                    | 29.9 | 0.0     | 0.0            | 0.2  | 30.2              | 29.6             |
| Iran, Islamic Rep. | 666  | 12.8 | 18.7 | 51.1 | 16.5 | 0.8                    | 12.8 | 0.0     | 0.0            | 0.8  | 9.4               | 15.1             |
| Israel             | 525  | 21.1 | 15.8 | 37.8 | 22.1 | 3.2                    | 21.1 | 0.0     | 1.8            | 1.4  | 18.9              | 23.5             |
| Italy              | 416  | 27.0 | 15.7 | 40.1 | 15.5 | 1.6                    | 27.0 | 0.0     | 0.0            | 1.6  | 22.6              | 31.3             |
| Japan              | 601  | 45.0 | 16.5 | 19.0 | 19.0 | 0.3                    | 45.0 | 0.0     | 0.3            | 0.0  | 40.5              | 49.7             |
| Jordan             | 634  | 31.6 | 17.2 | 35.5 | 14.4 | 1.3                    | 31.6 | 0.6     | 0.2            | 0.5  | 34.1              | 29.3             |
| Korea, Rep. of     | 765  | 53.4 | 10.1 | 25.1 | 11.4 | 0.0                    | 53.4 | 0.0     | 0.0            | 0.0  | 50.2              | 56.6             |
| Latvia (LSS)       | 353  | 22.8 | 12.3 | 50.7 | 10.8 | 3.4                    | 22.8 | 0.3     | 1.5            | 1.6  | 23.4              | 22.0             |
| Lithuania          | 299  | 22.6 | 12.8 | 48.2 | 14.8 | 1.6                    | 22.6 | 0.0     | 0.6            | 1.0  | 17.1              | 27.6             |
| Macedonia, Rep. of | 501  | 35.4 | 10.2 | 36.3 | 15.4 | 2.6                    | 35.4 | 0.0     | 1.0            | 1.5  | 35.2              | 35.7             |
| Malaysia           | 687  | 44.5 | 16.6 | 17.3 | 21.1 | 0.6                    | 44.5 | 0.0     | 0.0            | 0.6  | 43.1              | 46.1             |
| Moldova            | 466  | 28.8 | 13.4 | 38.0 | 16.2 | 3.6                    | 28.8 | 0.9     | 1.3            | 1.4  | 28.4              | 29.2             |
| Morocco            | 696  | 19.9 | 21.9 | 36.8 | 19.6 | 1.8                    | 19.9 | 0.1     | 0.3            | 1.4  | 19.5              | 20.2             |
| Netherlands        | 370  | 17.7 | 16.7 | 35.0 | 30.2 | 0.3                    | 17.7 | 0.0     | 0.1            | 0.2  | 16.2              | 19.2             |
| New Zealand        | 448  | 15.1 | 16.0 | 38.9 | 29.0 | 0.9                    | 15.1 | 0.0     | 0.2            | 0.8  | 11.7              | 18.5             |
| Philippines        | 815  | 35.4 | 18.9 | 29.0 | 15.4 | 1.4                    | 35.4 | 0.0     | 0.3            | 1.1  | 34.2              | 36.7             |
| Romania            | 425  | 36.5 | 13.7 | 38.1 | 10.2 | 1.4                    | 36.5 | 0.0     | 0.3            | 1.1  | 36.1              | 37.1             |
| Russian Federation | 541  | 39.8 | 10.5 | 35.3 | 12.8 | 1.6                    | 39.8 | 0.1     | 0.3            | 1.2  | 41.0              | 38.6             |
| Singapore          | 622  | 41.5 | 21.2 | 11.6 | 25.5 | 0.3                    | 41.5 | 0.0     | 0.1            | 0.2  | 36.6              | 46.6             |
| Slovak Republic    | 443  | 40.6 | 11.2 | 37.5 | 10.4 | 0.2                    | 40.6 | 0.0     | 0.0            | 0.2  | 37.2              | 43.7             |
| Slovenia           | 390  | 26.2 | 13.7 | 38.1 | 21.8 | 0.2                    | 26.2 | 0.2     | 0.0            | 0.0  | 26.1              | 26.3             |
| South Africa       | 1021 | 17.9 | 12.7 | 43.8 | 24.1 | 1.5                    | 17.9 | 0.3     | 0.1            | 1.1  | 17.7              | 18.1             |
| Thailand           | 725  | 20.2 | 12.4 | 42.2 | 25.1 | 0.2                    | 20.2 | 0.0     | 0.2            | 0.0  | 20.5              | 19.8             |
| Tunisia            | 618  | 5.9  | 10.3 | 72.5 | 7.1  | 4.3                    | 5.9  | 2.5     | 0.5            | 1.3  | 5.2               | 6.7              |
| Turkey             | 980  | 12.9 | 16.4 | 38.3 | 31.2 | 1.3                    | 12.9 | 0.1     | 0.1            | 1.1  | 11.1              | 14.3             |
| United States      | 1088 | 22.0 | 18.9 | 37.0 | 21.3 | 0.7                    | 22.0 | 0.2     | 0.1            | 0.5  | 16.0              | 27.9             |
| International Avg. | .    | 28.3 | 14.9 | 36.7 | 18.7 | 1.3                    | 28.3 | 0.2     | 0.4            | 0.8  | 26.8              | 29.9             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Scientific Inquiry and the Nature of Science  
 Label: Extrapolation of distance/time graph ( S022041 - 013 )  
 Item Type = MC Key = D

| COUNTRY            | N    | A    | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 518  | 3.1  | 3.5  | 9.0  | 83.8 | 0.6                    | 83.8 | 0.2     | 0.3            | 0.0  | 82.9              | 84.7             |
| Belgium (Flemish)  | 664  | 2.9  | 1.1  | 4.9  | 91.0 | 0.1                    | 91.0 | 0.0     | 0.0            | 0.1  | 89.1              | 92.9             |
| Bulgaria           | 411  | 8.0  | 7.7  | 11.2 | 70.6 | 2.6                    | 70.6 | 0.0     | 1.0            | 1.6  | 75.3              | 65.7             |
| Canada             | 1079 | 2.3  | 2.5  | 6.4  | 88.4 | 0.3                    | 88.4 | 0.0     | 0.2            | 0.1  | 87.8              | 89.5             |
| Chile              | 745  | 7.5  | 10.0 | 17.4 | 63.7 | 1.4                    | 63.7 | 0.0     | 0.6            | 0.8  | 59.2              | 68.2             |
| Chinese Taipei     | 711  | 5.1  | 1.0  | 9.8  | 84.0 | 0.1                    | 84.0 | 0.0     | 0.0            | 0.1  | 83.9              | 84.1             |
| Cyprus             | 382  | 8.3  | 7.7  | 15.2 | 68.1 | 0.7                    | 68.1 | 0.3     | 0.0            | 0.4  | 67.4              | 68.9             |
| Czech Republic     | 425  | 1.6  | 3.3  | 6.6  | 88.0 | 0.5                    | 88.0 | 0.0     | 0.0            | 0.5  | 88.6              | 87.5             |
| England            | 360  | 3.1  | 2.9  | 6.0  | 84.0 | 3.9                    | 84.0 | 0.0     | 3.9            | 0.0  | 83.8              | 84.1             |
| Finland            | 357  | 2.2  | 1.8  | 7.5  | 88.3 | 0.3                    | 88.3 | 0.0     | 0.0            | 0.3  | 84.6              | 92.5             |
| Hong Kong, SAR     | 638  | 4.1  | 1.0  | 7.0  | 87.7 | 0.3                    | 87.7 | 0.0     | 0.1            | 0.2  | 86.1              | 89.2             |
| Hungary            | 397  | 3.5  | 1.8  | 6.8  | 86.8 | 1.1                    | 86.8 | 0.0     | 0.0            | 1.1  | 86.4              | 87.7             |
| Indonesia          | 735  | 12.1 | 10.3 | 17.7 | 59.5 | 0.5                    | 59.5 | 0.2     | 0.0            | 0.3  | 57.9              | 61.2             |
| Iran, Islamic Rep. | 666  | 9.3  | 10.3 | 15.1 | 65.0 | 0.2                    | 65.0 | 0.0     | 0.0            | 0.2  | 60.8              | 67.7             |
| Israel             | 525  | 6.7  | 6.8  | 14.7 | 69.2 | 2.6                    | 69.2 | 0.0     | 2.2            | 0.4  | 70.6              | 67.8             |
| Italy              | 416  | 3.9  | 5.6  | 8.7  | 81.6 | 0.2                    | 81.6 | 0.0     | 0.0            | 0.2  | 82.1              | 81.1             |
| Japan              | 601  | 2.0  | 1.1  | 4.3  | 92.2 | 0.3                    | 92.2 | 0.0     | 0.3            | 0.0  | 89.9              | 94.4             |
| Jordan             | 639  | 10.3 | 12.7 | 15.9 | 60.8 | 0.3                    | 60.8 | 0.0     | 0.2            | 0.2  | 57.4              | 63.9             |
| Korea, Rep. of     | 765  | 1.7  | 1.4  | 3.9  | 92.9 | 0.1                    | 92.9 | 0.1     | 0.0            | 0.0  | 92.1              | 93.6             |
| Latvia (LSS)       | 353  | 5.4  | 2.0  | 7.1  | 83.6 | 1.8                    | 83.6 | 0.1     | 1.5            | 0.2  | 82.0              | 85.6             |
| Lithuania          | 299  | 5.5  | 1.5  | 11.0 | 81.1 | 0.8                    | 81.1 | 0.0     | 0.6            | 0.3  | 82.8              | 79.6             |
| Macedonia, Rep. of | 501  | 6.4  | 11.3 | 16.3 | 62.4 | 3.5                    | 62.4 | 0.2     | 1.0            | 2.2  | 62.0              | 62.8             |
| Malaysia           | 687  | 1.8  | 1.7  | 5.6  | 90.3 | 0.6                    | 90.3 | 0.1     | 0.0            | 0.4  | 89.6              | 91.2             |
| Moldova            | 466  | 11.4 | 7.7  | 16.4 | 62.0 | 2.4                    | 62.0 | 0.0     | 1.3            | 1.1  | 61.0              | 63.0             |
| Morocco            | 696  | 21.5 | 14.0 | 23.6 | 40.7 | 0.3                    | 40.7 | 0.0     | 0.3            | 0.0  | 39.6              | 41.3             |
| Netherlands        | 370  | 2.3  | 0.5  | 2.7  | 94.3 | 0.3                    | 94.3 | 0.0     | 0.1            | 0.2  | 90.5              | 97.7             |
| New Zealand        | 448  | 2.0  | 2.4  | 8.7  | 86.1 | 0.9                    | 86.1 | 0.0     | 0.2            | 0.7  | 86.9              | 85.3             |
| Philippines        | 815  | 17.3 | 21.7 | 15.5 | 44.3 | 1.2                    | 44.3 | 0.0     | 0.3            | 0.9  | 42.6              | 46.2             |
| Romania            | 425  | 9.5  | 8.4  | 13.8 | 66.4 | 1.9                    | 66.4 | 0.4     | 0.3            | 1.2  | 66.4              | 66.5             |
| Russian Federation | 541  | 2.8  | 3.8  | 8.7  | 84.4 | 0.3                    | 84.4 | 0.0     | 0.3            | 0.0  | 85.3              | 83.5             |
| Singapore          | 622  | 3.0  | 1.0  | 5.4  | 90.4 | 0.2                    | 90.4 | 0.0     | 0.1            | 0.1  | 88.9              | 92.0             |
| Slovak Republic    | 443  | 3.1  | 2.8  | 9.3  | 84.1 | 0.7                    | 84.1 | 0.0     | 0.0            | 0.7  | 80.0              | 87.7             |
| Slovenia           | 390  | 3.2  | 2.2  | 8.3  | 86.4 | 0.0                    | 86.4 | 0.0     | 0.0            | 0.0  | 82.7              | 90.4             |
| South Africa       | 1021 | 15.6 | 20.5 | 29.3 | 34.0 | 0.5                    | 34.0 | 0.0     | 0.4            | 0.1  | 32.4              | 36.0             |
| Thailand           | 725  | 6.6  | 3.9  | 11.6 | 77.6 | 0.3                    | 77.6 | 0.0     | 0.2            | 0.1  | 75.7              | 80.1             |
| Tunisia            | 629  | 9.2  | 8.3  | 13.1 | 68.3 | 1.1                    | 68.3 | 0.2     | 0.6            | 0.3  | 59.8              | 77.5             |
| Turkey             | 980  | 8.7  | 11.9 | 17.7 | 60.6 | 1.1                    | 60.6 | 0.1     | 0.1            | 0.9  | 56.2              | 64.0             |
| United States      | 1088 | 3.5  | 4.7  | 9.7  | 81.8 | 0.3                    | 81.8 | 0.0     | 0.1            | 0.2  | 81.6              | 82.0             |
| International Avg. | .    | 6.2  | 5.9  | 11.1 | 75.9 | 0.9                    | 75.9 | 0.1     | 0.4            | 0.4  | 74.5              | 77.3             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Earth Science  
 Label: Appearance of Jupiter and Moon ( S022283 - 014 )  
 Item Type = SA Key = X

| COUNTRY            | N    | NOT REACH |      |     |      |     |      |      |      | 1.GIRL |      | 2.BOY   |         |
|--------------------|------|-----------|------|-----|------|-----|------|------|------|--------|------|---------|---------|
|                    |      | 10        | 11   | 19  | 70   | 71  | 79   | 99   | V1   | ED     | OMIT | % Right | % Right |
| Australia          | 518  | 63.1      | 20.7 | 2.0 | 1.4  | 0.7 | 7.7  | 4.5  | 85.8 | 0.3    | 4.2  | 85.1    | 86.4    |
| Belgium (Flemish)  | 664  | 68.8      | 10.6 | 1.3 | 3.5  | 0.4 | 13.3 | 2.1  | 80.7 | 0.0    | 2.1  | 81.9    | 79.5    |
| Bulgaria           | 411  | 59.1      | 2.6  | 1.7 | 8.1  | 3.3 | 9.5  | 15.8 | 63.4 | 1.3    | 14.5 | 61.7    | 65.1    |
| Canada             | 1079 | 56.1      | 26.8 | 2.7 | 4.7  | 0.5 | 7.2  | 1.9  | 85.6 | 0.2    | 1.7  | 87.0    | 84.2    |
| Chile              | 745  | 28.6      | 28.7 | 5.3 | 14.0 | 0.1 | 10.6 | 12.7 | 62.6 | 0.6    | 12.1 | 58.6    | 66.6    |
| Chinese Taipei     | 711  | 70.3      | 4.8  | 2.7 | 6.9  | 0.3 | 10.5 | 4.4  | 77.8 | 0.0    | 4.4  | 74.3    | 81.1    |
| Cyprus             | 381  | 39.7      | 10.6 | 6.8 | 9.9  | 1.0 | 15.3 | 16.8 | 57.0 | 0.0    | 16.8 | 51.4    | 62.3    |
| Czech Republic     | 425  | 62.3      | 8.8  | 1.1 | 15.1 | 0.5 | 7.9  | 4.4  | 72.3 | 0.0    | 4.4  | 68.6    | 75.8    |
| England            | 360  | 58.5      | 20.2 | 6.6 | 0.7  | 0.3 | 7.3  | 6.4  | 85.3 | 3.9    | 2.5  | 84.0    | 86.4    |
| Finland            | 357  | 73.7      | 16.1 | 0.0 | 0.4  | 0.8 | 7.4  | 1.4  | 89.8 | 0.0    | 1.4  | 88.8    | 91.0    |
| Hong Kong, SAR     | 638  | 66.6      | 10.1 | 1.2 | 8.2  | 0.0 | 9.1  | 4.7  | 78.0 | 0.1    | 4.6  | 77.6    | 78.3    |
| Hungary            | 397  | 55.6      | 21.0 | 1.0 | 11.5 | 0.0 | 5.4  | 5.4  | 77.6 | 0.0    | 5.4  | 78.8    | 76.9    |
| Indonesia          | 734  | 53.4      | 10.9 | 0.5 | 3.8  | 0.3 | 29.8 | 1.4  | 64.8 | 0.0    | 1.3  | 61.6    | 68.1    |
| Iran, Islamic Rep. | 666  | 45.3      | 19.7 | 4.1 | 5.8  | 1.0 | 16.2 | 8.0  | 69.1 | 0.0    | 8.0  | 65.6    | 71.3    |
| Israel             | 525  | 36.2      | 26.5 | 1.2 | 7.5  | 0.3 | 10.8 | 17.5 | 63.9 | 2.2    | 15.4 | 68.0    | 59.4    |
| Italy              | 416  | 54.9      | 23.3 | 1.6 | 7.9  | 0.3 | 7.3  | 4.6  | 79.8 | 0.0    | 4.6  | 78.7    | 80.9    |
| Japan              | 601  | 80.6      | 6.0  | 0.2 | 4.1  | 1.0 | 5.0  | 3.1  | 86.9 | 0.3    | 2.7  | 85.8    | 88.0    |
| Jordan             | 639  | 22.9      | 39.9 | 1.2 | 10.0 | 1.7 | 19.3 | 4.9  | 64.1 | 0.2    | 4.7  | 63.6    | 64.5    |
| Korea, Rep. of     | 764  | 71.2      | 9.6  | 0.6 | 2.4  | 2.4 | 9.5  | 4.4  | 81.4 | 0.0    | 4.4  | 75.7    | 86.9    |
| Latvia (LSS)       | 353  | 56.0      | 10.2 | 1.8 | 13.4 | 2.3 | 5.1  | 11.4 | 67.9 | 1.5    | 9.9  | 68.1    | 67.6    |
| Lithuania          | 299  | 27.2      | 38.1 | 2.8 | 6.5  | 0.0 | 16.7 | 8.8  | 68.1 | 0.6    | 8.2  | 61.6    | 73.9    |
| Macedonia, Rep. of | 501  | 31.1      | 10.5 | 6.0 | 9.0  | 0.9 | 15.8 | 26.7 | 47.6 | 1.6    | 25.1 | 47.8    | 47.4    |
| Malaysia           | 687  | 34.4      | 32.3 | 1.2 | 4.1  | 0.3 | 19.6 | 8.1  | 67.9 | 0.0    | 8.1  | 61.9    | 75.0    |
| Moldova            | 466  | 52.0      | 13.1 | 0.4 | 13.5 | 0.6 | 9.7  | 10.6 | 65.5 | 1.5    | 9.1  | 65.5    | 65.5    |
| Morocco            | 696  | 13.8      | 5.2  | 9.0 | 13.1 | 0.2 | 42.8 | 15.9 | 28.0 | 0.3    | 15.6 | 25.9    | 29.3    |
| Netherlands        | 370  | 86.1      | 8.3  | 0.4 | 0.6  | 0.0 | 4.5  | 0.1  | 94.8 | 0.1    | 0.0  | 93.3    | 96.3    |
| New Zealand        | 447  | 55.9      | 28.1 | 0.8 | 2.5  | 0.0 | 9.1  | 3.6  | 84.8 | 0.2    | 3.4  | 87.4    | 82.3    |
| Philippines        | 815  | 9.4       | 21.0 | 0.7 | 2.6  | 1.3 | 44.1 | 20.9 | 31.1 | 0.3    | 20.6 | 32.0    | 30.2    |
| Romania            | 425  | 25.2      | 22.9 | 0.0 | 20.0 | 0.0 | 12.0 | 19.9 | 48.1 | 0.3    | 19.6 | 40.5    | 57.8    |
| Russian Federation | 541  | 70.3      | 9.5  | 3.2 | 0.3  | 1.2 | 6.3  | 9.2  | 83.0 | 0.3    | 8.8  | 80.4    | 85.7    |
| Singapore          | 622  | 48.9      | 31.3 | 3.6 | 1.9  | 0.5 | 10.9 | 2.9  | 83.8 | 0.2    | 2.7  | 77.4    | 90.4    |
| Slovak Republic    | 443  | 49.2      | 21.0 | 5.7 | 12.5 | 0.6 | 5.1  | 6.0  | 75.9 | 0.4    | 5.7  | 73.6    | 78.0    |
| Slovenia           | 390  | 62.6      | 11.7 | 1.2 | 8.1  | 1.4 | 8.3  | 6.8  | 75.4 | 0.0    | 6.8  | 80.5    | 69.9    |
| South Africa       | 1021 | 3.5       | 4.5  | 2.3 | 1.6  | 0.2 | 54.8 | 33.1 | 10.3 | 0.4    | 32.6 | 8.8     | 12.3    |
| Thailand           | 725  | 53.5      | 17.4 | 2.2 | 1.1  | 0.8 | 22.5 | 2.5  | 73.1 | 0.2    | 2.4  | 69.8    | 77.2    |
| Tunisia            | 629  | 27.3      | 17.4 | 9.0 | 14.9 | 5.7 | 17.8 | 7.8  | 53.7 | 0.6    | 7.2  | 53.4    | 54.2    |
| Turkey             | 980  | 30.0      | 17.5 | 1.1 | 17.4 | 0.4 | 13.0 | 20.7 | 48.6 | 0.1    | 20.6 | 44.7    | 51.6    |
| United States      | 1088 | 51.2      | 27.4 | 0.1 | 10.4 | 0.2 | 7.2  | 3.6  | 78.6 | 0.1    | 3.5  | 76.7    | 80.5    |
| International Avg. | .    | 48.8      | 17.5 | 2.5 | 7.3  | 0.8 | 14.1 | 9.0  | 68.7 | 0.5    | 8.6  | 67.0    | 70.5    |

V1 = % Scoring 1 or better V2 = % Scoring 2 or better V3 = % Scoring 3 or better  
 Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.  
 Because of missing gender information, some totals may appear inconsistent

Science: Chemistry  
 Label: Neutral atom gains electron ( S022202 - 015 )  
 Item Type = MC Key = B

| COUNTRY            | N    | A    | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 518  | 10.8 | 33.4 | 46.6 | 7.6  | 1.5                    | 33.4 | 0.2     | 1.0            | 0.4  | 26.8              | 39.9             |
| Belgium (Flemish)  | 664  | 18.3 | 23.2 | 49.4 | 6.5  | 2.6                    | 23.2 | 0.3     | 0.0            | 2.3  | 22.7              | 23.7             |
| Bulgaria           | 411  | 9.6  | 66.8 | 15.6 | 1.9  | 6.0                    | 66.8 | 0.3     | 1.7            | 4.0  | 69.5              | 64.0             |
| Canada             | 1079 | 10.3 | 28.2 | 52.1 | 7.8  | 1.6                    | 28.2 | 0.1     | 0.5            | 1.0  | 19.8              | 36.5             |
| Chile              | 745  | 17.5 | 25.1 | 45.7 | 8.6  | 3.1                    | 25.1 | 0.0     | 1.1            | 2.0  | 20.6              | 29.8             |
| Chinese Taipei     | 711  | 13.6 | 48.1 | 33.8 | 4.5  | 0.0                    | 48.1 | 0.0     | 0.0            | 0.0  | 47.2              | 49.0             |
| Cyprus             | 380  | 20.0 | 31.3 | 33.6 | 13.9 | 1.2                    | 31.3 | 0.3     | 0.0            | 0.9  | 25.5              | 36.9             |
| Czech Republic     | 425  | 2.0  | 72.8 | 23.0 | 2.2  | 0.0                    | 72.8 | 0.0     | 0.0            | 0.0  | 71.5              | 74.1             |
| England            | 360  | 13.9 | 29.1 | 44.5 | 8.2  | 4.2                    | 29.1 | 0.0     | 3.9            | 0.3  | 23.1              | 34.3             |
| Finland            | 357  | 11.9 | 47.1 | 38.9 | 2.1  | 0.0                    | 47.1 | 0.0     | 0.0            | 0.0  | 45.0              | 49.4             |
| Hong Kong, SAR     | 638  | 23.1 | 38.7 | 19.4 | 17.9 | 1.0                    | 38.7 | 0.2     | 0.3            | 0.5  | 34.7              | 42.6             |
| Hungary            | 397  | 2.7  | 73.7 | 21.4 | 1.3  | 0.8                    | 73.7 | 0.0     | 0.0            | 0.8  | 78.4              | 69.3             |
| Indonesia          | 735  | 25.5 | 17.3 | 44.9 | 10.5 | 1.8                    | 17.3 | 0.0     | 0.0            | 1.8  | 20.3              | 14.1             |
| Iran, Islamic Rep. | 666  | 25.8 | 51.0 | 17.1 | 5.1  | 1.1                    | 51.0 | 0.0     | 0.0            | 1.1  | 50.9              | 51.0             |
| Israel             | 525  | 13.0 | 52.1 | 21.3 | 8.0  | 5.6                    | 52.1 | 0.2     | 2.5            | 3.0  | 53.0              | 51.2             |
| Italy              | 416  | 8.4  | 50.3 | 34.9 | 4.0  | 2.5                    | 50.3 | 0.0     | 0.0            | 2.5  | 50.8              | 49.8             |
| Japan              | 601  | 11.1 | 40.7 | 36.5 | 11.2 | 0.5                    | 40.7 | 0.0     | 0.3            | 0.1  | 34.5              | 47.0             |
| Jordan             | 639  | 11.1 | 65.7 | 15.3 | 7.2  | 0.8                    | 65.7 | 0.2     | 0.2            | 0.4  | 73.3              | 58.8             |
| Korea, Rep. of     | 764  | 18.0 | 31.3 | 45.0 | 5.4  | 0.3                    | 31.3 | 0.1     | 0.0            | 0.1  | 28.9              | 33.7             |
| Latvia (LSS)       | 353  | 19.8 | 47.0 | 24.8 | 4.0  | 4.4                    | 47.0 | 0.0     | 1.7            | 2.7  | 44.7              | 50.0             |
| Lithuania          | 299  | 9.6  | 69.0 | 17.0 | 1.9  | 2.6                    | 69.0 | 0.0     | 0.6            | 2.0  | 70.3              | 67.8             |
| Macedonia, Rep. of | 501  | 12.6 | 55.0 | 23.3 | 4.5  | 4.6                    | 55.0 | 0.4     | 2.0            | 2.2  | 56.0              | 54.1             |
| Malaysia           | 687  | 18.8 | 23.5 | 48.0 | 8.2  | 1.4                    | 23.5 | 0.1     | 0.0            | 1.3  | 24.4              | 22.6             |
| Moldova            | 466  | 21.5 | 41.6 | 27.3 | 7.3  | 2.4                    | 41.6 | 0.0     | 1.8            | 0.6  | 44.6              | 38.2             |
| Morocco            | 696  | 34.5 | 34.0 | 9.2  | 19.3 | 3.0                    | 34.0 | 0.8     | 0.5            | 1.7  | 32.3              | 35.2             |
| Netherlands        | 370  | 27.7 | 21.4 | 42.9 | 7.3  | 0.7                    | 21.4 | 0.2     | 0.1            | 0.4  | 14.9              | 27.5             |
| New Zealand        | 447  | 14.4 | 21.5 | 50.6 | 12.6 | 0.8                    | 21.5 | 0.0     | 0.2            | 0.7  | 18.8              | 24.2             |
| Philippines        | 815  | 16.6 | 42.0 | 33.5 | 6.7  | 1.3                    | 42.0 | 0.0     | 0.4            | 0.9  | 44.7              | 38.9             |
| Romania            | 425  | 9.6  | 72.6 | 14.5 | 2.2  | 1.0                    | 72.6 | 0.2     | 0.3            | 0.5  | 73.9              | 70.9             |
| Russian Federation | 541  | 7.8  | 71.1 | 15.2 | 3.7  | 2.2                    | 71.1 | 0.1     | 0.4            | 1.6  | 76.2              | 65.6             |
| Singapore          | 622  | 6.2  | 40.7 | 41.3 | 10.8 | 1.0                    | 40.7 | 0.0     | 0.3            | 0.7  | 36.8              | 44.8             |
| Slovak Republic    | 443  | 4.6  | 74.1 | 19.3 | 0.8  | 1.2                    | 74.1 | 0.0     | 0.6            | 0.6  | 77.0              | 71.5             |
| Slovenia           | 390  | 10.7 | 66.8 | 18.6 | 2.6  | 1.3                    | 66.8 | 0.2     | 0.0            | 1.1  | 67.3              | 66.3             |
| South Africa       | 1021 | 34.9 | 18.3 | 19.9 | 25.2 | 1.7                    | 18.3 | 0.5     | 0.8            | 0.4  | 19.1              | 17.3             |
| Thailand           | 725  | 10.7 | 25.2 | 57.5 | 6.2  | 0.4                    | 25.2 | 0.0     | 0.2            | 0.3  | 24.8              | 25.8             |
| Tunisia            | 629  | 18.8 | 23.5 | 24.3 | 29.3 | 4.2                    | 23.5 | 1.3     | 0.9            | 2.0  | 22.5              | 24.5             |
| Turkey             | 980  | 15.6 | 39.3 | 37.0 | 6.8  | 1.2                    | 39.3 | 0.1     | 0.2            | 0.9  | 41.3              | 37.8             |
| United States      | 1088 | 10.9 | 41.8 | 41.5 | 5.4  | 0.4                    | 41.8 | 0.0     | 0.2            | 0.3  | 39.2              | 44.3             |
| International Avg. | .    | 15.0 | 43.5 | 31.7 | 7.9  | 1.9                    | 43.5 | 0.2     | 0.6            | 1.1  | 42.8              | 44.3             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Life Science  
 Label: Bodily process to prevent overheating ( S022152 - 016 )  
 Item Type = SA Key = X

| COUNTRY            | N    | NOT REACHED |      |     |     |      |     |      |      |      |      | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |      |
|--------------------|------|-------------|------|-----|-----|------|-----|------|------|------|------|------|-------------------|------------------|------|
|                    |      | 10          | 11   | 12  | 17  | 19   | 70  | 71   | 79   | 99   | V1   |      |                   |                  |      |
| Australia          | 518  | 6.1         | 62.1 | 0.3 | 0.0 | 0.3  | 1.3 | 1.5  | 17.8 | 10.5 | 68.8 | 1.0  | 9.5               | 67.0             | 70.5 |
| Belgium (Flemish)  | 664  | 6.5         | 55.2 | 0.6 | 0.0 | 1.1  | 0.0 | 3.6  | 21.4 | 11.7 | 63.3 | 0.2  | 11.5              | 61.9             | 64.7 |
| Bulgaria           | 411  | 37.5        | 17.1 | 0.0 | 0.0 | 7.0  | 0.5 | 1.7  | 9.5  | 26.7 | 61.6 | 1.7  | 24.9              | 61.0             | 62.3 |
| Canada             | 1079 | 7.5         | 64.4 | 0.5 | 0.0 | 0.2  | 1.1 | 3.1  | 15.6 | 7.5  | 72.7 | 0.6  | 6.9               | 76.0             | 69.9 |
| Chile              | 745  | 0.6         | 30.5 | 0.0 | 0.0 | 0.1  | 1.1 | 4.4  | 19.6 | 43.7 | 31.3 | 1.2  | 42.5              | 25.1             | 37.5 |
| Chinese Taipei     | 711  | 5.4         | 37.2 | 0.4 | 0.0 | 6.4  | 1.5 | 13.4 | 22.5 | 13.2 | 49.4 | 0.0  | 13.2              | 46.0             | 52.8 |
| Cyprus             | 381  | 3.2         | 20.3 | 1.1 | 0.0 | 5.0  | 0.3 | 7.3  | 22.1 | 40.7 | 29.7 | 0.0  | 40.7              | 35.7             | 24.0 |
| Czech Republic     | 425  | 13.6        | 42.5 | 0.1 | 0.0 | 1.2  | 1.4 | 9.4  | 17.2 | 14.7 | 57.3 | 0.0  | 14.7              | 55.0             | 59.7 |
| England            | 360  | 2.6         | 64.4 | 0.0 | 0.0 | 0.0  | 0.3 | 7.7  | 10.8 | 14.4 | 66.9 | 3.9  | 10.5              | 64.6             | 68.9 |
| Finland            | 357  | 1.3         | 33.8 | 0.0 | 0.0 | 0.4  | 3.8 | 4.4  | 35.2 | 21.1 | 35.5 | 0.0  | 21.1              | 34.4             | 36.8 |
| Hong Kong, SAR     | 637  | 2.6         | 45.9 | 1.6 | 0.0 | 1.9  | 2.1 | 4.4  | 22.3 | 19.2 | 52.0 | 0.3  | 18.9              | 46.3             | 57.3 |
| Hungary            | 397  | 18.4        | 39.2 | 0.5 | 0.0 | 0.3  | 0.5 | 0.8  | 13.9 | 26.5 | 58.3 | 0.3  | 26.2              | 54.7             | 61.9 |
| Indonesia          | 735  | 6.6         | 6.1  | 0.4 | 0.0 | 2.5  | 1.9 | 4.2  | 69.7 | 8.7  | 15.5 | 0.0  | 8.6               | 18.7             | 12.2 |
| Iran, Islamic Rep. | 666  | 2.2         | 28.0 | 0.1 | 0.0 | 1.3  | 0.9 | 10.9 | 27.7 | 28.9 | 31.6 | 0.0  | 28.9              | 24.3             | 36.3 |
| Israel             | 525  | 7.1         | 45.7 | 1.8 | 0.0 | 1.2  | 0.7 | 1.7  | 16.5 | 25.3 | 55.8 | 3.1  | 22.1              | 57.2             | 54.4 |
| Italy              | 416  | 3.2         | 48.1 | 0.7 | 0.0 | 2.6  | 0.0 | 6.3  | 12.8 | 26.5 | 54.4 | 0.2  | 26.2              | 52.0             | 56.8 |
| Japan              | 601  | 8.7         | 72.8 | 0.2 | 0.0 | 0.2  | 0.0 | 2.7  | 9.4  | 6.0  | 81.9 | 0.3  | 5.6               | 78.5             | 85.3 |
| Jordan             | 638  | 3.1         | 23.7 | 1.4 | 0.0 | 0.7  | 2.2 | 13.0 | 43.7 | 12.1 | 28.9 | 0.2  | 11.9              | 33.2             | 24.9 |
| Korea, Rep. of     | 764  | 5.5         | 81.1 | 0.4 | 0.0 | 0.1  | 0.0 | 0.3  | 7.3  | 5.3  | 87.2 | 0.0  | 5.3               | 85.6             | 88.7 |
| Latvia (LSS)       | 353  | 6.2         | 39.2 | 2.3 | 0.0 | 3.1  | 1.6 | 1.0  | 21.9 | 24.5 | 51.0 | 2.6  | 21.8              | 51.4             | 50.4 |
| Lithuania          | 299  | 11.0        | 40.7 | 3.9 | 0.0 | 0.0  | 0.0 | 0.0  | 19.0 | 25.4 | 55.6 | 0.6  | 24.8              | 51.0             | 59.8 |
| Macedonia, Rep. of | 501  | 15.0        | 9.6  | 1.3 | 0.0 | 2.8  | 0.0 | 4.3  | 18.1 | 48.8 | 28.7 | 2.0  | 46.8              | 31.0             | 26.5 |
| Malaysia           | 687  | 6.1         | 37.3 | 0.2 | 0.0 | 0.4  | 2.2 | 2.9  | 29.8 | 21.2 | 44.0 | 0.2  | 21.0              | 46.0             | 41.5 |
| Moldova            | 466  | 12.5        | 20.2 | 7.9 | 0.0 | 7.2  | 0.3 | 1.4  | 17.8 | 32.7 | 47.7 | 1.8  | 30.9              | 51.1             | 44.0 |
| Morocco            | 696  | 2.6         | 8.3  | 3.4 | 0.0 | 3.1  | 1.2 | 1.1  | 47.6 | 32.9 | 17.2 | 0.8  | 32.1              | 17.1             | 17.4 |
| Netherlands        | 370  | 1.9         | 46.9 | 0.2 | 0.0 | 0.0  | 0.3 | 1.2  | 45.0 | 4.4  | 49.0 | 0.1  | 4.3               | 46.4             | 51.6 |
| New Zealand        | 448  | 2.3         | 63.3 | 1.4 | 2.0 | 0.4  | 2.7 | 3.3  | 17.0 | 7.7  | 69.3 | 0.2  | 7.5               | 68.7             | 69.9 |
| Philippines        | 815  | 6.3         | 6.1  | 0.3 | 0.0 | 0.7  | 0.9 | 4.4  | 51.4 | 29.9 | 13.4 | 0.4  | 29.5              | 14.6             | 11.9 |
| Romania            | 425  | 5.7         | 28.7 | 0.2 | 0.0 | 0.0  | 0.3 | 4.0  | 24.3 | 36.7 | 34.6 | 0.3  | 36.4              | 33.1             | 36.6 |
| Russian Federation | 541  | 9.9         | 41.3 | 3.7 | 0.0 | 5.0  | 0.3 | 1.7  | 15.5 | 22.6 | 59.9 | 0.6  | 21.9              | 57.4             | 62.5 |
| Singapore          | 622  | 3.8         | 46.5 | 0.2 | 0.0 | 0.8  | 0.6 | 5.6  | 33.5 | 9.0  | 51.3 | 0.3  | 8.7               | 48.1             | 54.6 |
| Slovak Republic    | 443  | 7.4         | 34.1 | 0.6 | 0.0 | 2.6  | 1.9 | 7.8  | 20.2 | 25.4 | 44.6 | 0.6  | 24.7              | 33.5             | 54.6 |
| Slovenia           | 390  | 5.6         | 49.4 | 0.4 | 0.0 | 0.7  | 0.7 | 6.4  | 13.6 | 23.2 | 56.1 | 0.0  | 23.2              | 56.8             | 55.3 |
| South Africa       | 1021 | 0.5         | 6.6  | 0.4 | 0.0 | 0.3  | 0.3 | 2.0  | 57.9 | 31.9 | 7.8  | 0.9  | 31.0              | 7.2              | 8.5  |
| Thailand           | 725  | 8.2         | 34.2 | 0.8 | 0.0 | 12.8 | 0.5 | 3.4  | 31.3 | 8.6  | 56.1 | 0.3  | 8.3               | 58.0             | 53.6 |
| Tunisia            | 628  | 1.6         | 16.4 | 5.0 | 0.0 | 3.1  | 4.0 | 16.9 | 29.7 | 23.3 | 26.1 | 0.9  | 22.4              | 24.1             | 28.3 |
| Turkey             | 980  | 6.8         | 15.9 | 0.3 | 0.0 | 0.6  | 5.8 | 7.8  | 32.1 | 30.7 | 23.6 | 0.2  | 30.5              | 19.7             | 26.6 |
| United States      | 1088 | 2.6         | 64.5 | 0.1 | 0.0 | 0.1  | 2.3 | 3.9  | 18.0 | 8.7  | 67.2 | 0.3  | 8.4               | 65.1             | 69.2 |
| International Avg. | .    | 6.8         | 37.6 | 1.1 | 0.1 | 2.0  | 1.2 | 4.7  | 25.2 | 21.3 | 47.5 | 0.7  | 20.6              | 46.3             | 48.6 |

V1 = % Scoring 1 or better V2 = % Scoring 2 or better V3 = % Scoring 3 or better  
 Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.  
 Because of missing gender information, some totals may appear inconsistent

Science: Life Science  
 Label: Transmission of cold in classroom ( S022154 - O17 )  
 Item Type = SA Key = X

| COUNTRY            | N    | NOT REACHED |      |      |      |      |      |      |      |      | 1.GIRL |      | 2.BOY   |         |
|--------------------|------|-------------|------|------|------|------|------|------|------|------|--------|------|---------|---------|
|                    |      | 10          | 11   | 12   | 19   | 70   | 71   | 79   | 99   | V1   | ED     | OMIT | % Right | % Right |
| Australia          | 518  | 12.2        | 26.0 | 13.5 | 2.3  | 30.3 | 2.6  | 8.3  | 4.7  | 54.0 | 2.6    | 2.1  | 63.4    | 45.0    |
| Belgium (Flemish)  | 664  | 22.5        | 40.9 | 7.6  | 0.4  | 22.0 | 1.0  | 3.9  | 1.8  | 71.3 | 0.6    | 1.1  | 70.4    | 72.2    |
| Bulgaria           | 411  | 11.8        | 27.6 | 27.4 | 8.2  | 3.1  | 2.2  | 3.0  | 16.7 | 75.0 | 8.4    | 8.3  | 78.0    | 71.8    |
| Canada             | 1079 | 17.9        | 28.5 | 19.2 | 1.1  | 22.3 | 2.0  | 5.6  | 3.4  | 66.7 | 0.8    | 2.6  | 71.5    | 62.4    |
| Chile              | 745  | 21.5        | 25.7 | 9.6  | 3.0  | 16.4 | 5.9  | 5.7  | 12.3 | 59.7 | 7.2    | 5.0  | 65.1    | 54.3    |
| Chinese Taipei     | 711  | 13.5        | 67.0 | 4.2  | 2.7  | 5.6  | 1.0  | 3.2  | 2.8  | 87.4 | 1.5    | 1.3  | 93.4    | 81.6    |
| Cyprus             | 382  | 18.6        | 10.7 | 7.5  | 7.5  | 26.1 | 6.8  | 9.3  | 13.6 | 44.3 | 3.5    | 10.1 | 51.0    | 37.9    |
| Czech Republic     | 425  | 9.5         | 61.4 | 8.7  | 0.8  | 11.6 | 2.8  | 4.3  | 0.9  | 80.4 | 0.2    | 0.7  | 86.8    | 74.1    |
| England            | 360  | 21.4        | 21.6 | 12.4 | 0.0  | 29.1 | 5.0  | 4.9  | 5.7  | 55.4 | 3.9    | 1.8  | 61.8    | 49.9    |
| Finland            | 357  | 9.0         | 41.9 | 12.9 | 3.6  | 24.0 | 3.4  | 3.4  | 1.9  | 67.3 | 0.0    | 1.9  | 77.0    | 56.1    |
| Hong Kong, SAR     | 637  | 15.0        | 49.9 | 5.8  | 8.0  | 7.9  | 1.8  | 5.0  | 6.5  | 78.8 | 1.8    | 4.7  | 82.7    | 75.0    |
| Hungary            | 397  | 19.1        | 46.0 | 10.1 | 1.5  | 12.2 | 3.3  | 3.2  | 4.5  | 76.8 | 0.8    | 3.7  | 84.0    | 70.6    |
| Indonesia          | 735  | 11.6        | 13.5 | 11.5 | 11.4 | 15.6 | 10.2 | 23.8 | 2.4  | 48.0 | 0.7    | 1.7  | 51.2    | 44.6    |
| Iran, Islamic Rep. | 666  | 25.5        | 14.2 | 14.9 | 11.9 | 13.4 | 7.3  | 7.1  | 5.8  | 66.5 | 1.0    | 4.8  | 66.2    | 66.7    |
| Israel             | 525  | 14.6        | 26.0 | 7.5  | 2.9  | 23.6 | 5.4  | 5.8  | 14.3 | 51.0 | 9.2    | 5.1  | 58.5    | 42.8    |
| Italy              | 416  | 11.6        | 44.0 | 7.8  | 2.1  | 15.0 | 1.1  | 9.3  | 9.1  | 65.5 | 2.8    | 6.3  | 67.5    | 63.5    |
| Japan              | 601  | 11.1        | 45.8 | 0.4  | 0.9  | 28.5 | 2.5  | 5.7  | 5.1  | 58.3 | 1.4    | 3.7  | 61.8    | 54.7    |
| Jordan             | 638  | 9.6         | 15.4 | 19.2 | 1.3  | 22.7 | 7.1  | 16.4 | 8.4  | 45.4 | 2.2    | 6.2  | 56.5    | 35.2    |
| Korea, Rep. of     | 764  | 20.1        | 30.5 | 14.8 | 0.4  | 13.2 | 3.2  | 14.0 | 3.7  | 65.8 | 0.4    | 3.4  | 71.1    | 60.7    |
| Latvia (LSS)       | 353  | 18.7        | 26.8 | 7.0  | 5.7  | 22.2 | 2.0  | 5.1  | 12.5 | 58.2 | 4.0    | 8.5  | 59.2    | 57.0    |
| Lithuania          | 299  | 2.3         | 45.7 | 27.4 | 0.3  | 3.5  | 3.4  | 11.0 | 6.4  | 75.7 | 1.4    | 5.0  | 75.3    | 76.1    |
| Macedonia, Rep. of | 501  | 14.4        | 21.9 | 10.8 | 6.4  | 3.4  | 8.2  | 9.2  | 25.7 | 53.5 | 11.3   | 14.4 | 60.3    | 46.9    |
| Malaysia           | 687  | 14.8        | 19.5 | 8.1  | 1.6  | 26.2 | 2.7  | 16.2 | 10.9 | 44.0 | 2.3    | 8.6  | 46.7    | 40.8    |
| Moldova            | 466  | 14.7        | 18.9 | 26.7 | 1.4  | 9.1  | 5.7  | 7.9  | 15.6 | 61.8 | 8.0    | 7.6  | 65.7    | 57.3    |
| Morocco            | 696  | 5.4         | 2.8  | 12.8 | 10.1 | 27.5 | 1.0  | 26.6 | 13.9 | 31.1 | 6.2    | 7.8  | 27.4    | 33.6    |
| Netherlands        | 370  | 8.7         | 46.4 | 8.1  | 0.4  | 23.6 | 0.4  | 9.2  | 3.3  | 63.5 | 0.1    | 3.2  | 72.5    | 55.1    |
| New Zealand        | 448  | 7.3         | 25.4 | 12.6 | 0.0  | 37.5 | 2.8  | 9.8  | 4.6  | 45.3 | 1.0    | 3.5  | 53.9    | 36.9    |
| Philippines        | 815  | 6.1         | 7.1  | 6.0  | 6.6  | 3.0  | 1.4  | 42.6 | 27.2 | 25.8 | 5.5    | 21.6 | 30.8    | 20.2    |
| Romania            | 424  | 13.7        | 25.2 | 4.9  | 2.6  | 20.4 | 4.1  | 13.9 | 15.1 | 46.4 | 5.5    | 9.6  | 54.2    | 36.4    |
| Russian Federation | 541  | 10.7        | 28.0 | 7.4  | 3.0  | 31.1 | 4.6  | 3.5  | 11.7 | 49.1 | 4.1    | 7.6  | 54.9    | 43.1    |
| Singapore          | 622  | 24.4        | 47.1 | 3.5  | 1.2  | 15.3 | 1.4  | 4.4  | 2.7  | 76.2 | 0.8    | 1.8  | 80.0    | 72.3    |
| Slovak Republic    | 442  | 9.2         | 46.5 | 11.0 | 8.9  | 4.2  | 3.7  | 7.3  | 9.3  | 75.4 | 1.0    | 8.3  | 77.5    | 73.5    |
| Slovenia           | 390  | 8.1         | 62.9 | 4.8  | 0.2  | 13.0 | 2.6  | 3.3  | 5.1  | 76.0 | 0.0    | 5.1  | 80.2    | 71.4    |
| South Africa       | 1021 | 2.6         | 2.9  | 4.8  | 0.3  | 7.4  | 2.2  | 50.6 | 29.2 | 10.7 | 5.0    | 24.2 | 11.7    | 9.4     |
| Thailand           | 725  | 9.6         | 48.4 | 8.0  | 6.3  | 10.3 | 6.3  | 7.1  | 4.0  | 72.3 | 2.2    | 1.8  | 78.8    | 64.0    |
| Tunisia            | 629  | 8.7         | 19.2 | 30.9 | 1.3  | 20.5 | 3.4  | 10.3 | 5.6  | 60.2 | 2.0    | 3.6  | 61.7    | 58.4    |
| Turkey             | 980  | 12.7        | 20.0 | 9.1  | 2.2  | 26.9 | 5.3  | 12.3 | 11.6 | 43.9 | 3.2    | 8.4  | 51.6    | 37.9    |
| United States      | 1088 | 15.9        | 24.6 | 14.8 | 0.5  | 33.2 | 2.9  | 3.7  | 4.5  | 55.8 | 1.5    | 2.9  | 62.2    | 49.5    |
| International Avg. | .    | 13.3        | 30.9 | 11.4 | 3.4  | 17.9 | 3.6  | 10.4 | 9.0  | 59.0 | 3.0    | 6.0  | 63.8    | 54.2    |

V1 = % Scoring 1 or better V2 = % Scoring 2 or better V3 = % Scoring 3 or better  
 Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.  
 Because of missing gender information, some totals may appear inconsistent

Science: Physics  
 Label: Determination of speed from graph ( S022280 - P01 )  
 Item Type = MC Key = D

| COUNTRY            | N    | A    | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 500  | 11.0 | 6.2  | 13.1 | 69.2 | 0.6                    | 69.2 | 0.0     | 0.0            | 0.6  | 66.8              | 71.9             |
| Belgium (Flemish)  | 657  | 3.5  | 8.1  | 10.2 | 77.7 | 0.5                    | 77.7 | 0.0     | 0.0            | 0.5  | 78.3              | 77.2             |
| Bulgaria           | 406  | 9.4  | 16.7 | 20.7 | 46.8 | 6.3                    | 46.8 | 0.3     | 1.7            | 4.3  | 44.8              | 48.7             |
| Canada             | 1084 | 9.2  | 8.1  | 14.0 | 68.1 | 0.6                    | 68.1 | 0.0     | 0.0            | 0.6  | 61.3              | 75.2             |
| Chile              | 735  | 12.4 | 8.5  | 39.8 | 37.2 | 2.1                    | 37.2 | 0.0     | 0.0            | 2.1  | 35.2              | 39.3             |
| Chinese Taipei     | 717  | 11.3 | 5.6  | 4.5  | 78.4 | 0.1                    | 78.4 | 0.0     | 0.0            | 0.1  | 74.7              | 82.2             |
| Cyprus             | 392  | 16.2 | 15.8 | 26.0 | 40.6 | 1.4                    | 40.6 | 0.0     | 0.0            | 1.4  | 40.9              | 40.2             |
| Czech Republic     | 424  | 4.2  | 10.3 | 16.4 | 66.4 | 2.7                    | 66.4 | 0.0     | 0.0            | 2.7  | 59.2              | 74.1             |
| England            | 362  | 18.1 | 11.5 | 12.4 | 55.5 | 2.4                    | 55.5 | 0.3     | 1.9            | 0.3  | 48.6              | 62.8             |
| Finland            | 370  | 4.4  | 4.9  | 16.1 | 71.0 | 3.6                    | 71.0 | 0.0     | 0.0            | 3.6  | 76.4              | 65.5             |
| Hong Kong, SAR     | 643  | 7.0  | 5.4  | 4.6  | 81.9 | 1.2                    | 81.9 | 0.2     | 0.5            | 0.5  | 82.9              | 80.8             |
| Hungary            | 394  | 14.7 | 9.2  | 16.9 | 59.1 | 0.2                    | 59.1 | 0.0     | 0.0            | 0.2  | 53.1              | 65.1             |
| Indonesia          | 724  | 22.8 | 10.0 | 37.2 | 29.5 | 0.5                    | 29.5 | 0.1     | 0.0            | 0.4  | 23.4              | 35.7             |
| Iran, Islamic Rep. | 660  | 11.5 | 15.9 | 41.4 | 29.7 | 1.4                    | 29.7 | 0.0     | 0.0            | 1.4  | 22.0              | 35.1             |
| Israel             | 526  | 14.0 | 12.9 | 21.6 | 49.3 | 2.2                    | 49.3 | 0.0     | 0.0            | 2.2  | 45.8              | 53.7             |
| Italy              | 415  | 11.3 | 10.5 | 28.3 | 47.4 | 2.6                    | 47.4 | 0.0     | 0.2            | 2.4  | 41.6              | 53.8             |
| Japan              | 585  | 15.8 | 12.3 | 10.6 | 60.5 | 0.8                    | 60.5 | 0.0     | 0.0            | 0.8  | 50.7              | 70.2             |
| Jordan             | 630  | 17.5 | 9.7  | 40.1 | 31.7 | 1.1                    | 31.7 | 0.2     | 0.1            | 0.8  | 25.4              | 37.2             |
| Korea, Rep. of     | 763  | 22.4 | 17.1 | 18.7 | 40.8 | 1.0                    | 40.8 | 0.0     | 0.0            | 1.0  | 30.0              | 51.5             |
| Latvia (LSS)       | 354  | 8.2  | 5.5  | 20.1 | 62.4 | 3.8                    | 62.4 | 0.0     | 0.9            | 2.9  | 68.7              | 56.9             |
| Lithuania          | 292  | 7.2  | 11.4 | 16.9 | 62.0 | 2.4                    | 62.0 | 0.0     | 0.0            | 2.4  | 62.7              | 61.3             |
| Macedonia, Rep. of | 506  | 10.5 | 13.7 | 29.1 | 43.5 | 3.2                    | 43.5 | 0.1     | 0.2            | 2.9  | 43.1              | 44.0             |
| Malaysia           | 702  | 10.0 | 4.7  | 13.2 | 71.4 | 0.6                    | 71.4 | 0.0     | 0.0            | 0.6  | 71.9              | 70.7             |
| Moldova            | 477  | 9.3  | 13.7 | 24.9 | 47.5 | 4.6                    | 47.5 | 0.7     | 0.0            | 3.9  | 43.5              | 51.4             |
| Morocco            | 650  | 8.7  | 8.8  | 25.5 | 34.3 | 22.7                   | 34.3 | 0.6     | 16.4           | 5.7  | 31.3              | 36.3             |
| Netherlands        | 365  | 12.7 | 2.3  | 9.1  | 75.3 | 0.6                    | 75.3 | 0.6     | 0.0            | 0.0  | 71.3              | 79.7             |
| New Zealand        | 435  | 12.2 | 7.3  | 19.5 | 59.6 | 1.3                    | 59.6 | 0.3     | 0.0            | 1.1  | 54.1              | 65.1             |
| Philippines        | 848  | 20.7 | 9.4  | 44.3 | 24.8 | 0.8                    | 24.8 | 0.0     | 0.2            | 0.5  | 21.9              | 28.2             |
| Romania            | 431  | 8.5  | 14.4 | 31.2 | 42.4 | 3.4                    | 42.4 | 0.3     | 0.4            | 2.7  | 39.9              | 45.2             |
| Russian Federation | 531  | 13.1 | 13.8 | 17.2 | 50.7 | 5.2                    | 50.7 | 0.5     | 0.7            | 4.1  | 45.5              | 56.5             |
| Singapore          | 624  | 6.4  | 5.4  | 9.0  | 77.5 | 1.8                    | 77.5 | 0.0     | 0.0            | 1.8  | 72.2              | 81.7             |
| Slovak Republic    | 436  | 7.5  | 7.9  | 14.5 | 68.9 | 1.3                    | 68.9 | 0.0     | 0.0            | 1.3  | 67.8              | 69.9             |
| Slovenia           | 389  | 10.0 | 8.3  | 21.5 | 57.0 | 3.2                    | 57.0 | 0.9     | 0.0            | 2.3  | 55.0              | 58.9             |
| South Africa       | 993  | 17.3 | 8.9  | 25.6 | 46.9 | 1.4                    | 46.9 | 0.4     | 0.7            | 0.3  | 47.5              | 46.2             |
| Thailand           | 711  | 7.2  | 4.0  | 23.3 | 65.4 | 0.0                    | 65.4 | 0.0     | 0.0            | 0.0  | 62.1              | 69.5             |
| Tunisia            | 629  | 10.5 | 9.8  | 29.6 | 48.6 | 1.6                    | 48.6 | 0.5     | 0.0            | 1.1  | 41.3              | 56.2             |
| Turkey             | 990  | 13.1 | 17.1 | 32.5 | 36.3 | 1.1                    | 36.3 | 0.0     | 0.0            | 1.1  | 35.3              | 37.1             |
| United States      | 1080 | 17.7 | 13.0 | 19.0 | 49.8 | 0.5                    | 49.8 | 0.0     | 0.1            | 0.4  | 42.3              | 57.2             |
| International Avg. | .    | 11.8 | 9.9  | 21.5 | 54.3 | 2.4                    | 54.3 | 0.2     | 0.6            | 1.6  | 51.0              | 57.7             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent



Science: Physics  
 Label: Amount of light on wall and ceiling ( S022043 - P02 )  
 Item Type = SA Key = X

| COUNTRY            | N    | 10   | 11   | 12  | 19  | 70   | 71   | 72   | 73   | 79   | 99   | V1   | NOT REACHED | OMIT | 1.GIRL % Right | 2.BOY % Right |
|--------------------|------|------|------|-----|-----|------|------|------|------|------|------|------|-------------|------|----------------|---------------|
| Australia          | 500  | 17.4 | 16.7 | 0.8 | 0.2 | 9.1  | 9.3  | 26.6 | 15.4 | 1.8  | 2.7  | 35.1 | 0.0         | 2.7  | 34.4           | 35.9          |
| Belgium (Flemish)  | 657  | 15.0 | 10.6 | 1.7 | 1.1 | 8.0  | 3.9  | 42.0 | 9.3  | 7.6  | 0.7  | 28.4 | 0.0         | 0.6  | 31.0           | 26.0          |
| Bulgaria           | 405  | 18.6 | 0.1  | 0.4 | 1.3 | 3.5  | 27.8 | 4.4  | 29.2 | 4.9  | 9.8  | 20.4 | 1.7         | 8.1  | 21.1           | 19.8          |
| Canada             | 1084 | 17.8 | 15.0 | 2.0 | 0.0 | 4.5  | 10.4 | 32.0 | 15.9 | 1.6  | 0.8  | 34.8 | 0.0         | 0.8  | 32.6           | 36.7          |
| Chile              | 735  | 5.3  | 6.8  | 0.3 | 0.0 | 10.2 | 15.9 | 21.3 | 37.0 | 1.3  | 1.8  | 12.4 | 0.0         | 1.8  | 8.4            | 16.2          |
| Chinese Taipei     | 717  | 13.5 | 37.5 | 0.1 | 0.7 | 0.8  | 24.1 | 12.7 | 10.1 | 0.5  | 0.0  | 51.8 | 0.0         | 0.0  | 52.7           | 50.8          |
| Cyprus             | 391  | 10.3 | 19.8 | 1.0 | 2.5 | 6.7  | 14.8 | 8.9  | 24.7 | 9.7  | 1.5  | 33.7 | 0.0         | 1.5  | 38.7           | 28.9          |
| Czech Republic     | 424  | 10.9 | 8.8  | 1.9 | 1.3 | 9.9  | 11.8 | 30.8 | 20.1 | 3.0  | 1.5  | 22.9 | 0.0         | 1.5  | 21.3           | 24.5          |
| England            | 362  | 12.5 | 16.0 | 0.9 | 0.0 | 8.0  | 7.9  | 29.4 | 20.3 | 2.0  | 3.0  | 29.4 | 1.9         | 1.2  | 26.8           | 32.2          |
| Finland            | 370  | 12.9 | 19.3 | 0.0 | 0.2 | 2.1  | 24.6 | 21.2 | 19.1 | 0.6  | 0.0  | 32.3 | 0.0         | 0.0  | 33.1           | 31.5          |
| Hong Kong, SAR     | 643  | 8.0  | 30.4 | 1.1 | 0.2 | 5.8  | 27.9 | 8.5  | 15.0 | 1.6  | 1.5  | 39.6 | 0.5         | 1.0  | 37.7           | 41.5          |
| Hungary            | 394  | 21.6 | 8.3  | 1.2 | 1.1 | 7.7  | 12.8 | 25.4 | 17.1 | 1.9  | 2.9  | 32.2 | 0.0         | 2.9  | 31.9           | 32.9          |
| Indonesia          | 724  | 3.9  | 5.7  | 3.8 | 0.3 | 7.0  | 11.7 | 46.9 | 18.3 | 1.1  | 1.4  | 13.7 | 0.0         | 1.4  | 12.9           | 14.5          |
| Iran, Islamic Rep. | 663  | 9.5  | 11.1 | 0.6 | 0.5 | 10.1 | 24.9 | 23.1 | 19.2 | 0.7  | 0.3  | 21.7 | 0.0         | 0.3  | 17.9           | 24.3          |
| Israel             | 526  | 20.2 | 13.4 | 0.8 | 1.2 | 6.5  | 15.5 | 13.6 | 18.0 | 5.4  | 5.5  | 35.5 | 0.0         | 5.5  | 33.3           | 38.4          |
| Italy              | 415  | 10.6 | 7.1  | 0.4 | 1.0 | 9.0  | 17.4 | 15.7 | 25.2 | 4.5  | 9.2  | 19.0 | 0.2         | 9.0  | 15.0           | 23.6          |
| Japan              | 585  | 10.1 | 7.0  | 1.7 | 0.0 | 24.9 | 10.1 | 25.4 | 18.8 | 0.3  | 1.7  | 18.8 | 0.0         | 1.7  | 13.5           | 24.0          |
| Jordan             | 630  | 6.6  | 2.1  | 1.6 | 0.2 | 22.1 | 21.7 | 10.0 | 28.1 | 5.3  | 2.3  | 10.5 | 0.1         | 2.2  | 11.5           | 9.6           |
| Korea, Rep. of     | 763  | 16.6 | 14.4 | 2.7 | 2.0 | 9.8  | 11.5 | 26.4 | 15.5 | 0.2  | 0.9  | 35.7 | 0.0         | 0.9  | 35.3           | 36.0          |
| Latvia (LSS)       | 355  | 17.1 | 10.3 | 1.0 | 1.2 | 3.8  | 12.2 | 33.3 | 16.3 | 1.7  | 3.1  | 29.6 | 0.9         | 2.2  | 32.4           | 27.2          |
| Lithuania          | 292  | 19.1 | 2.8  | 1.0 | 0.7 | 1.4  | 11.9 | 25.7 | 27.0 | 7.1  | 3.4  | 23.6 | 0.0         | 3.4  | 21.1           | 26.3          |
| Macedonia, Rep. of | 506  | 14.6 | 7.6  | 4.0 | 5.2 | 10.3 | 10.6 | 7.4  | 14.1 | 17.1 | 9.0  | 31.4 | 0.2         | 8.8  | 26.5           | 36.7          |
| Malaysia           | 702  | 3.2  | 3.9  | 1.0 | 0.1 | 21.6 | 26.0 | 13.6 | 23.5 | 4.6  | 2.5  | 8.3  | 0.0         | 2.5  | 9.4            | 7.0           |
| Moldova            | 477  | 16.5 | 0.7  | 1.9 | 0.9 | 1.6  | 12.0 | 31.6 | 28.5 | 1.6  | 4.8  | 19.9 | 0.0         | 4.8  | 16.6           | 23.2          |
| Morocco            | 649  | 0.8  | 0.0  | 0.4 | 0.6 | 0.5  | 23.5 | 1.2  | 36.5 | 6.1  | 30.5 | 1.8  | 17.5        | 12.9 | 2.1            | 1.6           |
| Netherlands        | 365  | 12.4 | 13.9 | 0.0 | 0.0 | 4.2  | 19.4 | 26.3 | 22.1 | 1.7  | 0.0  | 26.3 | 0.0         | 0.0  | 21.0           | 32.1          |
| New Zealand        | 435  | 16.9 | 10.5 | 1.5 | 0.6 | 6.0  | 13.1 | 28.9 | 19.1 | 1.8  | 1.6  | 29.5 | 0.0         | 1.6  | 30.1           | 28.9          |
| Philippines        | 848  | 1.7  | 0.5  | 0.2 | 0.1 | 5.0  | 29.4 | 15.1 | 41.9 | 1.9  | 4.1  | 2.5  | 0.2         | 3.8  | 2.3            | 2.7           |
| Romania            | 431  | 5.7  | 5.5  | 1.6 | 0.0 | 8.7  | 23.3 | 14.1 | 36.3 | 1.1  | 3.6  | 12.8 | 0.4         | 3.2  | 14.6           | 11.2          |
| Russian Federation | 531  | 11.7 | 4.2  | 0.4 | 3.3 | 5.1  | 16.1 | 23.8 | 31.5 | 1.4  | 2.4  | 19.6 | 0.7         | 1.8  | 22.3           | 16.6          |
| Singapore          | 624  | 15.2 | 16.8 | 1.5 | 0.5 | 8.0  | 19.9 | 18.9 | 17.3 | 1.0  | 1.1  | 33.9 | 0.0         | 1.1  | 32.7           | 34.9          |
| Slovak Republic    | 436  | 16.3 | 7.9  | 5.7 | 2.6 | 4.9  | 9.8  | 27.6 | 23.4 | 0.9  | 0.9  | 32.4 | 0.0         | 0.9  | 35.8           | 29.0          |
| Slovenia           | 389  | 11.4 | 12.1 | 0.7 | 0.4 | 8.9  | 16.9 | 24.9 | 22.1 | 1.5  | 1.2  | 24.7 | 0.0         | 1.2  | 24.7           | 24.7          |
| South Africa       | 993  | 0.9  | 1.1  | 0.7 | 0.4 | 3.4  | 25.7 | 11.1 | 49.2 | 3.8  | 3.6  | 3.1  | 0.7         | 2.9  | 3.2            | 3.0           |
| Thailand           | 711  | 8.7  | 10.6 | 2.1 | 1.0 | 5.4  | 15.7 | 22.6 | 30.0 | 1.6  | 2.2  | 22.4 | 0.0         | 2.2  | 21.0           | 24.2          |
| Tunisia            | 629  | 2.6  | 9.1  | 0.5 | 0.3 | 4.5  | 29.2 | 19.1 | 31.5 | 1.1  | 2.1  | 12.6 | 0.1         | 1.9  | 10.7           | 14.6          |
| Turkey             | 990  | 7.4  | 5.2  | 4.5 | 1.1 | 6.8  | 16.7 | 27.5 | 25.4 | 2.0  | 3.3  | 18.2 | 0.0         | 3.3  | 22.4           | 14.5          |
| United States      | 1080 | 15.9 | 15.3 | 0.2 | 0.0 | 7.6  | 10.8 | 22.6 | 25.4 | 0.4  | 1.7  | 31.5 | 0.1         | 1.6  | 29.8           | 33.0          |
| International Avg. | .    | 11.6 | 10.2 | 1.4 | 0.9 | 7.5  | 17.0 | 21.6 | 23.6 | 3.0  | 3.4  | 24.0 | 0.7         | 2.7  | 23.4           | 24.7          |

V1 = % Scoring 1 or better V2 = % Scoring 2 or better V3 = % Scoring 3 or better  
 Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.  
 Because of missing gender information, some totals may appear inconsistent

Science: Life Science  
 Label: Tree growth ( S022258 - P03 )  
 Item Type = SA Key = X

| COUNTRY            | N    | NOT REACH |      |      |     |      |      |      |      | 1.GIRL |      | 2.BOY   |         |
|--------------------|------|-----------|------|------|-----|------|------|------|------|--------|------|---------|---------|
|                    |      | 10        | 11   | 19   | 70  | 71   | 79   | 99   | V1   | ED     | OMIT | % Right | % Right |
| Australia          | 500  | 51.8      | 4.2  | 1.4  | 3.1 | 1.4  | 26.4 | 11.7 | 57.4 | 0.0    | 11.7 | 57.0    | 57.8    |
| Belgium (Flemish)  | 657  | 60.8      | 3.3  | 1.0  | 2.0 | 3.0  | 21.9 | 8.0  | 65.1 | 0.0    | 8.0  | 68.7    | 61.8    |
| Bulgaria           | 405  | 23.3      | 1.0  | 5.0  | 0.0 | 0.2  | 24.4 | 46.1 | 29.3 | 2.0    | 44.1 | 29.7    | 28.8    |
| Canada             | 1084 | 56.0      | 3.1  | 0.1  | 2.3 | 7.0  | 23.2 | 8.4  | 59.1 | 0.0    | 8.4  | 55.9    | 62.4    |
| Chile              | 735  | 27.7      | 1.8  | 0.6  | 1.9 | 1.4  | 30.6 | 36.0 | 30.2 | 0.0    | 36.0 | 29.9    | 30.5    |
| Chinese Taipei     | 717  | 44.5      | 1.8  | 7.0  | 2.1 | 2.1  | 33.8 | 8.7  | 53.3 | 0.0    | 8.7  | 49.0    | 57.6    |
| Cyprus             | 387  | 39.0      | 2.0  | 6.4  | 1.4 | 1.2  | 22.7 | 27.3 | 47.5 | 0.0    | 27.3 | 47.7    | 47.2    |
| Czech Republic     | 424  | 39.0      | 3.2  | 6.0  | 0.9 | 1.9  | 27.6 | 21.4 | 48.3 | 0.0    | 21.4 | 41.0    | 55.9    |
| England            | 362  | 52.4      | 0.8  | 1.4  | 1.5 | 5.5  | 22.5 | 15.9 | 54.6 | 1.9    | 14.0 | 47.7    | 61.8    |
| Finland            | 370  | 62.2      | 1.4  | 0.2  | 2.3 | 8.4  | 17.0 | 8.6  | 63.8 | 0.0    | 8.6  | 64.7    | 62.8    |
| Hong Kong, SAR     | 643  | 37.1      | 2.2  | 0.4  | 3.8 | 3.4  | 38.0 | 15.1 | 39.7 | 0.5    | 14.6 | 39.9    | 39.5    |
| Hungary            | 394  | 45.1      | 4.6  | 0.0  | 3.0 | 4.5  | 20.4 | 22.5 | 49.6 | 0.0    | 22.5 | 46.7    | 52.4    |
| Indonesia          | 724  | 19.5      | 3.5  | 0.0  | 2.0 | 1.9  | 66.0 | 7.1  | 23.0 | 0.0    | 7.1  | 20.6    | 25.4    |
| Iran, Islamic Rep. | 663  | 33.2      | 2.6  | 1.1  | 0.8 | 8.4  | 32.4 | 21.5 | 36.9 | 0.0    | 21.5 | 27.4    | 43.5    |
| Israel             | 526  | 32.8      | 1.4  | 3.6  | 1.9 | 1.8  | 26.7 | 31.8 | 37.8 | 0.0    | 31.8 | 34.6    | 41.8    |
| Italy              | 415  | 34.2      | 3.0  | 5.3  | 1.1 | 4.3  | 24.8 | 27.2 | 42.6 | 0.2    | 27.0 | 36.9    | 48.9    |
| Japan              | 585  | 52.1      | 4.3  | 0.2  | 3.2 | 4.6  | 20.0 | 15.6 | 56.6 | 0.0    | 15.6 | 55.7    | 57.4    |
| Jordan             | 630  | 21.1      | 1.5  | 1.5  | 1.9 | 1.3  | 55.5 | 17.2 | 24.1 | 0.1    | 17.1 | 21.4    | 26.5    |
| Korea, Rep. of     | 763  | 12.4      | 4.4  | 16.2 | 4.9 | 17.1 | 27.8 | 17.2 | 33.0 | 0.0    | 17.2 | 31.5    | 34.5    |
| Latvia (LSS)       | 355  | 29.8      | 11.5 | 0.3  | 7.4 | 9.0  | 21.4 | 20.6 | 41.6 | 1.2    | 19.4 | 38.0    | 44.8    |
| Lithuania          | 292  | 30.2      | 4.3  | 1.6  | 2.1 | 7.1  | 25.1 | 29.7 | 36.1 | 0.0    | 29.7 | 37.5    | 34.5    |
| Macedonia, Rep. of | 506  | 14.8      | 1.0  | 5.7  | 3.5 | 2.3  | 24.4 | 48.4 | 21.4 | 0.3    | 48.1 | 21.4    | 21.4    |
| Malaysia           | 702  | 29.9      | 2.0  | 1.3  | 2.7 | 5.7  | 38.4 | 20.1 | 33.2 | 0.0    | 20.1 | 31.0    | 35.8    |
| Moldova            | 477  | 38.9      | 7.0  | 7.3  | 2.0 | 1.8  | 14.2 | 28.8 | 53.2 | 0.0    | 28.8 | 53.9    | 52.5    |
| Morocco            | 647  | 0.6       | 0.8  | 0.4  | 0.7 | 0.6  | 31.7 | 65.3 | 1.8  | 19.5   | 45.8 | 1.6     | 1.9     |
| Netherlands        | 365  | 54.0      | 2.4  | 0.0  | 2.3 | 6.3  | 31.0 | 4.1  | 56.4 | 0.0    | 4.1  | 53.7    | 59.3    |
| New Zealand        | 435  | 51.7      | 2.5  | 1.7  | 2.9 | 1.9  | 29.0 | 10.4 | 55.9 | 0.0    | 10.4 | 61.4    | 50.6    |
| Philippines        | 848  | 5.6       | 0.2  | 3.0  | 1.0 | 0.3  | 56.3 | 33.6 | 8.8  | 0.2    | 33.4 | 7.1     | 10.8    |
| Romania            | 431  | 32.4      | 3.3  | 0.2  | 1.0 | 5.5  | 19.1 | 38.5 | 35.9 | 0.6    | 37.9 | 39.4    | 32.9    |
| Russian Federation | 531  | 40.7      | 2.7  | 4.8  | 2.3 | 4.3  | 17.1 | 28.2 | 48.1 | 0.7    | 27.5 | 48.8    | 47.3    |
| Singapore          | 624  | 47.8      | 1.3  | 0.4  | 1.0 | 7.5  | 33.9 | 8.2  | 49.5 | 0.0    | 8.2  | 43.8    | 54.0    |
| Slovak Republic    | 436  | 41.0      | 7.2  | 6.6  | 2.6 | 3.1  | 14.2 | 25.4 | 54.7 | 0.0    | 25.4 | 50.0    | 59.5    |
| Slovenia           | 389  | 38.3      | 5.5  | 1.5  | 2.1 | 7.0  | 25.2 | 20.4 | 45.3 | 0.0    | 20.4 | 41.7    | 48.7    |
| South Africa       | 993  | 6.9       | 0.8  | 0.4  | 0.9 | 0.4  | 52.3 | 38.3 | 8.2  | 1.0    | 37.3 | 8.9     | 7.3     |
| Thailand           | 711  | 43.9      | 2.3  | 8.5  | 1.4 | 6.5  | 31.2 | 6.2  | 54.7 | 0.0    | 6.2  | 56.4    | 52.8    |
| Tunisia            | 629  | 19.7      | 1.0  | 1.0  | 4.7 | 4.3  | 47.6 | 21.8 | 21.7 | 0.1    | 21.6 | 19.6    | 23.9    |
| Turkey             | 990  | 37.9      | 1.8  | 4.0  | 2.9 | 4.4  | 22.0 | 26.9 | 43.8 | 0.1    | 26.9 | 43.7    | 43.8    |
| United States      | 1080 | 42.7      | 2.3  | 0.0  | 3.2 | 1.8  | 39.6 | 10.5 | 44.9 | 0.2    | 10.3 | 45.5    | 44.4    |
| International Avg. | .    | 35.5      | 2.9  | 2.8  | 2.3 | 4.2  | 29.9 | 22.4 | 41.2 | 0.8    | 21.7 | 39.7    | 42.7    |

V1 = % Scoring 1 or better V2 = % Scoring 2 or better V3 = % Scoring 3 or better  
 Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.  
 Because of missing gender information, some totals may appear inconsistent

Science: Life Science  
 Label: Hibernating animals ( S022157 - P04 )  
 Item Type = MC Key = D

| COUNTRY            | N    | A    | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 500  | 4.7  | 23.6 | 18.7 | 51.5 | 1.5                    | 51.5 | 0.6     | 0.0            | 1.0  | 48.8              | 54.7             |
| Belgium (Flemish)  | 657  | 4.3  | 22.9 | 24.3 | 47.8 | 0.7                    | 47.8 | 0.5     | 0.0            | 0.1  | 45.9              | 49.7             |
| Bulgaria           | 406  | 2.9  | 14.2 | 7.6  | 71.9 | 3.4                    | 71.9 | 0.4     | 2.0            | 1.1  | 72.5              | 71.3             |
| Canada             | 1084 | 2.8  | 17.7 | 29.6 | 49.7 | 0.2                    | 49.7 | 0.0     | 0.0            | 0.2  | 40.0              | 59.8             |
| Chile              | 735  | 6.7  | 36.6 | 25.3 | 29.7 | 1.8                    | 29.7 | 0.0     | 0.3            | 1.5  | 28.0              | 31.2             |
| Chinese Taipei     | 717  | 3.9  | 12.0 | 33.9 | 50.0 | 0.3                    | 50.0 | 0.0     | 0.0            | 0.3  | 42.7              | 57.3             |
| Cyprus             | 392  | 15.7 | 21.4 | 11.9 | 49.9 | 1.1                    | 49.9 | 0.1     | 0.0            | 1.0  | 52.3              | 47.7             |
| Czech Republic     | 424  | 4.6  | 9.7  | 9.8  | 75.2 | 0.7                    | 75.2 | 0.1     | 0.4            | 0.2  | 75.9              | 74.5             |
| England            | 362  | 6.5  | 27.5 | 30.7 | 32.7 | 2.6                    | 32.7 | 0.5     | 1.9            | 0.3  | 22.5              | 43.4             |
| Finland            | 370  | 1.6  | 18.9 | 10.0 | 67.2 | 2.3                    | 67.2 | 0.2     | 0.3            | 1.8  | 61.6              | 73.0             |
| Hong Kong, SAR     | 643  | 7.8  | 12.1 | 31.6 | 46.8 | 1.7                    | 46.8 | 0.3     | 0.5            | 0.9  | 43.5              | 49.9             |
| Hungary            | 394  | 3.1  | 8.7  | 11.7 | 75.3 | 1.1                    | 75.3 | 0.9     | 0.0            | 0.2  | 72.7              | 78.6             |
| Indonesia          | 724  | 12.0 | 17.8 | 5.6  | 62.5 | 2.0                    | 62.5 | 0.1     | 0.0            | 1.9  | 66.1              | 58.9             |
| Iran, Islamic Rep. | 663  | 11.0 | 16.9 | 20.8 | 49.8 | 1.4                    | 49.8 | 0.0     | 0.3            | 1.1  | 44.2              | 53.6             |
| Israel             | 526  | 7.1  | 22.1 | 21.5 | 44.0 | 5.2                    | 44.0 | 1.1     | 0.0            | 4.1  | 42.0              | 46.3             |
| Italy              | 415  | 4.5  | 33.8 | 9.3  | 49.7 | 2.8                    | 49.7 | 0.0     | 0.4            | 2.3  | 51.1              | 48.1             |
| Japan              | 585  | 9.2  | 31.6 | 30.6 | 28.2 | 0.5                    | 28.2 | 0.0     | 0.0            | 0.5  | 26.0              | 30.3             |
| Jordan             | 630  | 11.8 | 32.3 | 22.4 | 31.4 | 2.0                    | 31.4 | 0.2     | 0.1            | 1.7  | 32.6              | 30.4             |
| Korea, Rep. of     | 763  | 7.0  | 20.7 | 50.1 | 21.8 | 0.4                    | 21.8 | 0.0     | 0.1            | 0.3  | 17.9              | 25.7             |
| Latvia (LSS)       | 355  | 4.9  | 18.7 | 9.9  | 63.6 | 2.9                    | 63.6 | 0.4     | 2.0            | 0.5  | 67.8              | 59.8             |
| Lithuania          | 292  | 1.5  | 6.4  | 12.9 | 77.0 | 2.1                    | 77.0 | 0.3     | 0.6            | 1.3  | 75.9              | 78.2             |
| Macedonia, Rep. of | 506  | 9.4  | 33.7 | 23.8 | 30.0 | 3.1                    | 30.0 | 0.5     | 0.6            | 2.0  | 31.5              | 28.5             |
| Malaysia           | 702  | 4.8  | 27.2 | 16.9 | 48.7 | 2.5                    | 48.7 | 0.9     | 0.0            | 1.6  | 52.8              | 43.8             |
| Moldova            | 477  | 9.5  | 17.0 | 15.3 | 54.0 | 4.1                    | 54.0 | 0.4     | 0.0            | 3.7  | 53.1              | 54.9             |
| Morocco            | 650  | 8.9  | 25.7 | 17.4 | 16.0 | 31.9                   | 16.0 | 0.4     | 25.8           | 5.7  | 20.0              | 13.2             |
| Netherlands        | 365  | 5.2  | 16.1 | 24.9 | 53.7 | 0.2                    | 53.7 | 0.0     | 0.0            | 0.2  | 51.1              | 56.5             |
| New Zealand        | 435  | 8.2  | 24.8 | 31.4 | 33.1 | 2.5                    | 33.1 | 1.3     | 0.0            | 1.2  | 33.0              | 33.2             |
| Philippines        | 848  | 12.4 | 37.0 | 20.4 | 29.0 | 1.2                    | 29.0 | 0.0     | 0.5            | 0.7  | 35.9              | 21.1             |
| Romania            | 431  | 6.6  | 19.9 | 23.0 | 46.3 | 4.2                    | 46.3 | 1.6     | 0.6            | 1.9  | 45.2              | 47.7             |
| Russian Federation | 531  | 7.0  | 11.7 | 13.3 | 66.0 | 2.0                    | 66.0 | 0.3     | 0.7            | 1.0  | 63.4              | 69.0             |
| Singapore          | 624  | 5.3  | 21.5 | 19.4 | 53.0 | 0.8                    | 53.0 | 0.2     | 0.0            | 0.6  | 47.5              | 57.3             |
| Slovak Republic    | 436  | 3.7  | 15.8 | 5.6  | 74.4 | 0.6                    | 74.4 | 0.0     | 0.0            | 0.6  | 77.2              | 71.6             |
| Slovenia           | 389  | 3.9  | 26.2 | 13.7 | 54.0 | 2.2                    | 54.0 | 0.7     | 0.0            | 1.5  | 50.6              | 57.3             |
| South Africa       | 993  | 22.3 | 32.1 | 23.5 | 20.3 | 1.8                    | 20.3 | 0.2     | 1.0            | 0.6  | 20.3              | 20.3             |
| Thailand           | 711  | 7.7  | 14.7 | 7.9  | 69.1 | 0.6                    | 69.1 | 0.0     | 0.0            | 0.6  | 71.1              | 66.7             |
| Tunisia            | 629  | 12.2 | 22.6 | 28.6 | 23.4 | 13.2                   | 23.4 | 10.5    | 0.3            | 2.4  | 19.8              | 27.1             |
| Turkey             | 990  | 17.3 | 37.3 | 18.7 | 25.1 | 1.6                    | 25.1 | 0.0     | 0.3            | 1.3  | 25.7              | 24.5             |
| United States      | 1080 | 4.2  | 20.3 | 28.0 | 47.0 | 0.6                    | 47.0 | 0.0     | 0.3            | 0.3  | 40.5              | 53.3             |
| International Avg. | .    | 7.4  | 21.8 | 20.0 | 47.9 | 2.9                    | 47.9 | 0.6     | 1.0            | 1.3  | 46.5              | 49.2             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Environmental and Resource Issues  
 Label: Two reasons for famine ( S022277A - P05A )  
 Item Type = EX Key = X

| COUNTRY            | N    | NOT REACH |      |     |      |      |     |      |      |      |     |      |      |      | 1.GIRL |      | 2.BOY   |         |
|--------------------|------|-----------|------|-----|------|------|-----|------|------|------|-----|------|------|------|--------|------|---------|---------|
|                    |      | 10        | 11   | 12  | 13   | 14   | 15  | 19   | 70   | 71   | 77  | 79   | 99   | V1   | ED     | OMIT | % Right | % Right |
| Australia          | 500  | 5.9       | 27.2 | 1.5 | 10.8 | 18.7 | 0.4 | 1.6  | 7.1  | 6.1  | 0.0 | 9.0  | 11.7 | 66.0 | 0.0    | 11.7 | 65.8    | 66.3    |
| Belgium (Flemish)  | 657  | 9.3       | 10.6 | 7.8 | 8.4  | 42.8 | 0.6 | 0.6  | 3.9  | 2.3  | 0.0 | 10.1 | 3.8  | 80.0 | 0.0    | 3.7  | 84.7    | 75.7    |
| Bulgaria           | 406  | 1.1       | 0.8  | 0.0 | 19.2 | 11.8 | 1.2 | 25.4 | 0.0  | 0.0  | 0.0 | 14.5 | 25.9 | 59.6 | 2.0    | 24.0 | 61.0    | 58.1    |
| Canada             | 1084 | 9.1       | 36.4 | 2.8 | 7.1  | 11.5 | 1.0 | 0.7  | 2.0  | 3.5  | 0.0 | 18.6 | 7.3  | 68.6 | 0.0    | 7.3  | 71.0    | 65.8    |
| Chile              | 734  | 3.2       | 32.0 | 0.5 | 7.4  | 11.5 | 0.5 | 3.6  | 2.9  | 3.5  | 0.0 | 10.2 | 24.6 | 58.8 | 0.5    | 24.1 | 60.3    | 57.2    |
| Chinese Taipei     | 717  | 6.1       | 44.8 | 4.4 | 4.6  | 14.7 | 1.6 | 3.7  | 5.0  | 1.5  | 0.0 | 7.6  | 6.0  | 79.9 | 0.0    | 6.0  | 82.9    | 76.9    |
| Cyprus             | 387  | 5.4       | 7.0  | 0.0 | 2.9  | 39.8 | 0.9 | 2.3  | 4.2  | 7.2  | 0.0 | 11.7 | 18.6 | 58.3 | 0.0    | 18.6 | 67.7    | 49.3    |
| Czech Republic     | 424  | 10.9      | 11.5 | 1.6 | 11.9 | 24.8 | 4.5 | 3.1  | 6.6  | 4.9  | 0.0 | 9.8  | 10.3 | 68.3 | 0.4    | 10.0 | 65.8    | 71.0    |
| England            | 362  | 8.3       | 33.1 | 1.4 | 4.7  | 7.4  | 0.0 | 0.3  | 5.1  | 7.4  | 0.0 | 16.1 | 16.0 | 55.2 | 1.9    | 14.2 | 58.7    | 51.7    |
| Finland            | 370  | 0.6       | 16.9 | 0.5 | 9.8  | 46.6 | 0.9 | 4.8  | 7.5  | 4.5  | 0.0 | 3.5  | 4.5  | 80.1 | 0.3    | 4.2  | 89.7    | 70.2    |
| Hong Kong, SAR     | 643  | 11.1      | 36.6 | 1.4 | 7.8  | 20.4 | 0.4 | 0.6  | 2.9  | 3.1  | 0.0 | 9.5  | 6.4  | 78.1 | 0.5    | 5.9  | 79.5    | 76.8    |
| Hungary            | 394  | 6.5       | 10.5 | 0.9 | 3.0  | 23.2 | 0.6 | 1.1  | 6.9  | 2.9  | 0.0 | 31.3 | 13.1 | 45.8 | 0.0    | 13.1 | 42.4    | 48.9    |
| Indonesia          | 724  | 2.1       | 11.4 | 0.6 | 3.5  | 49.3 | 0.0 | 6.4  | 0.9  | 1.3  | 0.0 | 23.3 | 1.2  | 73.3 | 0.0    | 1.2  | 73.2    | 73.4    |
| Iran, Islamic Rep. | 663  | 5.1       | 20.0 | 2.0 | 32.7 | 2.8  | 2.1 | 0.7  | 3.9  | 1.9  | 0.0 | 10.0 | 18.7 | 65.4 | 0.3    | 18.5 | 60.5    | 68.8    |
| Israel             | 526  | 3.3       | 20.5 | 0.6 | 11.1 | 11.9 | 0.0 | 2.9  | 15.5 | 4.8  | 0.0 | 12.9 | 16.5 | 50.3 | 0.0    | 16.5 | 53.2    | 46.9    |
| Italy              | 415  | 9.2       | 29.4 | 2.6 | 7.5  | 14.6 | 2.0 | 2.5  | 2.6  | 5.4  | 0.0 | 8.7  | 15.5 | 67.8 | 0.4    | 15.1 | 67.3    | 68.4    |
| Japan              | 585  | 2.7       | 49.9 | 0.7 | 3.5  | 5.1  | 1.9 | 0.8  | 4.7  | 8.3  | 0.0 | 10.5 | 12.1 | 64.4 | 0.0    | 12.1 | 68.8    | 60.2    |
| Jordan             | 630  | 15.0      | 12.1 | 1.6 | 14.1 | 19.1 | 1.0 | 0.5  | 12.3 | 0.7  | 0.0 | 15.2 | 8.5  | 63.3 | 0.1    | 8.4  | 67.4    | 59.7    |
| Korea, Rep. of     | 763  | 4.9       | 20.4 | 0.0 | 21.6 | 10.2 | 8.4 | 0.0  | 3.5  | 14.4 | 0.0 | 4.7  | 12.1 | 65.4 | 0.1    | 11.9 | 67.7    | 63.1    |
| Latvia (LSS)       | 355  | 5.1       | 18.6 | 2.8 | 2.1  | 43.0 | 2.4 | 2.6  | 6.1  | 3.8  | 0.0 | 4.7  | 8.6  | 76.7 | 2.0    | 6.7  | 81.0    | 72.9    |
| Lithuania          | 292  | 2.1       | 12.8 | 1.2 | 6.6  | 26.2 | 0.7 | 0.3  | 1.7  | 0.5  | 0.0 | 35.5 | 12.3 | 50.0 | 0.6    | 11.7 | 47.8    | 52.4    |
| Macedonia, Rep. of | 506  | 5.3       | 1.1  | 0.8 | 1.6  | 1.1  | 0.4 | 11.5 | 17.4 | 0.6  | 0.0 | 36.6 | 23.6 | 21.8 | 0.6    | 23.1 | 23.5    | 20.0    |
| Malaysia           | 702  | 5.6       | 18.6 | 1.1 | 4.0  | 24.6 | 1.5 | 1.8  | 13.1 | 5.7  | 0.0 | 16.2 | 7.8  | 57.2 | 0.0    | 7.8  | 56.9    | 57.6    |
| Moldova            | 477  | 12.6      | 27.7 | 0.7 | 1.1  | 23.0 | 2.0 | 6.0  | 8.7  | 1.4  | 0.0 | 4.0  | 12.8 | 73.1 | 0.0    | 12.8 | 74.2    | 72.0    |
| Morocco            | 650  | 2.0       | 13.5 | 0.3 | 1.6  | 8.9  | 0.1 | 1.7  | 1.3  | 0.0  | 0.0 | 10.8 | 59.7 | 28.2 | 26.1   | 33.6 | 29.4    | 27.1    |
| Netherlands        | 365  | 4.1       | 13.4 | 0.2 | 6.3  | 14.7 | 1.4 | 18.5 | 7.2  | 10.7 | 0.0 | 20.7 | 2.7  | 58.7 | 0.1    | 2.6  | 62.6    | 54.3    |
| New Zealand        | 435  | 7.2       | 24.2 | 1.0 | 9.9  | 16.2 | 0.7 | 0.3  | 5.7  | 6.3  | 1.7 | 13.4 | 13.4 | 59.4 | 0.0    | 13.4 | 67.4    | 51.6    |
| Philippines        | 848  | 1.9       | 10.5 | 0.5 | 11.3 | 1.9  | 0.5 | 2.8  | 7.1  | 3.6  | 0.0 | 27.3 | 32.5 | 29.5 | 0.5    | 31.9 | 34.6    | 23.5    |
| Romania            | 431  | 0.6       | 15.7 | 0.7 | 3.5  | 19.3 | 1.5 | 0.4  | 7.6  | 7.6  | 0.0 | 15.8 | 27.2 | 41.7 | 0.6    | 26.6 | 44.6    | 38.5    |
| Russian Federation | 531  | 8.5       | 20.9 | 0.8 | 8.3  | 27.3 | 5.7 | 1.3  | 3.4  | 2.0  | 0.0 | 8.6  | 13.3 | 72.7 | 0.8    | 12.4 | 76.4    | 68.7    |
| Singapore          | 624  | 9.3       | 43.9 | 1.2 | 21.2 | 6.1  | 0.4 | 1.1  | 2.8  | 3.3  | 0.0 | 5.5  | 5.3  | 83.2 | 0.0    | 5.3  | 82.9    | 83.4    |
| Slovak Republic    | 436  | 18.2      | 15.6 | 3.0 | 5.9  | 34.0 | 2.8 | 2.6  | 3.2  | 2.6  | 0.0 | 4.0  | 8.0  | 82.2 | 0.0    | 8.0  | 85.6    | 78.8    |
| Slovenia           | 389  | 6.6       | 8.9  | 0.4 | 14.6 | 55.6 | 1.3 | 0.8  | 0.9  | 2.1  | 0.0 | 3.3  | 5.4  | 88.3 | 0.0    | 5.4  | 93.9    | 82.9    |
| South Africa       | 993  | 1.0       | 8.1  | 0.2 | 3.2  | 0.8  | 0.0 | 0.3  | 5.0  | 1.4  | 0.0 | 51.0 | 28.9 | 13.7 | 1.0    | 27.9 | 14.6    | 12.7    |
| Thailand           | 711  | 3.5       | 16.0 | 0.2 | 14.6 | 10.4 | 0.8 | 19.3 | 8.8  | 3.5  | 0.0 | 18.8 | 4.0  | 64.8 | 0.0    | 4.0  | 64.2    | 65.5    |
| Tunisia            | 629  | 6.6       | 13.8 | 1.4 | 3.4  | 11.0 | 0.3 | 4.9  | 25.4 | 1.2  | 0.0 | 26.1 | 5.9  | 41.4 | 0.3    | 5.6  | 39.2    | 43.7    |
| Turkey             | 990  | 9.6       | 21.6 | 4.4 | 10.1 | 9.4  | 2.0 | 1.5  | 3.1  | 0.6  | 0.0 | 21.0 | 16.7 | 58.7 | 0.3    | 16.4 | 63.2    | 54.7    |
| United States      | 1080 | 2.7       | 30.9 | 3.6 | 8.4  | 3.5  | 1.0 | 1.7  | 2.7  | 9.1  | 0.0 | 27.7 | 8.6  | 51.8 | 0.3    | 8.4  | 51.8    | 51.9    |
| International Avg. | .    | 6.1       | 20.2 | 1.5 | 8.7  | 19.0 | 1.4 | 3.7  | 6.0  | 3.9  | 0.0 | 15.5 | 13.9 | 60.6 | 1.0    | 12.9 | 62.7    | 58.4    |

V1 = % Scoring 1 or better V2 = % Scoring 2 or better V3 = % Scoring 3 or better  
 Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.  
 Because of missing gender information, some totals may appear inconsistent

Science: Environmental and Resource Issues  
 Label: Two reasons for famine ( S022277B - P05B )  
 Item Type = EX Key = X

| COUNTRY            | N    | 10   | 11   | 12  | 13   | 14   | 15  | 19   | 70   | 71   | 77  | 79   | 99   | V1   | NOT   | 1.GIRL | 2.BOY |         |
|--------------------|------|------|------|-----|------|------|-----|------|------|------|-----|------|------|------|-------|--------|-------|---------|
|                    |      |      |      |     |      |      |     |      |      |      |     |      |      |      | REACH |        |       | % Right |
| Australia          | 500  | 6.7  | 16.9 | 4.0 | 8.4  | 22.4 | 0.3 | 2.8  | 1.7  | 7.0  | 0.0 | 13.6 | 16.0 | 61.7 | 0.0   | 16.0   | 57.3  | 66.9    |
| Belgium (Flemish)  | 657  | 6.5  | 8.9  | 5.7 | 6.4  | 29.8 | 1.2 | 2.1  | 2.2  | 3.5  | 0.0 | 25.5 | 8.3  | 60.6 | 0.0   | 8.2    | 63.5  | 57.9    |
| Bulgaria           | 406  | 1.3  | 1.1  | 0.2 | 8.1  | 7.3  | 1.9 | 24.8 | 0.3  | 0.0  | 0.0 | 17.0 | 38.0 | 44.8 | 2.0   | 36.1   | 44.7  | 44.8    |
| Canada             | 1084 | 8.3  | 18.4 | 6.6 | 6.3  | 17.7 | 1.8 | 0.8  | 1.7  | 3.3  | 0.0 | 22.5 | 12.8 | 59.8 | 0.0   | 12.8   | 61.1  | 58.2    |
| Chile              | 734  | 4.3  | 16.9 | 1.7 | 4.3  | 13.2 | 1.6 | 2.6  | 1.1  | 6.0  | 0.0 | 13.3 | 35.2 | 44.5 | 0.5   | 34.7   | 43.3  | 45.7    |
| Chinese Taipei     | 717  | 6.6  | 34.3 | 5.6 | 4.4  | 12.8 | 2.8 | 3.8  | 2.8  | 1.8  | 0.0 | 14.9 | 10.1 | 70.3 | 0.0   | 10.1   | 71.3  | 69.3    |
| Cyprus             | 386  | 7.7  | 12.7 | 0.6 | 1.6  | 23.9 | 1.6 | 2.8  | 3.4  | 5.9  | 0.0 | 12.7 | 27.2 | 50.8 | 0.0   | 27.2   | 55.0  | 46.8    |
| Czech Republic     | 424  | 8.7  | 10.1 | 4.3 | 3.6  | 22.1 | 1.6 | 1.6  | 4.3  | 3.5  | 0.0 | 16.1 | 24.0 | 52.2 | 0.4   | 23.6   | 49.1  | 55.5    |
| England            | 362  | 6.7  | 23.6 | 4.6 | 2.1  | 11.9 | 0.3 | 0.5  | 1.3  | 9.2  | 0.0 | 18.4 | 21.3 | 49.7 | 1.9   | 19.5   | 50.4  | 49.1    |
| Finland            | 370  | 1.4  | 14.6 | 0.2 | 6.9  | 34.9 | 1.3 | 3.8  | 10.9 | 5.4  | 0.0 | 10.0 | 10.6 | 63.1 | 0.3   | 10.3   | 67.2  | 59.0    |
| Hong Kong, SAR     | 642  | 9.8  | 32.3 | 2.8 | 6.1  | 21.1 | 1.6 | 0.6  | 0.9  | 4.4  | 0.0 | 9.7  | 10.6 | 74.3 | 0.5   | 10.1   | 76.6  | 72.2    |
| Hungary            | 394  | 4.1  | 10.5 | 1.3 | 1.5  | 17.3 | 0.7 | 1.2  | 2.4  | 1.5  | 0.0 | 30.5 | 28.9 | 36.7 | 0.0   | 28.9   | 35.0  | 38.2    |
| Indonesia          | 723  | 5.8  | 9.9  | 2.8 | 4.1  | 18.6 | 0.0 | 2.4  | 0.5  | 0.8  | 0.0 | 50.2 | 4.8  | 43.7 | 0.0   | 4.8    | 43.0  | 44.4    |
| Iran, Islamic Rep. | 663  | 8.9  | 7.1  | 3.9 | 5.5  | 6.0  | 1.6 | 1.7  | 3.5  | 1.1  | 0.0 | 34.4 | 26.2 | 34.8 | 0.3   | 25.9   | 35.1  | 34.6    |
| Israel             | 526  | 4.8  | 11.3 | 2.4 | 6.9  | 13.0 | 0.7 | 1.5  | 7.1  | 3.4  | 0.0 | 17.2 | 31.6 | 40.6 | 0.0   | 31.6   | 43.0  | 37.8    |
| Italy              | 415  | 8.9  | 16.3 | 3.3 | 5.1  | 14.2 | 1.1 | 0.2  | 1.5  | 5.0  | 0.0 | 17.2 | 27.1 | 49.1 | 0.4   | 26.7   | 51.8  | 46.2    |
| Japan              | 585  | 2.5  | 22.4 | 3.5 | 6.4  | 8.9  | 2.2 | 0.7  | 3.1  | 9.7  | 0.0 | 15.3 | 25.2 | 46.6 | 0.0   | 25.2   | 46.5  | 46.7    |
| Jordan             | 630  | 11.7 | 11.9 | 3.5 | 6.1  | 23.2 | 0.8 | 1.3  | 8.8  | 1.1  | 0.0 | 18.3 | 13.2 | 58.6 | 0.1   | 13.1   | 65.1  | 52.9    |
| Korea, Rep. of     | 763  | 8.0  | 11.2 | 0.4 | 8.1  | 12.5 | 8.0 | 0.2  | 1.9  | 18.5 | 0.0 | 13.3 | 17.9 | 48.2 | 0.1   | 17.8   | 50.6  | 45.8    |
| Latvia (LSS)       | 355  | 2.1  | 14.9 | 1.7 | 0.8  | 27.9 | 3.5 | 1.5  | 2.8  | 1.4  | 0.0 | 25.3 | 18.1 | 52.3 | 2.0   | 16.2   | 54.8  | 50.0    |
| Lithuania          | 292  | 2.4  | 5.7  | 2.2 | 3.1  | 21.9 | 0.9 | 0.3  | 0.2  | 0.0  | 0.0 | 39.3 | 24.0 | 36.5 | 0.6   | 23.4   | 37.2  | 35.6    |
| Macedonia, Rep. of | 506  | 2.9  | 0.7  | 1.0 | 0.0  | 0.9  | 0.6 | 8.6  | 9.6  | 0.8  | 0.0 | 27.3 | 47.5 | 14.8 | 0.6   | 46.9   | 16.9  | 12.6    |
| Malaysia           | 701  | 5.1  | 17.2 | 1.3 | 3.0  | 23.1 | 2.2 | 1.7  | 5.3  | 6.8  | 0.0 | 19.5 | 14.6 | 53.7 | 0.0   | 14.6   | 53.4  | 54.1    |
| Moldova            | 477  | 12.5 | 26.1 | 0.3 | 1.9  | 21.4 | 1.6 | 3.7  | 2.8  | 2.3  | 0.0 | 4.2  | 23.2 | 67.6 | 0.0   | 23.2   | 66.7  | 68.4    |
| Morocco            | 650  | 1.9  | 12.0 | 0.1 | 1.5  | 8.6  | 0.3 | 0.9  | 0.3  | 0.1  | 0.0 | 11.8 | 62.5 | 25.3 | 26.1  | 36.4   | 26.6  | 24.1    |
| Netherlands        | 365  | 3.7  | 11.5 | 1.2 | 5.7  | 20.7 | 0.0 | 7.3  | 3.6  | 8.4  | 0.0 | 32.6 | 5.2  | 50.1 | 0.1   | 5.1    | 55.6  | 44.1    |
| New Zealand        | 435  | 5.3  | 19.8 | 3.7 | 7.9  | 18.4 | 1.6 | 0.5  | 1.4  | 6.3  | 0.8 | 15.5 | 18.7 | 57.2 | 0.0   | 18.7   | 63.4  | 51.1    |
| Philippines        | 848  | 1.8  | 6.4  | 1.3 | 2.7  | 4.2  | 1.4 | 2.6  | 3.0  | 4.1  | 0.0 | 31.9 | 40.6 | 20.3 | 0.5   | 40.1   | 24.4  | 15.6    |
| Romania            | 431  | 1.1  | 11.6 | 1.4 | 3.2  | 18.0 | 0.7 | 2.1  | 3.0  | 4.0  | 0.0 | 16.6 | 38.2 | 38.1 | 0.6   | 37.6   | 39.4  | 36.3    |
| Russian Federation | 531  | 7.1  | 9.8  | 2.0 | 3.6  | 15.5 | 5.3 | 1.8  | 0.7  | 1.9  | 0.0 | 26.3 | 26.0 | 45.1 | 0.8   | 25.1   | 46.0  | 44.2    |
| Singapore          | 624  | 14.7 | 36.3 | 5.0 | 10.6 | 9.8  | 1.5 | 0.2  | 2.7  | 2.7  | 0.0 | 9.0  | 7.6  | 77.9 | 0.0   | 7.6    | 77.7  | 78.1    |
| Slovak Republic    | 436  | 12.3 | 13.8 | 4.0 | 3.3  | 32.2 | 5.8 | 4.8  | 0.3  | 0.7  | 0.0 | 3.7  | 19.2 | 76.1 | 0.0   | 19.2   | 78.3  | 73.9    |
| Slovenia           | 389  | 11.5 | 10.8 | 1.7 | 7.0  | 43.5 | 1.3 | 1.0  | 0.9  | 4.8  | 0.0 | 6.8  | 10.9 | 76.7 | 0.0   | 10.9   | 80.4  | 73.2    |
| South Africa       | 993  | 2.3  | 4.8  | 0.6 | 1.3  | 1.3  | 1.3 | 0.2  | 2.1  | 1.8  | 0.0 | 50.6 | 33.6 | 11.9 | 1.0   | 32.5   | 13.0  | 10.8    |
| Thailand           | 711  | 4.1  | 14.8 | 0.5 | 8.1  | 9.5  | 1.4 | 23.5 | 8.3  | 4.0  | 0.0 | 19.7 | 6.1  | 61.9 | 0.0   | 6.1    | 64.2  | 59.0    |
| Tunisia            | 628  | 8.9  | 11.8 | 1.8 | 2.3  | 12.3 | 0.3 | 7.0  | 12.0 | 1.8  | 0.0 | 31.2 | 10.5 | 44.5 | 0.3   | 10.2   | 43.7  | 45.3    |
| Turkey             | 990  | 13.5 | 12.3 | 3.1 | 6.4  | 8.6  | 1.2 | 1.9  | 2.8  | 1.4  | 0.0 | 25.3 | 23.6 | 47.0 | 0.3   | 23.3   | 49.8  | 44.5    |
| United States      | 1080 | 5.2  | 19.2 | 6.5 | 5.4  | 6.7  | 1.3 | 2.9  | 3.1  | 9.0  | 0.0 | 26.9 | 13.9 | 47.2 | 0.3   | 13.6   | 47.8  | 46.7    |
| International Avg. | .    | 6.3  | 14.5 | 2.5 | 4.7  | 16.7 | 1.7 | 3.4  | 3.3  | 4.0  | 0.0 | 20.9 | 21.9 | 49.9 | 1.0   | 20.9   | 51.3  | 48.4    |

V1 = % Scoring 1 or better V2 = % Scoring 2 or better V3 = % Scoring 3 or better  
 Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.  
 Because of missing gender information, some totals may appear inconsistent

Science: Environmental and Resource Issues  
 Label: Two reasons for famine ( S022277D - P05D )  
 Item Type = EX Key = X

| COUNTRY            | N    | 20   | 10   | 70   | 99   | V1   | V2   | NOT REACH |      | 1.GIRL  | 2.BOY   |
|--------------------|------|------|------|------|------|------|------|-----------|------|---------|---------|
|                    |      |      |      |      |      |      |      | ED        | OMIT | % Right | % Right |
| Australia          | 500  | 54.7 | 18.4 | 15.2 | 11.7 | 73.0 | 54.7 | 0.0       | 11.7 | 50.2    | 60.0    |
| Belgium (Flemish)  | 657  | 53.7 | 33.2 | 9.3  | 3.8  | 86.9 | 53.7 | 0.0       | 3.7  | 57.3    | 50.4    |
| Bulgaria           | 406  | 41.1 | 22.0 | 11.3 | 25.6 | 63.2 | 41.1 | 2.0       | 23.6 | 42.1    | 40.2    |
| Canada             | 1084 | 52.8 | 22.8 | 17.1 | 7.3  | 75.6 | 52.8 | 0.0       | 7.3  | 54.8    | 50.4    |
| Chile              | 734  | 37.4 | 28.5 | 9.5  | 24.6 | 65.9 | 37.4 | 0.5       | 24.1 | 36.8    | 37.9    |
| Chinese Taipei     | 717  | 65.8 | 18.6 | 9.6  | 6.0  | 84.4 | 65.8 | 0.0       | 6.0  | 66.3    | 65.3    |
| Cyprus             | 387  | 43.3 | 22.3 | 15.7 | 18.6 | 65.7 | 43.3 | 0.0       | 18.6 | 49.9    | 37.1    |
| Czech Republic     | 424  | 43.8 | 32.9 | 13.0 | 10.3 | 76.7 | 43.8 | 0.4       | 10.0 | 38.5    | 49.5    |
| England            | 362  | 40.9 | 23.2 | 19.9 | 16.0 | 64.1 | 40.9 | 1.9       | 14.2 | 43.2    | 38.5    |
| Finland            | 370  | 55.0 | 33.1 | 7.3  | 4.5  | 88.2 | 55.0 | 0.3       | 4.2  | 63.7    | 46.1    |
| Hong Kong, SAR     | 643  | 66.2 | 19.9 | 7.5  | 6.4  | 86.1 | 66.2 | 0.5       | 5.9  | 66.4    | 66.1    |
| Hungary            | 394  | 30.8 | 20.9 | 35.2 | 13.1 | 51.7 | 30.8 | 0.0       | 13.1 | 29.5    | 31.8    |
| Indonesia          | 724  | 34.0 | 48.9 | 15.9 | 1.2  | 82.9 | 34.0 | 0.0       | 1.2  | 34.0    | 34.0    |
| Iran, Islamic Rep. | 663  | 32.6 | 35.1 | 13.7 | 18.6 | 67.7 | 32.6 | 0.3       | 18.4 | 32.0    | 32.9    |
| Israel             | 526  | 33.5 | 24.0 | 26.2 | 16.3 | 57.5 | 33.5 | 0.0       | 16.3 | 34.2    | 32.6    |
| Italy              | 415  | 40.9 | 35.1 | 8.5  | 15.5 | 76.0 | 40.9 | 0.4       | 15.1 | 41.2    | 40.6    |
| Japan              | 585  | 38.6 | 33.9 | 15.5 | 12.1 | 72.5 | 38.6 | 0.0       | 12.1 | 39.5    | 37.6    |
| Jordan             | 630  | 45.6 | 30.7 | 15.6 | 8.1  | 76.3 | 45.6 | 0.1       | 8.0  | 50.3    | 41.5    |
| Korea, Rep. of     | 763  | 38.7 | 36.3 | 13.0 | 12.1 | 74.9 | 38.7 | 0.1       | 11.9 | 41.6    | 35.8    |
| Latvia (LSS)       | 355  | 47.0 | 35.1 | 9.4  | 8.6  | 82.0 | 47.0 | 2.0       | 6.7  | 50.2    | 44.1    |
| Lithuania          | 292  | 25.6 | 35.2 | 26.8 | 12.3 | 60.8 | 25.6 | 0.6       | 11.7 | 23.8    | 27.6    |
| Macedonia, Rep. of | 506  | 13.6 | 9.4  | 53.8 | 23.2 | 23.0 | 13.6 | 0.6       | 22.7 | 15.2    | 11.9    |
| Malaysia           | 702  | 39.7 | 31.5 | 21.0 | 7.8  | 71.2 | 39.7 | 0.0       | 7.8  | 38.8    | 40.7    |
| Moldova            | 477  | 59.3 | 22.1 | 6.1  | 12.6 | 81.4 | 59.3 | 0.0       | 12.6 | 56.8    | 61.7    |
| Morocco            | 650  | 24.7 | 4.0  | 12.2 | 59.0 | 28.8 | 24.7 | 26.1      | 32.9 | 26.3    | 23.4    |
| Netherlands        | 365  | 39.3 | 30.2 | 28.0 | 2.5  | 69.5 | 39.3 | 0.1       | 2.4  | 42.8    | 35.4    |
| New Zealand        | 435  | 47.9 | 20.8 | 17.9 | 13.4 | 68.7 | 47.9 | 0.0       | 13.4 | 55.6    | 40.3    |
| Philippines        | 848  | 15.5 | 18.8 | 33.3 | 32.4 | 34.3 | 15.5 | 0.5       | 31.8 | 19.0    | 11.4    |
| Romania            | 431  | 31.6 | 16.7 | 24.7 | 27.1 | 48.3 | 31.6 | 0.6       | 26.4 | 32.9    | 29.7    |
| Russian Federation | 531  | 38.1 | 41.7 | 7.0  | 13.3 | 79.8 | 38.1 | 0.8       | 12.4 | 39.5    | 36.6    |
| Singapore          | 624  | 73.5 | 14.2 | 7.1  | 5.3  | 87.6 | 73.5 | 0.0       | 5.3  | 72.7    | 74.0    |
| Slovak Republic    | 436  | 69.8 | 18.7 | 4.0  | 7.5  | 88.5 | 69.8 | 0.0       | 7.5  | 71.4    | 68.2    |
| Slovenia           | 389  | 72.1 | 20.7 | 2.1  | 5.0  | 92.9 | 72.1 | 0.0       | 5.0  | 77.8    | 66.7    |
| South Africa       | 993  | 8.0  | 9.6  | 55.3 | 27.0 | 17.6 | 8.0  | 1.0       | 26.0 | 9.1     | 6.7     |
| Thailand           | 711  | 52.1 | 22.5 | 21.8 | 3.6  | 74.6 | 52.1 | 0.0       | 3.6  | 52.8    | 51.2    |
| Tunisia            | 629  | 29.0 | 27.8 | 37.4 | 5.7  | 56.8 | 29.0 | 0.3       | 5.4  | 26.8    | 31.3    |
| Turkey             | 990  | 41.7 | 22.2 | 19.7 | 16.4 | 63.9 | 41.7 | 0.3       | 16.1 | 45.2    | 38.7    |
| United States      | 1080 | 36.0 | 27.0 | 28.4 | 8.6  | 63.0 | 36.0 | 0.3       | 8.3  | 35.9    | 36.1    |
| International Avg. | .    | 42.5 | 25.5 | 18.3 | 13.8 | 67.9 | 42.5 | 1.0       | 12.7 | 43.8    | 41.2    |

V1 = % Scoring 1 or better V2 = % Scoring 2 or better V3 = % Scoring 3 or better  
 Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.  
 Because of missing gender information, some totals may appear inconsistent

Science: Life Science  
 Label: Digestion in stomach ( S022158 - P06 )  
 Item Type = EX Key = X

| COUNTRY            | N    |      |      |      |      |     |      |      |      |      |      | NOT REACH | OMIT | 1.GIRL  | 2.BOY   |
|--------------------|------|------|------|------|------|-----|------|------|------|------|------|-----------|------|---------|---------|
|                    |      | 10   | 11   | 12   | 19   | 70  | 71   | 72   | 79   | 99   | V1   | ED        |      | % Right | % Right |
| Australia          | 500  | 13.4 | 2.4  | 33.4 | 0.0  | 1.8 | 11.5 | 3.7  | 14.6 | 19.2 | 49.2 | 0.0       | 19.2 | 45.2    | 54.0    |
| Belgium (Flemish)  | 657  | 29.8 | 10.6 | 4.3  | 1.0  | 0.6 | 12.0 | 0.7  | 21.1 | 20.0 | 45.7 | 0.2       | 19.8 | 48.0    | 43.6    |
| Bulgaria           | 406  | 30.3 | 14.2 | 0.9  | 9.1  | 0.0 | 0.0  | 0.5  | 8.7  | 36.4 | 54.5 | 2.2       | 34.2 | 52.6    | 56.5    |
| Canada             | 1084 | 4.4  | 0.2  | 38.2 | 0.1  | 1.1 | 11.9 | 7.4  | 18.7 | 18.2 | 42.8 | 0.0       | 18.1 | 35.0    | 51.4    |
| Chile              | 735  | 10.5 | 8.6  | 5.0  | 0.0  | 0.7 | 5.6  | 3.8  | 13.6 | 52.2 | 24.1 | 0.9       | 51.3 | 19.5    | 28.5    |
| Chinese Taipei     | 717  | 15.1 | 2.3  | 35.3 | 1.1  | 0.6 | 4.8  | 5.7  | 20.2 | 14.9 | 53.8 | 0.0       | 14.9 | 46.1    | 61.6    |
| Cyprus             | 390  | 6.5  | 2.7  | 1.5  | 3.2  | 1.3 | 17.5 | 2.8  | 15.6 | 48.9 | 13.9 | 0.0       | 48.9 | 13.8    | 14.1    |
| Czech Republic     | 424  | 33.9 | 22.8 | 6.2  | 1.6  | 1.2 | 7.0  | 2.3  | 8.2  | 16.8 | 64.5 | 0.4       | 16.5 | 64.2    | 64.8    |
| England            | 362  | 9.2  | 1.3  | 39.6 | 1.3  | 2.8 | 8.5  | 7.0  | 10.4 | 20.0 | 51.4 | 1.9       | 18.1 | 48.7    | 54.2    |
| Finland            | 370  | 3.6  | 0.4  | 29.6 | 0.3  | 1.2 | 8.3  | 20.9 | 17.0 | 18.7 | 33.9 | 0.3       | 18.4 | 23.5    | 44.6    |
| Hong Kong, SAR     | 643  | 33.3 | 7.2  | 13.5 | 10.2 | 0.6 | 0.6  | 4.8  | 10.7 | 19.0 | 64.3 | 0.5       | 18.5 | 59.2    | 69.2    |
| Hungary            | 394  | 19.5 | 10.5 | 27.9 | 1.3  | 0.3 | 3.8  | 3.3  | 12.5 | 20.8 | 59.3 | 0.0       | 20.8 | 53.0    | 65.4    |
| Indonesia          | 724  | 7.9  | 12.6 | 0.5  | 1.1  | 8.6 | 27.4 | 2.6  | 23.2 | 16.1 | 22.1 | 0.2       | 15.9 | 24.8    | 19.3    |
| Iran, Islamic Rep. | 663  | 9.5  | 6.3  | 3.2  | 7.3  | 3.8 | 6.8  | 11.3 | 15.4 | 36.4 | 26.3 | 0.3       | 36.1 | 25.7    | 26.7    |
| Israel             | 526  | 8.4  | 2.0  | 6.8  | 1.6  | 0.5 | 7.9  | 4.5  | 18.1 | 50.2 | 18.8 | 0.5       | 49.7 | 18.0    | 19.8    |
| Italy              | 415  | 19.3 | 7.7  | 4.0  | 3.6  | 2.3 | 8.5  | 0.5  | 15.8 | 38.2 | 34.7 | 0.4       | 37.8 | 33.0    | 36.6    |
| Japan              | 585  | 30.6 | 14.6 | 2.2  | 5.7  | 1.5 | 1.9  | 16.6 | 9.1  | 17.8 | 53.2 | 0.1       | 17.7 | 56.7    | 49.6    |
| Jordan             | 630  | 26.6 | 8.0  | 1.1  | 1.8  | 0.3 | 11.0 | 10.5 | 21.8 | 18.9 | 37.5 | 0.1       | 18.8 | 40.4    | 34.9    |
| Korea, Rep. of     | 763  | 28.4 | 12.0 | 1.8  | 0.3  | 0.6 | 5.3  | 13.6 | 13.5 | 24.4 | 42.5 | 0.1       | 24.3 | 40.1    | 44.8    |
| Latvia (LSS)       | 355  | 24.5 | 18.0 | 9.0  | 6.0  | 0.4 | 0.7  | 2.7  | 13.0 | 25.8 | 57.4 | 2.6       | 23.2 | 59.8    | 55.4    |
| Lithuania          | 292  | 35.4 | 9.8  | 1.4  | 2.1  | 0.0 | 0.4  | 0.3  | 22.4 | 28.1 | 48.8 | 0.6       | 27.5 | 45.5    | 52.5    |
| Macedonia, Rep. of | 506  | 25.4 | 5.8  | 1.2  | 6.6  | 1.0 | 0.7  | 2.0  | 16.3 | 41.1 | 39.0 | 0.6       | 40.5 | 44.2    | 33.4    |
| Malaysia           | 702  | 16.6 | 9.3  | 2.6  | 0.2  | 3.0 | 13.9 | 3.1  | 25.1 | 26.3 | 28.7 | 0.4       | 25.9 | 29.5    | 27.7    |
| Moldova            | 477  | 44.4 | 13.1 | 0.7  | 1.8  | 0.0 | 1.4  | 1.7  | 9.2  | 27.7 | 60.0 | 0.2       | 27.4 | 56.3    | 63.6    |
| Morocco            | 645  | 0.5  | 0.3  | 0.1  | 0.5  | 0.0 | 6.2  | 0.1  | 18.1 | 74.3 | 1.3  | 29.8      | 44.5 | 1.0     | 1.3     |
| Netherlands        | 365  | 28.9 | 23.4 | 2.2  | 0.0  | 0.9 | 13.6 | 4.3  | 18.4 | 8.5  | 54.5 | 0.1       | 8.3  | 52.7    | 56.4    |
| New Zealand        | 435  | 6.3  | 1.2  | 40.9 | 0.3  | 0.4 | 9.8  | 4.8  | 18.0 | 18.4 | 48.6 | 0.0       | 18.4 | 51.0    | 46.2    |
| Philippines        | 848  | 3.7  | 0.7  | 0.7  | 0.5  | 0.4 | 25.7 | 4.9  | 30.1 | 33.3 | 5.6  | 0.7       | 32.6 | 4.8     | 6.6     |
| Romania            | 431  | 32.5 | 23.4 | 1.4  | 4.5  | 0.2 | 2.5  | 0.5  | 6.2  | 28.8 | 61.7 | 0.6       | 28.2 | 66.2    | 57.1    |
| Russian Federation | 531  | 36.6 | 7.9  | 2.6  | 6.5  | 0.7 | 10.3 | 3.5  | 8.4  | 23.6 | 53.6 | 0.9       | 22.7 | 51.3    | 56.1    |
| Singapore          | 624  | 30.9 | 18.5 | 5.7  | 0.9  | 3.5 | 13.7 | 6.6  | 12.6 | 7.7  | 56.0 | 0.0       | 7.7  | 55.3    | 56.5    |
| Slovak Republic    | 436  | 50.7 | 11.2 | 11.5 | 1.6  | 2.3 | 1.4  | 0.9  | 3.7  | 16.6 | 75.0 | 0.0       | 16.6 | 73.4    | 76.7    |
| Slovenia           | 389  | 30.1 | 7.0  | 24.9 | 0.4  | 2.1 | 8.2  | 3.5  | 10.1 | 13.6 | 62.5 | 0.0       | 13.6 | 61.8    | 63.1    |
| South Africa       | 993  | 1.4  | 0.6  | 2.4  | 0.0  | 0.4 | 4.8  | 4.0  | 49.7 | 36.6 | 4.5  | 1.2       | 35.4 | 4.4     | 4.6     |
| Thailand           | 711  | 29.3 | 8.6  | 1.8  | 1.8  | 4.3 | 7.3  | 17.9 | 13.3 | 15.8 | 41.4 | 0.0       | 15.8 | 45.6    | 36.4    |
| Tunisia            | 628  | 0.9  | 0.5  | 1.9  | 2.7  | 1.1 | 4.8  | 4.9  | 45.4 | 37.9 | 6.0  | 0.6       | 37.3 | 4.5     | 7.5     |
| Turkey             | 990  | 3.6  | 4.1  | 3.9  | 1.8  | 1.9 | 2.8  | 4.7  | 34.6 | 42.5 | 13.5 | 0.3       | 42.2 | 13.7    | 13.3    |
| United States      | 1080 | 6.7  | 0.4  | 38.7 | 0.4  | 2.4 | 11.8 | 3.9  | 17.6 | 18.1 | 46.2 | 0.4       | 17.7 | 39.4    | 52.8    |
| International Avg. | .    | 19.7 | 8.2  | 10.8 | 2.3  | 1.4 | 7.9  | 5.2  | 17.4 | 27.2 | 41.0 | 1.2       | 25.9 | 39.7    | 42.3    |

V1 = % Scoring 1 or better V2 = % Scoring 2 or better V3 = % Scoring 3 or better  
 Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.  
 Because of missing gender information, some totals may appear inconsistent

Science: Scientific Inquiry and the Nature of Science  
 Label: Replication of measurements ( S022245 - P07 )  
 Item Type = MC Key = C

| COUNTRY            | N    | A    | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 500  | 23.3 | 29.8 | 32.6 | 12.8 | 1.4                    | 32.6 | 0.3     | 0.0            | 1.1  | 33.3              | 31.8             |
| Belgium (Flemish)  | 657  | 24.4 | 24.4 | 30.7 | 19.6 | 1.0                    | 30.7 | 0.7     | 0.2            | 0.1  | 32.7              | 28.8             |
| Bulgaria           | 406  | 14.5 | 26.8 | 43.4 | 9.0  | 6.3                    | 43.4 | 1.1     | 2.2            | 3.0  | 48.9              | 37.8             |
| Canada             | 1084 | 18.0 | 35.4 | 33.6 | 12.1 | 0.9                    | 33.6 | 0.3     | 0.0            | 0.6  | 35.3              | 32.0             |
| Chile              | 735  | 26.8 | 26.7 | 33.2 | 10.9 | 2.3                    | 33.2 | 0.0     | 1.1            | 1.2  | 33.3              | 33.2             |
| Chinese Taipei     | 717  | 5.8  | 16.3 | 73.5 | 4.3  | 0.1                    | 73.5 | 0.1     | 0.0            | 0.0  | 74.0              | 73.0             |
| Cyprus             | 392  | 27.0 | 34.0 | 27.8 | 10.4 | 0.7                    | 27.8 | 0.1     | 0.0            | 0.7  | 25.4              | 30.1             |
| Czech Republic     | 424  | 12.2 | 27.7 | 45.6 | 13.3 | 1.2                    | 45.6 | 0.8     | 0.4            | 0.0  | 48.0              | 43.1             |
| England            | 362  | 17.1 | 31.2 | 34.6 | 14.1 | 3.0                    | 34.6 | 0.3     | 1.9            | 0.8  | 31.1              | 38.3             |
| Finland            | 370  | 18.8 | 22.8 | 44.7 | 11.7 | 2.0                    | 44.7 | 0.0     | 0.3            | 1.7  | 39.4              | 50.1             |
| Hong Kong, SAR     | 643  | 9.8  | 24.5 | 55.7 | 8.7  | 1.4                    | 55.7 | 0.3     | 0.5            | 0.5  | 56.5              | 54.9             |
| Hungary            | 394  | 13.4 | 26.7 | 30.7 | 27.2 | 2.0                    | 30.7 | 1.5     | 0.0            | 0.4  | 29.1              | 32.6             |
| Indonesia          | 724  | 37.0 | 27.2 | 29.1 | 5.8  | 0.9                    | 29.1 | 0.1     | 0.3            | 0.4  | 29.9              | 28.3             |
| Iran, Islamic Rep. | 663  | 39.6 | 21.7 | 28.7 | 9.0  | 0.9                    | 28.7 | 0.0     | 0.3            | 0.6  | 29.7              | 28.0             |
| Israel             | 526  | 8.7  | 18.8 | 57.5 | 11.4 | 3.6                    | 57.5 | 0.3     | 0.7            | 2.6  | 59.9              | 54.7             |
| Italy              | 415  | 32.4 | 34.3 | 23.6 | 6.9  | 2.8                    | 23.6 | 0.0     | 0.4            | 2.4  | 19.5              | 28.3             |
| Japan              | 585  | 12.2 | 17.1 | 60.9 | 9.5  | 0.3                    | 60.9 | 0.2     | 0.1            | 0.0  | 55.0              | 66.7             |
| Jordan             | 630  | 22.0 | 25.5 | 33.8 | 17.0 | 1.6                    | 33.8 | 0.6     | 0.1            | 0.9  | 35.8              | 32.2             |
| Korea, Rep. of     | 763  | 2.4  | 5.9  | 87.0 | 4.5  | 0.3                    | 87.0 | 0.0     | 0.1            | 0.2  | 89.5              | 84.5             |
| Latvia (LSS)       | 355  | 22.2 | 14.1 | 46.5 | 10.7 | 6.5                    | 46.5 | 2.2     | 3.0            | 1.3  | 48.8              | 44.3             |
| Lithuania          | 292  | 25.3 | 15.3 | 51.5 | 4.1  | 3.7                    | 51.5 | 0.8     | 1.2            | 1.7  | 51.8              | 51.3             |
| Macedonia, Rep. of | 506  | 32.0 | 17.6 | 31.5 | 16.3 | 2.6                    | 31.5 | 0.2     | 0.6            | 1.9  | 30.0              | 33.2             |
| Malaysia           | 702  | 24.8 | 44.6 | 26.0 | 3.8  | 0.8                    | 26.0 | 0.0     | 0.4            | 0.4  | 26.7              | 25.1             |
| Moldova            | 477  | 22.7 | 17.5 | 39.1 | 15.0 | 5.6                    | 39.1 | 0.4     | 0.8            | 4.5  | 36.5              | 41.7             |
| Morocco            | 645  | 28.4 | 12.4 | 11.4 | 10.9 | 36.9                   | 11.4 | 0.7     | 31.2           | 5.0  | 12.0              | 10.7             |
| Netherlands        | 365  | 28.3 | 19.2 | 29.9 | 22.0 | 0.5                    | 29.9 | 0.0     | 0.1            | 0.4  | 23.3              | 37.2             |
| New Zealand        | 435  | 18.1 | 34.5 | 29.4 | 16.9 | 1.2                    | 29.4 | 0.4     | 0.0            | 0.8  | 26.1              | 32.6             |
| Philippines        | 848  | 36.6 | 17.9 | 29.0 | 15.4 | 1.1                    | 29.0 | 0.0     | 0.7            | 0.4  | 28.7              | 29.3             |
| Romania            | 431  | 21.9 | 19.3 | 44.1 | 11.2 | 3.5                    | 44.1 | 1.0     | 0.6            | 1.8  | 47.4              | 41.4             |
| Russian Federation | 531  | 15.2 | 17.1 | 41.5 | 24.2 | 2.0                    | 41.5 | 0.5     | 0.9            | 0.7  | 43.1              | 39.7             |
| Singapore          | 624  | 12.4 | 34.7 | 46.4 | 6.2  | 0.2                    | 46.4 | 0.0     | 0.0            | 0.2  | 47.8              | 45.3             |
| Slovak Republic    | 436  | 20.6 | 20.8 | 50.3 | 7.2  | 1.1                    | 50.3 | 1.0     | 0.0            | 0.1  | 47.4              | 53.3             |
| Slovenia           | 389  | 17.7 | 17.6 | 42.8 | 21.2 | 0.7                    | 42.8 | 0.4     | 0.0            | 0.2  | 42.2              | 43.4             |
| South Africa       | 993  | 29.2 | 23.9 | 20.5 | 23.6 | 2.8                    | 20.5 | 0.4     | 1.4            | 1.1  | 19.7              | 21.4             |
| Thailand           | 711  | 3.6  | 28.1 | 59.7 | 8.5  | 0.1                    | 59.7 | 0.0     | 0.0            | 0.1  | 60.4              | 58.8             |
| Tunisia            | 629  | 16.8 | 19.1 | 35.1 | 14.7 | 14.2                   | 35.1 | 12.1    | 1.0            | 1.1  | 34.3              | 36.0             |
| Turkey             | 990  | 15.1 | 24.2 | 51.0 | 8.2  | 1.5                    | 51.0 | 0.0     | 0.3            | 1.2  | 54.2              | 48.1             |
| United States      | 1080 | 19.5 | 29.6 | 39.4 | 10.8 | 0.7                    | 39.4 | 0.0     | 0.4            | 0.4  | 39.8              | 39.0             |
| International Avg. | .    | 20.4 | 23.8 | 40.3 | 12.3 | 3.1                    | 40.3 | 0.7     | 1.3            | 1.1  | 40.2              | 40.5             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent



Science: Earth Science  
 Label: Earth year ( S022290 - Q11 )  
 Item Type = MC Key = D

| COUNTRY            | N    | A    | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 500  | 16.6 | 4.7  | 6.6  | 71.8 | 0.2                    | 71.8 | 0.0     | 0.0            | 0.2  | 67.9              | 76.5             |
| Belgium (Flemish)  | 658  | 26.7 | 6.1  | 8.6  | 57.5 | 1.1                    | 57.5 | 0.1     | 0.6            | 0.4  | 51.0              | 63.6             |
| Bulgaria           | 407  | 18.8 | 1.6  | 5.1  | 68.1 | 6.4                    | 68.1 | 0.0     | 3.3            | 3.0  | 66.5              | 69.7             |
| Canada             | 1082 | 19.3 | 3.3  | 7.0  | 65.3 | 5.1                    | 65.3 | 0.0     | 4.3            | 0.7  | 57.3              | 74.3             |
| Chile              | 725  | 21.1 | 5.0  | 6.5  | 43.2 | 24.2                   | 43.2 | 0.0     | 19.7           | 4.4  | 39.4              | 46.9             |
| Chinese Taipei     | 717  | 27.9 | 3.3  | 10.9 | 58.0 | 0.0                    | 58.0 | 0.0     | 0.0            | 0.0  | 49.1              | 66.9             |
| Cyprus             | 393  | 28.7 | 11.3 | 9.3  | 49.1 | 1.6                    | 49.1 | 0.0     | 0.5            | 1.1  | 40.9              | 56.8             |
| Czech Republic     | 424  | 28.4 | 1.7  | 4.7  | 61.7 | 3.6                    | 61.7 | 0.0     | 2.3            | 1.3  | 52.2              | 71.7             |
| England            | 362  | 17.1 | 3.0  | 6.7  | 71.8 | 1.3                    | 71.8 | 0.3     | 1.1            | 0.0  | 68.3              | 75.5             |
| Finland            | 370  | 25.2 | 3.5  | 9.0  | 60.2 | 2.1                    | 60.2 | 0.0     | 1.3            | 0.8  | 54.2              | 66.5             |
| Hong Kong, SAR     | 644  | 13.4 | 2.3  | 5.0  | 78.3 | 0.9                    | 78.3 | 0.2     | 0.2            | 0.6  | 74.6              | 81.9             |
| Hungary            | 393  | 18.6 | 2.4  | 8.7  | 65.9 | 4.4                    | 65.9 | 0.0     | 1.9            | 2.5  | 59.3              | 72.5             |
| Indonesia          | 725  | 36.9 | 9.5  | 13.3 | 35.5 | 4.8                    | 35.5 | 0.0     | 2.2            | 2.7  | 31.5              | 39.5             |
| Iran, Islamic Rep. | 664  | 26.0 | 3.3  | 10.5 | 53.2 | 6.9                    | 53.2 | 0.0     | 3.2            | 3.7  | 46.3              | 58.0             |
| Israel             | 528  | 21.2 | 6.7  | 15.6 | 48.2 | 8.4                    | 48.2 | 0.0     | 3.7            | 4.7  | 44.4              | 53.0             |
| Italy              | 415  | 25.1 | 2.8  | 5.5  | 58.3 | 8.3                    | 58.3 | 0.0     | 5.0            | 3.3  | 54.5              | 62.5             |
| Japan              | 584  | 21.3 | 5.9  | 5.9  | 66.4 | 0.5                    | 66.4 | 0.0     | 0.5            | 0.0  | 55.0              | 77.7             |
| Jordan             | 631  | 32.9 | 7.8  | 16.4 | 39.5 | 3.3                    | 39.5 | 0.7     | 0.6            | 2.0  | 37.3              | 41.5             |
| Korea, Rep. of     | 763  | 24.8 | 5.6  | 8.7  | 60.6 | 0.3                    | 60.6 | 0.0     | 0.3            | 0.0  | 53.1              | 68.1             |
| Latvia (LSS)       | 354  | 39.5 | 2.7  | 11.1 | 42.8 | 3.8                    | 42.8 | 0.4     | 1.0            | 2.4  | 36.2              | 48.6             |
| Lithuania          | 292  | 36.7 | 2.7  | 10.8 | 38.9 | 10.9                   | 38.9 | 0.0     | 4.4            | 6.5  | 32.1              | 46.5             |
| Macedonia, Rep. of | 506  | 35.1 | 6.3  | 7.9  | 40.1 | 10.6                   | 40.1 | 0.3     | 3.0            | 7.2  | 35.0              | 45.5             |
| Malaysia           | 702  | 14.4 | 8.7  | 11.7 | 61.6 | 3.5                    | 61.6 | 0.0     | 1.9            | 1.6  | 57.0              | 67.2             |
| Moldova            | 477  | 27.0 | 3.6  | 8.2  | 51.8 | 9.3                    | 51.8 | 0.0     | 2.0            | 7.3  | 45.6              | 57.9             |
| Morocco            | 655  | 26.7 | 10.1 | 14.5 | 43.8 | 5.0                    | 43.8 | 1.2     | 0.0            | 3.8  | 36.1              | 49.6             |
| Netherlands        | 365  | 22.4 | 6.0  | 13.1 | 58.2 | 0.4                    | 58.2 | 0.0     | 0.0            | 0.4  | 46.9              | 70.6             |
| New Zealand        | 431  | 17.1 | 10.3 | 8.4  | 63.1 | 1.1                    | 63.1 | 0.0     | 0.9            | 0.2  | 63.0              | 63.1             |
| Philippines        | 849  | 37.0 | 9.4  | 10.9 | 40.3 | 2.4                    | 40.3 | 0.0     | 1.2            | 1.2  | 36.7              | 44.6             |
| Romania            | 431  | 36.7 | 5.3  | 8.8  | 41.6 | 7.7                    | 41.6 | 1.1     | 2.9            | 3.7  | 40.6              | 42.8             |
| Russian Federation | 531  | 23.3 | 4.3  | 4.9  | 56.1 | 11.2                   | 56.1 | 0.5     | 5.2            | 5.5  | 52.7              | 59.9             |
| Singapore          | 624  | 25.9 | 3.7  | 7.3  | 62.5 | 0.5                    | 62.5 | 0.0     | 0.0            | 0.5  | 56.7              | 67.1             |
| Slovak Republic    | 436  | 20.7 | 2.0  | 3.0  | 69.3 | 5.0                    | 69.3 | 0.3     | 2.1            | 2.6  | 62.5              | 76.0             |
| Slovenia           | 387  | 24.4 | 2.8  | 4.7  | 66.6 | 1.6                    | 66.6 | 0.4     | 0.0            | 1.2  | 60.8              | 72.1             |
| South Africa       | 990  | 32.2 | 11.7 | 17.6 | 28.3 | 10.2                   | 28.3 | 0.6     | 7.4            | 2.3  | 27.6              | 29.0             |
| Thailand           | 711  | 16.4 | 6.8  | 13.4 | 61.5 | 1.8                    | 61.5 | 0.0     | 1.1            | 0.7  | 60.6              | 62.5             |
| Tunisia            | 630  | 18.8 | 11.9 | 21.0 | 30.4 | 17.8                   | 30.4 | 2.5     | 9.5            | 5.9  | 26.9              | 34.1             |
| Turkey             | 990  | 35.8 | 7.8  | 14.2 | 38.2 | 4.0                    | 38.2 | 0.1     | 1.4            | 2.6  | 33.4              | 42.4             |
| United States      | 1091 | 22.5 | 5.0  | 6.5  | 64.2 | 1.7                    | 64.2 | 0.0     | 0.8            | 1.0  | 55.8              | 72.3             |
| International Avg. | .    | 25.3 | 5.6  | 9.5  | 54.5 | 5.1                    | 54.5 | 0.2     | 2.5            | 2.3  | 49.2              | 59.9             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Physics  
 Label: Water level in U-tube ( S022292 - Q12 )  
 Item Type = SA Key = X

| COUNTRY            | N    | 10   | 70   | 71   | 72   | 73   | 79   | 99   | V1   | NOT REACH |      | 1.GIRL  | 2.BOY   |
|--------------------|------|------|------|------|------|------|------|------|------|-----------|------|---------|---------|
|                    |      |      |      |      |      |      |      |      |      | ED        | OMIT | % Right | % Right |
| Australia          | 500  | 52.0 | 6.3  | 10.1 | 10.5 | 8.5  | 7.2  | 5.4  | 52.0 | 0.0       | 5.4  | 46.0    | 59.1    |
| Belgium (Flemish)  | 658  | 60.8 | 9.0  | 5.9  | 12.8 | 1.9  | 8.3  | 1.2  | 60.8 | 0.6       | 0.6  | 52.1    | 69.0    |
| Bulgaria           | 406  | 58.3 | 1.0  | 3.2  | 3.0  | 0.9  | 17.1 | 16.5 | 58.3 | 3.6       | 12.9 | 50.6    | 65.9    |
| Canada             | 1082 | 46.2 | 4.9  | 6.9  | 13.6 | 4.2  | 16.1 | 8.1  | 46.2 | 4.3       | 3.8  | 39.3    | 53.8    |
| Chile              | 725  | 16.6 | 4.8  | 4.9  | 14.2 | 11.1 | 11.7 | 36.7 | 16.6 | 21.3      | 15.4 | 13.7    | 19.5    |
| Chinese Taipei     | 717  | 58.4 | 3.1  | 8.7  | 9.1  | 3.4  | 14.3 | 3.1  | 58.4 | 0.0       | 3.1  | 53.9    | 62.9    |
| Cyprus             | 393  | 23.7 | 8.1  | 4.8  | 16.2 | 6.3  | 24.1 | 16.8 | 23.7 | 0.5       | 16.3 | 18.5    | 28.4    |
| Czech Republic     | 424  | 58.4 | 7.0  | 6.2  | 9.1  | 4.0  | 8.8  | 6.5  | 58.4 | 2.3       | 4.3  | 48.4    | 69.1    |
| England            | 362  | 41.5 | 5.4  | 9.3  | 9.2  | 15.9 | 16.4 | 2.3  | 41.5 | 1.1       | 1.3  | 35.3    | 48.0    |
| Finland            | 370  | 52.0 | 5.0  | 10.3 | 14.2 | 10.4 | 5.4  | 2.6  | 52.0 | 1.3       | 1.4  | 45.9    | 58.2    |
| Hong Kong, SAR     | 644  | 57.7 | 4.1  | 6.7  | 9.0  | 9.7  | 9.3  | 3.4  | 57.7 | 0.2       | 3.2  | 51.2    | 64.1    |
| Hungary            | 393  | 55.6 | 6.2  | 4.1  | 12.8 | 2.2  | 13.2 | 5.9  | 55.6 | 2.1       | 3.8  | 41.3    | 70.0    |
| Indonesia          | 724  | 39.1 | 5.8  | 2.8  | 13.5 | 8.9  | 7.4  | 22.5 | 39.1 | 2.5       | 20.1 | 30.2    | 48.1    |
| Iran, Islamic Rep. | 664  | 16.8 | 7.0  | 3.2  | 19.9 | 3.1  | 29.0 | 21.0 | 16.8 | 3.6       | 17.4 | 11.0    | 20.8    |
| Israel             | 528  | 23.2 | 3.9  | 4.3  | 19.1 | 3.4  | 25.3 | 21.0 | 23.2 | 4.6       | 16.3 | 18.4    | 29.1    |
| Italy              | 415  | 33.0 | 4.2  | 3.4  | 26.5 | 2.7  | 12.7 | 17.5 | 33.0 | 5.0       | 12.5 | 28.6    | 37.9    |
| Japan              | 584  | 65.5 | 6.4  | 8.8  | 6.1  | 4.0  | 7.3  | 1.9  | 65.5 | 0.5       | 1.4  | 63.4    | 67.7    |
| Jordan             | 631  | 31.4 | 10.6 | 7.2  | 11.1 | 2.2  | 27.7 | 9.9  | 31.4 | 0.8       | 9.1  | 28.4    | 34.0    |
| Korea, Rep. of     | 760  | 62.2 | 6.4  | 9.2  | 10.6 | 8.3  | 1.0  | 2.3  | 62.2 | 0.3       | 2.0  | 57.2    | 67.2    |
| Latvia (LSS)       | 354  | 58.2 | 4.7  | 12.7 | 13.7 | 0.5  | 3.6  | 6.6  | 58.2 | 1.0       | 5.6  | 45.3    | 69.5    |
| Lithuania          | 292  | 48.4 | 6.3  | 5.7  | 11.2 | 1.3  | 8.2  | 18.9 | 48.4 | 5.9       | 13.0 | 37.7    | 60.5    |
| Macedonia, Rep. of | 506  | 38.4 | 2.4  | 2.5  | 1.9  | 1.1  | 21.0 | 32.8 | 38.4 | 3.6       | 29.2 | 32.0    | 45.3    |
| Malaysia           | 702  | 49.6 | 4.4  | 4.4  | 12.7 | 8.5  | 10.3 | 10.1 | 49.6 | 2.6       | 7.5  | 41.9    | 59.0    |
| Moldova            | 477  | 69.3 | 2.6  | 2.3  | 12.2 | 2.2  | 3.0  | 8.4  | 69.3 | 2.0       | 6.4  | 64.0    | 74.5    |
| Morocco            | 655  | 27.3 | 6.7  | 2.2  | 6.8  | 0.5  | 40.0 | 16.5 | 27.3 | 0.0       | 16.5 | 17.1    | 35.0    |
| Netherlands        | 365  | 48.6 | 9.4  | 6.3  | 14.7 | 10.2 | 6.7  | 4.2  | 48.6 | 0.0       | 4.2  | 37.8    | 60.4    |
| New Zealand        | 431  | 42.1 | 3.7  | 7.6  | 14.0 | 17.1 | 9.2  | 6.4  | 42.1 | 0.9       | 5.5  | 35.7    | 48.2    |
| Philippines        | 849  | 10.3 | 2.9  | 2.0  | 9.3  | 1.2  | 28.9 | 45.3 | 10.3 | 1.2       | 44.1 | 7.5     | 13.6    |
| Romania            | 431  | 36.7 | 8.1  | 6.8  | 12.7 | 2.1  | 14.7 | 18.9 | 36.7 | 2.9       | 16.0 | 26.3    | 46.9    |
| Russian Federation | 531  | 57.0 | 2.8  | 5.9  | 8.9  | 4.6  | 4.2  | 16.7 | 57.0 | 5.7       | 11.0 | 49.4    | 65.4    |
| Singapore          | 624  | 64.5 | 4.2  | 9.5  | 7.0  | 4.0  | 7.9  | 2.9  | 64.5 | 0.2       | 2.7  | 58.5    | 69.3    |
| Slovak Republic    | 436  | 66.2 | 2.5  | 3.1  | 2.8  | 1.4  | 14.8 | 9.1  | 66.2 | 2.1       | 7.0  | 58.5    | 73.9    |
| Slovenia           | 387  | 56.7 | 4.5  | 3.7  | 13.8 | 6.5  | 10.8 | 4.1  | 56.7 | 0.0       | 4.1  | 48.5    | 64.6    |
| South Africa       | 990  | 7.0  | 3.5  | 2.5  | 8.9  | 1.2  | 27.4 | 49.5 | 7.0  | 7.6       | 41.9 | 4.6     | 9.7     |
| Thailand           | 711  | 49.2 | 5.4  | 3.8  | 11.7 | 6.8  | 13.3 | 9.9  | 49.2 | 1.2       | 8.7  | 43.3    | 56.2    |
| Tunisia            | 629  | 20.6 | 7.4  | 8.4  | 7.1  | 5.6  | 26.1 | 24.9 | 20.6 | 10.9      | 14.0 | 16.7    | 24.6    |
| Turkey             | 990  | 36.6 | 9.3  | 2.8  | 5.4  | 2.0  | 19.1 | 24.8 | 36.6 | 1.4       | 23.4 | 34.3    | 38.7    |
| United States      | 1091 | 30.0 | 2.2  | 5.7  | 19.6 | 7.3  | 25.1 | 10.1 | 30.0 | 1.1       | 9.0  | 21.8    | 37.9    |
| International Avg. | .    | 43.9 | 5.3  | 5.7  | 11.4 | 5.1  | 14.6 | 13.8 | 43.9 | 2.7       | 11.1 | 37.2    | 50.7    |

V1 = % Scoring 1 or better V2 = % Scoring 2 or better V3 = % Scoring 3 or better  
 Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.  
 Because of missing gender information, some totals may appear inconsistent

Science: Physics  
 Label: Alcohol/glass expansion in thermometer ( S022054 - Q13 )  
 Item Type = MC Key = D

| COUNTRY            | N    | A    | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 500  | 8.8  | 28.3 | 9.2  | 53.2 | 0.5                    | 53.2 | 0.0     | 0.0            | 0.5  | 50.1              | 56.8             |
| Belgium (Flemish)  | 658  | 2.8  | 12.6 | 7.8  | 74.7 | 2.1                    | 74.7 | 0.1     | 0.7            | 1.3  | 72.2              | 77.0             |
| Bulgaria           | 407  | 5.7  | 14.4 | 8.6  | 61.9 | 9.5                    | 61.9 | 0.6     | 3.6            | 5.3  | 65.5              | 58.3             |
| Canada             | 1082 | 7.2  | 26.4 | 9.5  | 51.4 | 5.5                    | 51.4 | 0.1     | 4.6            | 0.8  | 49.5              | 53.8             |
| Chile              | 725  | 8.8  | 18.5 | 8.8  | 31.0 | 32.9                   | 31.0 | 0.0     | 25.9           | 7.0  | 29.6              | 32.3             |
| Chinese Taipei     | 717  | 6.0  | 8.9  | 21.5 | 63.1 | 0.4                    | 63.1 | 0.1     | 0.0            | 0.3  | 59.5              | 66.7             |
| Cyprus             | 389  | 10.2 | 34.9 | 20.7 | 29.9 | 4.3                    | 29.9 | 0.0     | 0.8            | 3.5  | 34.0              | 26.2             |
| Czech Republic     | 424  | 0.6  | 15.3 | 7.4  | 67.0 | 9.6                    | 67.0 | 0.0     | 2.3            | 7.3  | 65.6              | 68.5             |
| England            | 362  | 7.0  | 26.5 | 11.8 | 51.9 | 2.8                    | 51.9 | 0.0     | 1.1            | 1.7  | 50.6              | 53.3             |
| Finland            | 370  | 4.1  | 21.1 | 5.9  | 64.6 | 4.2                    | 64.6 | 0.2     | 1.3            | 2.8  | 64.0              | 65.3             |
| Hong Kong, SAR     | 644  | 4.3  | 7.8  | 15.7 | 70.8 | 1.4                    | 70.8 | 0.2     | 0.2            | 1.1  | 67.6              | 73.9             |
| Hungary            | 393  | 3.6  | 13.6 | 7.9  | 67.7 | 7.2                    | 67.7 | 0.0     | 2.7            | 4.6  | 64.4              | 71.0             |
| Indonesia          | 724  | 4.7  | 26.2 | 14.8 | 46.3 | 8.1                    | 46.3 | 0.0     | 3.5            | 4.6  | 46.2              | 46.4             |
| Iran, Islamic Rep. | 664  | 8.3  | 22.9 | 23.0 | 36.0 | 9.8                    | 36.0 | 0.0     | 3.6            | 6.2  | 37.9              | 34.6             |
| Israel             | 528  | 7.5  | 18.6 | 11.6 | 48.6 | 13.7                   | 48.6 | 0.1     | 5.9            | 7.7  | 44.6              | 53.4             |
| Italy              | 415  | 7.0  | 23.1 | 12.7 | 48.1 | 9.2                    | 48.1 | 0.0     | 5.1            | 4.1  | 46.3              | 50.1             |
| Japan              | 584  | 4.4  | 19.2 | 14.2 | 61.2 | 1.1                    | 61.2 | 0.2     | 0.5            | 0.4  | 61.9              | 60.4             |
| Jordan             | 627  | 6.1  | 21.6 | 16.9 | 51.4 | 4.1                    | 51.4 | 0.0     | 0.9            | 3.1  | 48.6              | 53.8             |
| Korea, Rep. of     | 763  | 4.3  | 19.0 | 17.6 | 58.3 | 0.8                    | 58.3 | 0.1     | 0.3            | 0.4  | 56.3              | 60.3             |
| Latvia (LSS)       | 354  | 0.9  | 12.6 | 9.5  | 68.2 | 8.8                    | 68.2 | 0.0     | 2.0            | 6.8  | 67.9              | 68.5             |
| Lithuania          | 292  | 4.8  | 8.3  | 14.6 | 59.2 | 13.0                   | 59.2 | 0.3     | 7.2            | 5.6  | 51.4              | 67.9             |
| Macedonia, Rep. of | 506  | 6.5  | 15.9 | 16.6 | 45.8 | 15.3                   | 45.8 | 0.0     | 5.0            | 10.3 | 44.9              | 46.7             |
| Malaysia           | 702  | 5.7  | 19.5 | 22.6 | 46.2 | 6.0                    | 46.2 | 0.0     | 3.6            | 2.4  | 43.7              | 49.2             |
| Moldova            | 477  | 6.2  | 21.0 | 19.5 | 42.1 | 11.2                   | 42.1 | 0.0     | 2.2            | 9.0  | 44.3              | 40.0             |
| Morocco            | 655  | 4.1  | 15.3 | 18.0 | 58.7 | 3.9                    | 58.7 | 0.9     | 0.0            | 2.9  | 56.5              | 60.6             |
| Netherlands        | 365  | 2.7  | 12.0 | 15.2 | 69.6 | 0.5                    | 69.6 | 0.0     | 0.0            | 0.5  | 63.3              | 76.6             |
| New Zealand        | 431  | 7.8  | 34.5 | 9.5  | 45.5 | 2.7                    | 45.5 | 0.0     | 1.1            | 1.6  | 48.7              | 42.5             |
| Philippines        | 849  | 5.5  | 27.2 | 28.1 | 35.8 | 3.4                    | 35.8 | 0.0     | 1.8            | 1.7  | 42.1              | 28.4             |
| Romania            | 431  | 4.4  | 26.8 | 8.2  | 53.9 | 6.7                    | 53.9 | 0.0     | 3.4            | 3.3  | 49.9              | 57.4             |
| Russian Federation | 531  | 8.5  | 14.2 | 6.8  | 54.4 | 16.1                   | 54.4 | 0.0     | 7.3            | 8.8  | 54.6              | 54.2             |
| Singapore          | 624  | 2.6  | 11.6 | 15.6 | 69.0 | 1.2                    | 69.0 | 0.0     | 0.2            | 1.0  | 61.5              | 74.9             |
| Slovak Republic    | 436  | 3.6  | 21.9 | 6.6  | 58.3 | 9.6                    | 58.3 | 0.0     | 3.0            | 6.6  | 47.4              | 69.3             |
| Slovenia           | 387  | 1.8  | 19.2 | 9.9  | 65.0 | 4.1                    | 65.0 | 0.0     | 0.0            | 4.1  | 59.6              | 70.2             |
| South Africa       | 990  | 11.1 | 29.2 | 21.7 | 26.0 | 12.0                   | 26.0 | 0.0     | 9.3            | 2.7  | 25.6              | 26.6             |
| Thailand           | 711  | 4.2  | 23.4 | 18.3 | 50.9 | 3.2                    | 50.9 | 0.0     | 1.9            | 1.2  | 52.4              | 49.2             |
| Tunisia            | 630  | 5.8  | 28.6 | 17.2 | 27.0 | 21.5                   | 27.0 | 2.6     | 11.7           | 7.1  | 28.6              | 25.4             |
| Turkey             | 990  | 6.6  | 16.1 | 27.1 | 45.6 | 4.5                    | 45.6 | 0.0     | 1.6            | 2.9  | 45.5              | 45.8             |
| United States      | 1091 | 6.8  | 31.5 | 12.9 | 46.3 | 2.5                    | 46.3 | 0.0     | 1.3            | 1.1  | 42.2              | 50.2             |
| International Avg. | .    | 5.5  | 20.2 | 14.3 | 52.8 | 7.2                    | 52.8 | 0.2     | 3.3            | 3.7  | 51.2              | 54.4             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Chemistry  
 Label: Sugar dissolving in water ( S022181 - Q14 )  
 Item Type = MC Key = B

| COUNTRY            | N    | A    | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 500  | 4.8  | 41.6 | 14.9 | 38.2 | 0.5                    | 41.6 | 0.2     | 0.0            | 0.3  | 35.0              | 49.3             |
| Belgium (Flemish)  | 658  | 7.3  | 55.9 | 9.0  | 25.7 | 2.1                    | 55.9 | 0.0     | 0.9            | 1.2  | 54.8              | 56.8             |
| Bulgaria           | 407  | 4.1  | 59.6 | 5.8  | 23.6 | 6.9                    | 59.6 | 0.4     | 4.0            | 2.6  | 58.4              | 60.7             |
| Canada             | 1082 | 4.0  | 43.0 | 12.0 | 36.0 | 5.1                    | 43.0 | 0.1     | 4.8            | 0.2  | 40.0              | 46.5             |
| Chile              | 725  | 8.9  | 10.5 | 10.6 | 37.4 | 32.6                   | 10.5 | 0.0     | 28.8           | 3.8  | 10.4              | 10.6             |
| Chinese Taipei     | 717  | 0.5  | 73.1 | 2.7  | 23.5 | 0.1                    | 73.1 | 0.0     | 0.0            | 0.1  | 70.6              | 75.5             |
| Cyprus             | 392  | 6.5  | 21.6 | 13.0 | 56.5 | 2.4                    | 21.6 | 0.0     | 1.5            | 0.9  | 17.1              | 25.9             |
| Czech Republic     | 424  | 1.5  | 43.8 | 2.1  | 45.6 | 7.0                    | 43.8 | 0.0     | 4.8            | 2.1  | 42.6              | 45.1             |
| England            | 362  | 5.4  | 51.6 | 12.7 | 28.1 | 2.1                    | 51.6 | 0.0     | 1.6            | 0.5  | 48.6              | 54.9             |
| Finland            | 370  | 2.6  | 67.2 | 7.4  | 19.7 | 3.0                    | 67.2 | 0.0     | 2.0            | 1.0  | 64.9              | 69.6             |
| Hong Kong, SAR     | 644  | 1.8  | 53.8 | 2.9  | 40.2 | 1.3                    | 53.8 | 0.3     | 0.2            | 0.8  | 49.8              | 57.7             |
| Hungary            | 393  | 0.7  | 52.3 | 3.0  | 39.5 | 4.5                    | 52.3 | 0.8     | 2.9            | 0.8  | 47.7              | 56.8             |
| Indonesia          | 725  | 10.1 | 20.8 | 10.8 | 52.1 | 6.2                    | 20.8 | 0.0     | 3.9            | 2.3  | 20.1              | 21.4             |
| Iran, Islamic Rep. | 664  | 12.9 | 20.2 | 8.4  | 51.9 | 6.5                    | 20.2 | 0.0     | 3.7            | 2.8  | 19.0              | 21.0             |
| Israel             | 528  | 5.2  | 49.5 | 11.0 | 25.8 | 8.6                    | 49.5 | 0.0     | 7.0            | 1.6  | 46.2              | 53.7             |
| Italy              | 415  | 7.4  | 43.4 | 8.8  | 31.6 | 8.8                    | 43.4 | 0.0     | 5.6            | 3.2  | 45.7              | 40.7             |
| Japan              | 584  | 5.1  | 69.3 | 4.0  | 20.6 | 1.0                    | 69.3 | 0.1     | 0.5            | 0.4  | 66.9              | 71.7             |
| Jordan             | 627  | 10.9 | 34.5 | 10.9 | 41.1 | 2.6                    | 34.5 | 0.2     | 1.1            | 1.3  | 34.9              | 34.2             |
| Korea, Rep. of     | 763  | 1.2  | 87.8 | 4.1  | 6.6  | 0.3                    | 87.8 | 0.0     | 0.3            | 0.0  | 85.4              | 90.1             |
| Latvia (LSS)       | 354  | 1.9  | 40.7 | 6.8  | 43.8 | 6.8                    | 40.7 | 0.5     | 3.3            | 3.0  | 41.0              | 40.4             |
| Lithuania          | 292  | 7.3  | 37.5 | 2.5  | 42.0 | 10.8                   | 37.5 | 0.0     | 7.7            | 3.0  | 35.4              | 39.7             |
| Macedonia, Rep. of | 506  | 11.1 | 46.2 | 6.5  | 24.9 | 11.3                   | 46.2 | 0.3     | 5.8            | 5.3  | 45.6              | 46.9             |
| Malaysia           | 702  | 1.1  | 50.6 | 9.2  | 34.9 | 4.3                    | 50.6 | 0.0     | 4.1            | 0.2  | 49.9              | 51.4             |
| Moldova            | 477  | 11.2 | 39.7 | 9.5  | 31.2 | 8.4                    | 39.7 | 0.2     | 4.3            | 3.9  | 42.7              | 36.8             |
| Morocco            | 655  | 13.6 | 38.5 | 7.0  | 39.3 | 1.6                    | 38.5 | 0.3     | 0.0            | 1.3  | 40.2              | 37.4             |
| Netherlands        | 365  | 7.2  | 54.8 | 17.9 | 19.5 | 0.6                    | 54.8 | 0.0     | 0.1            | 0.5  | 57.4              | 51.9             |
| New Zealand        | 431  | 4.6  | 38.8 | 15.8 | 37.6 | 3.3                    | 38.8 | 1.1     | 1.1            | 1.1  | 38.0              | 39.5             |
| Philippines        | 849  | 4.3  | 15.8 | 23.4 | 52.8 | 3.6                    | 15.8 | 0.0     | 2.0            | 1.6  | 13.7              | 18.3             |
| Romania            | 431  | 6.4  | 37.6 | 9.8  | 40.9 | 5.3                    | 37.6 | 0.3     | 3.6            | 1.4  | 36.9              | 37.8             |
| Russian Federation | 531  | 1.1  | 53.1 | 4.4  | 28.8 | 12.6                   | 53.1 | 0.1     | 8.0            | 4.5  | 50.0              | 56.7             |
| Singapore          | 624  | 1.1  | 48.4 | 4.3  | 45.6 | 0.5                    | 48.4 | 0.0     | 0.4            | 0.2  | 43.5              | 52.3             |
| Slovak Republic    | 436  | 5.4  | 54.4 | 7.8  | 27.9 | 4.4                    | 54.4 | 0.0     | 4.1            | 0.3  | 54.3              | 54.5             |
| Slovenia           | 387  | 8.0  | 46.0 | 4.8  | 39.9 | 1.3                    | 46.0 | 0.2     | 0.0            | 1.1  | 45.4              | 46.5             |
| South Africa       | 990  | 8.4  | 32.8 | 21.6 | 24.6 | 12.6                   | 32.8 | 0.1     | 10.7           | 1.7  | 32.9              | 32.8             |
| Thailand           | 711  | 8.4  | 33.7 | 18.6 | 36.2 | 3.0                    | 33.7 | 0.0     | 2.6            | 0.4  | 31.3              | 36.6             |
| Tunisia            | 630  | 16.5 | 28.0 | 9.1  | 28.0 | 18.5                   | 28.0 | 2.2     | 13.2           | 3.0  | 28.4              | 27.5             |
| Turkey             | 990  | 11.4 | 59.4 | 11.1 | 16.0 | 2.2                    | 59.4 | 0.0     | 1.7            | 0.5  | 63.6              | 55.6             |
| United States      | 1091 | 5.7  | 37.1 | 14.8 | 40.5 | 1.9                    | 37.1 | 0.0     | 1.7            | 0.2  | 31.2              | 42.8             |
| International Avg. | .    | 6.2  | 44.5 | 9.4  | 34.2 | 5.7                    | 44.5 | 0.2     | 3.9            | 1.6  | 43.2              | 46.0             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Chemistry  
 Label: NOT a chemical change ( S022208 - Q15 )  
 Item Type = MC Key = A

| COUNTRY            | N    | A    | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 500  | 46.0 | 15.9 | 12.7 | 24.5 | 0.9                    | 46.0 | 0.3     | 0.0            | 0.6  | 44.1              | 48.3             |
| Belgium (Flemish)  | 658  | 33.9 | 19.0 | 19.9 | 25.2 | 1.9                    | 33.9 | 0.0     | 1.2            | 0.7  | 29.8              | 37.7             |
| Bulgaria           | 407  | 49.0 | 12.1 | 10.7 | 21.5 | 6.7                    | 49.0 | 1.1     | 4.0            | 1.7  | 50.5              | 47.5             |
| Canada             | 1082 | 40.6 | 18.8 | 11.8 | 23.7 | 5.2                    | 40.6 | 0.0     | 4.9            | 0.3  | 40.0              | 41.4             |
| Chile              | 725  | 18.4 | 17.0 | 10.1 | 20.3 | 34.2                   | 18.4 | 0.0     | 30.5           | 3.7  | 17.4              | 19.3             |
| Chinese Taipei     | 717  | 80.2 | 3.1  | 4.4  | 12.0 | 0.2                    | 80.2 | 0.1     | 0.0            | 0.1  | 81.1              | 79.4             |
| Cyprus             | 392  | 42.5 | 16.9 | 18.5 | 18.2 | 3.9                    | 42.5 | 0.8     | 1.5            | 1.5  | 42.9              | 42.2             |
| Czech Republic     | 424  | 33.9 | 6.8  | 3.1  | 49.8 | 6.3                    | 33.9 | 0.0     | 4.8            | 1.5  | 31.6              | 36.4             |
| England            | 362  | 37.3 | 13.7 | 16.3 | 30.5 | 2.1                    | 37.3 | 0.0     | 1.6            | 0.5  | 33.2              | 41.5             |
| Finland            | 370  | 37.8 | 18.1 | 11.1 | 28.3 | 4.7                    | 37.8 | 0.0     | 2.3            | 2.4  | 38.9              | 36.7             |
| Hong Kong, SAR     | 644  | 38.7 | 7.3  | 16.2 | 36.8 | 0.9                    | 38.7 | 0.2     | 0.2            | 0.6  | 37.2              | 40.2             |
| Hungary            | 393  | 51.6 | 4.3  | 5.4  | 34.8 | 3.9                    | 51.6 | 0.5     | 2.9            | 0.5  | 45.8              | 57.3             |
| Indonesia          | 725  | 25.8 | 22.3 | 16.5 | 29.8 | 5.6                    | 25.8 | 0.0     | 4.6            | 0.9  | 26.0              | 25.6             |
| Iran, Islamic Rep. | 664  | 47.5 | 15.2 | 11.4 | 19.2 | 6.6                    | 47.5 | 0.0     | 3.7            | 2.9  | 50.7              | 45.4             |
| Israel             | 528  | 31.9 | 11.7 | 14.5 | 31.3 | 10.7                   | 31.9 | 0.6     | 7.0            | 3.1  | 31.4              | 32.5             |
| Italy              | 415  | 36.4 | 15.0 | 14.9 | 25.1 | 8.6                    | 36.4 | 0.0     | 6.5            | 2.1  | 33.8              | 39.3             |
| Japan              | 584  | 39.4 | 2.5  | 8.6  | 47.9 | 1.7                    | 39.4 | 0.6     | 0.7            | 0.4  | 36.3              | 42.5             |
| Jordan             | 627  | 44.3 | 17.9 | 11.8 | 22.6 | 3.3                    | 44.3 | 0.6     | 1.1            | 1.7  | 48.1              | 41.1             |
| Korea, Rep. of     | 763  | 62.0 | 8.3  | 10.4 | 18.9 | 0.4                    | 62.0 | 0.0     | 0.3            | 0.1  | 61.9              | 62.1             |
| Latvia (LSS)       | 354  | 49.3 | 9.3  | 8.4  | 25.1 | 7.9                    | 49.3 | 1.5     | 3.7            | 2.6  | 51.7              | 47.3             |
| Lithuania          | 292  | 45.5 | 10.9 | 8.8  | 23.1 | 11.7                   | 45.5 | 0.0     | 8.5            | 3.2  | 44.9              | 46.2             |
| Macedonia, Rep. of | 506  | 41.9 | 14.4 | 11.9 | 20.5 | 11.4                   | 41.9 | 0.3     | 6.0            | 5.0  | 45.8              | 37.7             |
| Malaysia           | 702  | 48.7 | 12.8 | 10.9 | 22.2 | 5.3                    | 48.7 | 0.0     | 4.1            | 1.3  | 49.6              | 47.7             |
| Moldova            | 477  | 40.1 | 12.1 | 14.9 | 24.0 | 9.0                    | 40.1 | 0.5     | 4.5            | 4.0  | 40.8              | 39.4             |
| Morocco            | 655  | 27.6 | 18.8 | 20.8 | 26.3 | 6.4                    | 27.6 | 0.6     | 0.0            | 5.8  | 29.2              | 26.4             |
| Netherlands        | 365  | 39.5 | 25.2 | 6.1  | 27.9 | 1.3                    | 39.5 | 0.0     | 0.6            | 0.7  | 33.4              | 46.1             |
| New Zealand        | 431  | 28.4 | 19.5 | 18.0 | 31.5 | 2.6                    | 28.4 | 0.4     | 1.4            | 0.8  | 28.0              | 28.8             |
| Philippines        | 849  | 38.9 | 18.9 | 17.9 | 20.3 | 3.9                    | 38.9 | 0.0     | 2.3            | 1.6  | 37.5              | 40.6             |
| Romania            | 431  | 40.8 | 13.1 | 10.5 | 27.1 | 8.4                    | 40.8 | 2.3     | 3.6            | 2.6  | 37.6              | 44.3             |
| Russian Federation | 531  | 45.0 | 8.2  | 4.7  | 24.7 | 17.4                   | 45.0 | 2.0     | 8.1            | 7.3  | 44.3              | 45.7             |
| Singapore          | 624  | 64.6 | 7.3  | 6.7  | 20.9 | 0.5                    | 64.6 | 0.0     | 0.4            | 0.2  | 64.6              | 64.6             |
| Slovak Republic    | 436  | 42.9 | 13.7 | 10.6 | 27.1 | 5.7                    | 42.9 | 0.0     | 4.4            | 1.4  | 41.3              | 44.5             |
| Slovenia           | 387  | 35.5 | 26.1 | 15.4 | 22.9 | 0.2                    | 35.5 | 0.0     | 0.0            | 0.2  | 31.9              | 38.9             |
| South Africa       | 990  | 27.3 | 17.4 | 16.7 | 25.7 | 12.9                   | 27.3 | 0.1     | 10.9           | 1.9  | 27.6              | 27.0             |
| Thailand           | 711  | 26.2 | 27.9 | 12.1 | 30.7 | 3.0                    | 26.2 | 0.2     | 2.6            | 0.3  | 24.7              | 28.1             |
| Tunisia            | 630  | 29.7 | 12.3 | 12.6 | 18.7 | 26.8                   | 29.7 | 8.4     | 13.2           | 5.1  | 32.8              | 26.4             |
| Turkey             | 990  | 26.3 | 30.8 | 19.5 | 20.9 | 2.5                    | 26.3 | 0.0     | 1.7            | 0.8  | 24.6              | 27.7             |
| United States      | 1091 | 43.7 | 16.5 | 13.5 | 23.9 | 2.5                    | 43.7 | 0.0     | 1.8            | 0.7  | 42.0              | 45.3             |
| International Avg. | .    | 40.5 | 14.8 | 12.3 | 25.9 | 6.5                    | 40.5 | 0.6     | 4.1            | 1.9  | 39.8              | 41.3             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Earth Science  
 Label: Light from sun and moon ( S022078 - Q16 )  
 Item Type = SA Key = X

| COUNTRY            | N    | NOT REACHED |      |     |     |      |     |     |      |      |      | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |      |
|--------------------|------|-------------|------|-----|-----|------|-----|-----|------|------|------|------|-------------------|------------------|------|
|                    |      | 10          | 11   | 19  | 70  | 71   | 72  | 77  | 79   | 99   | V1   |      |                   |                  |      |
| Australia          | 500  | 67.3        | 0.8  | 0.0 | 1.2 | 4.9  | 0.5 | 0.0 | 14.0 | 11.3 | 68.0 | 0.0  | 11.3              | 65.7             | 70.8 |
| Belgium (Flemish)  | 658  | 58.3        | 9.9  | 0.5 | 0.7 | 3.3  | 0.6 | 0.0 | 14.1 | 12.5 | 68.8 | 1.2  | 11.3              | 70.4             | 67.3 |
| Bulgaria           | 407  | 27.6        | 11.5 | 2.6 | 0.4 | 2.6  | 0.2 | 0.0 | 13.5 | 41.5 | 41.7 | 4.1  | 37.4              | 40.4             | 43.0 |
| Canada             | 1082 | 55.7        | 6.7  | 0.0 | 1.6 | 4.0  | 0.5 | 0.0 | 16.0 | 15.6 | 62.4 | 4.9  | 10.7              | 57.6             | 67.9 |
| Chile              | 726  | 22.0        | 0.2  | 0.0 | 0.4 | 3.9  | 1.2 | 2.5 | 10.8 | 59.0 | 22.3 | 31.8 | 27.2              | 14.7             | 29.6 |
| Chinese Taipei     | 717  | 67.0        | 1.4  | 4.3 | 3.5 | 4.6  | 0.4 | 0.0 | 11.9 | 7.0  | 72.7 | 0.0  | 7.0               | 67.4             | 78.1 |
| Cyprus             | 394  | 34.2        | 13.6 | 0.6 | 2.5 | 3.3  | 0.2 | 0.0 | 13.1 | 32.4 | 48.5 | 1.5  | 30.9              | 46.7             | 50.1 |
| Czech Republic     | 424  | 46.9        | 1.4  | 0.0 | 0.3 | 5.2  | 0.0 | 0.0 | 11.3 | 34.8 | 48.3 | 4.8  | 30.0              | 41.0             | 56.1 |
| England            | 362  | 68.8        | 0.0  | 0.3 | 1.2 | 6.4  | 0.0 | 0.0 | 11.3 | 12.1 | 69.1 | 1.6  | 10.5              | 67.9             | 70.3 |
| Finland            | 370  | 68.6        | 0.6  | 0.0 | 1.0 | 1.5  | 0.7 | 0.0 | 13.8 | 13.7 | 69.3 | 3.1  | 10.7              | 64.1             | 74.7 |
| Hong Kong, SAR     | 644  | 50.7        | 7.7  | 0.5 | 7.4 | 5.0  | 0.8 | 0.0 | 18.9 | 8.9  | 58.9 | 0.2  | 8.8               | 57.0             | 60.8 |
| Hungary            | 393  | 60.4        | 3.7  | 0.3 | 2.1 | 1.6  | 0.2 | 0.0 | 8.1  | 23.7 | 64.3 | 2.9  | 20.8              | 57.7             | 70.8 |
| Indonesia          | 725  | 33.2        | 9.1  | 1.4 | 2.4 | 6.9  | 0.7 | 0.0 | 29.4 | 16.9 | 43.7 | 4.6  | 12.3              | 41.6             | 45.8 |
| Iran, Islamic Rep. | 664  | 30.4        | 5.6  | 0.8 | 0.6 | 4.3  | 0.1 | 0.0 | 18.7 | 39.5 | 36.7 | 3.7  | 35.9              | 29.8             | 41.5 |
| Israel             | 528  | 36.0        | 4.0  | 0.6 | 1.1 | 1.0  | 0.2 | 0.0 | 19.1 | 38.1 | 40.6 | 7.1  | 30.9              | 36.4             | 46.0 |
| Italy              | 415  | 42.0        | 6.3  | 0.7 | 3.0 | 1.2  | 0.0 | 0.0 | 13.0 | 33.8 | 49.1 | 6.7  | 27.1              | 46.1             | 52.4 |
| Japan              | 584  | 63.0        | 8.5  | 0.0 | 9.8 | 1.6  | 0.0 | 0.0 | 7.1  | 10.1 | 71.5 | 0.9  | 9.2               | 67.5             | 75.5 |
| Jordan             | 630  | 42.6        | 2.0  | 0.2 | 3.1 | 3.9  | 0.1 | 0.0 | 30.1 | 18.0 | 44.7 | 1.4  | 16.7              | 45.3             | 44.2 |
| Korea, Rep. of     | 763  | 48.0        | 7.4  | 0.0 | 7.0 | 6.4  | 1.2 | 0.0 | 12.8 | 17.2 | 55.4 | 0.4  | 16.8              | 50.0             | 60.8 |
| Latvia (LSS)       | 354  | 45.5        | 0.0  | 0.0 | 0.5 | 5.6  | 0.0 | 0.0 | 13.8 | 34.7 | 45.5 | 3.7  | 30.9              | 40.0             | 50.3 |
| Lithuania          | 292  | 20.1        | 10.7 | 0.3 | 0.0 | 0.0  | 0.0 | 0.0 | 12.3 | 56.6 | 31.2 | 9.8  | 46.8              | 28.6             | 34.0 |
| Macedonia, Rep. of | 506  | 17.6        | 5.2  | 0.9 | 2.7 | 0.4  | 0.3 | 0.0 | 12.9 | 60.0 | 23.7 | 7.1  | 52.9              | 23.2             | 24.2 |
| Malaysia           | 701  | 29.1        | 8.8  | 0.3 | 2.1 | 5.0  | 0.3 | 0.0 | 26.6 | 27.8 | 38.2 | 4.2  | 23.7              | 35.3             | 41.8 |
| Moldova            | 477  | 31.8        | 9.2  | 1.8 | 0.2 | 2.6  | 0.0 | 0.0 | 13.8 | 40.5 | 42.8 | 4.7  | 35.8              | 39.0             | 46.6 |
| Morocco            | 655  | 18.1        | 2.4  | 0.7 | 4.0 | 1.8  | 0.0 | 0.0 | 24.6 | 48.3 | 21.2 | 0.1  | 48.1              | 20.7             | 21.7 |
| Netherlands        | 365  | 66.4        | 3.8  | 0.0 | 1.7 | 2.7  | 0.2 | 0.0 | 20.4 | 4.7  | 70.2 | 0.6  | 4.1               | 65.5             | 75.4 |
| New Zealand        | 431  | 56.0        | 3.4  | 0.6 | 1.4 | 5.9  | 0.6 | 0.0 | 17.4 | 14.8 | 59.9 | 1.5  | 13.2              | 62.4             | 57.6 |
| Philippines        | 849  | 10.2        | 3.1  | 0.2 | 0.2 | 0.9  | 0.4 | 0.0 | 42.4 | 42.6 | 13.5 | 2.5  | 40.1              | 15.2             | 11.6 |
| Romania            | 431  | 35.0        | 7.4  | 0.0 | 2.1 | 1.7  | 0.9 | 0.0 | 12.7 | 40.1 | 42.4 | 3.7  | 36.4              | 39.3             | 45.9 |
| Russian Federation | 531  | 41.3        | 4.6  | 0.8 | 1.2 | 1.4  | 0.0 | 0.0 | 8.9  | 41.8 | 46.7 | 9.3  | 32.5              | 42.1             | 51.9 |
| Singapore          | 624  | 65.4        | 2.2  | 0.0 | 2.6 | 11.4 | 0.8 | 0.0 | 10.7 | 7.0  | 67.6 | 0.4  | 6.6               | 61.7             | 72.3 |
| Slovak Republic    | 436  | 35.4        | 23.1 | 1.7 | 0.3 | 0.6  | 0.0 | 0.0 | 7.1  | 31.8 | 60.2 | 5.7  | 26.0              | 53.1             | 67.2 |
| Slovenia           | 387  | 60.0        | 6.2  | 0.0 | 4.0 | 1.9  | 0.0 | 0.0 | 10.4 | 17.5 | 66.2 | 0.0  | 17.5              | 64.8             | 67.4 |
| South Africa       | 990  | 4.1         | 2.1  | 0.0 | 0.3 | 1.2  | 0.0 | 0.0 | 37.3 | 55.1 | 6.2  | 11.4 | 43.8              | 5.8              | 6.6  |
| Thailand           | 711  | 32.5        | 8.9  | 1.2 | 2.0 | 5.8  | 0.0 | 0.0 | 32.4 | 17.3 | 42.6 | 2.6  | 14.7              | 43.9             | 41.1 |
| Tunisia            | 630  | 2.7         | 15.3 | 0.3 | 3.9 | 9.1  | 0.4 | 0.0 | 16.2 | 52.1 | 18.4 | 14.5 | 37.6              | 13.6             | 23.3 |
| Turkey             | 990  | 17.3        | 11.2 | 0.3 | 2.4 | 3.5  | 0.1 | 0.0 | 19.4 | 45.8 | 28.8 | 1.7  | 44.1              | 24.5             | 32.6 |
| United States      | 1091 | 62.1        | 0.7  | 0.0 | 1.2 | 5.9  | 0.1 | 0.0 | 18.1 | 11.8 | 62.9 | 1.9  | 10.0              | 60.0             | 65.6 |
| International Avg. | .    | 41.4        | 6.0  | 0.6 | 2.2 | 3.7  | 0.3 | 0.1 | 17.0 | 28.8 | 48.0 | 4.4  | 24.5              | 44.9             | 51.1 |

V1 = % Scoring 1 or better V2 = % Scoring 2 or better V3 = % Scoring 3 or better  
 Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.  
 Because of missing gender information, some totals may appear inconsistent

Science: Life Science  
 Label: Function of chlorophyll ( S022126 - Q17 )  
 Item Type = MC Key = A

| COUNTRY            | N    | A    | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 500  | 53.6 | 30.0 | 4.0  | 11.2 | 1.2                    | 53.6 | 0.0     | 0.0            | 1.2  | 52.3              | 55.1             |
| Belgium (Flemish)  | 658  | 58.2 | 24.1 | 1.6  | 14.2 | 1.9                    | 58.2 | 0.1     | 1.2            | 0.6  | 57.1              | 59.2             |
| Bulgaria           | 407  | 50.5 | 27.8 | 3.7  | 7.5  | 10.4                   | 50.5 | 2.0     | 6.4            | 2.0  | 53.5              | 47.5             |
| Canada             | 1082 | 50.7 | 25.4 | 3.7  | 13.8 | 6.4                    | 50.7 | 0.1     | 5.5            | 0.9  | 48.8              | 53.0             |
| Chile              | 726  | 28.5 | 13.5 | 5.1  | 15.7 | 37.2                   | 28.5 | 0.0     | 34.1           | 3.1  | 25.6              | 31.3             |
| Chinese Taipei     | 717  | 65.3 | 32.2 | 0.5  | 1.8  | 0.2                    | 65.3 | 0.0     | 0.0            | 0.2  | 67.0              | 63.5             |
| Cyprus             | 388  | 46.5 | 30.3 | 5.3  | 14.1 | 3.7                    | 46.5 | 0.0     | 1.8            | 2.0  | 46.5              | 46.5             |
| Czech Republic     | 424  | 31.1 | 45.9 | 4.3  | 10.0 | 8.7                    | 31.1 | 0.0     | 4.8            | 3.8  | 34.0              | 28.1             |
| England            | 362  | 63.6 | 21.7 | 1.9  | 10.4 | 2.4                    | 63.6 | 0.0     | 1.6            | 0.8  | 67.1              | 59.9             |
| Finland            | 370  | 42.2 | 41.9 | 1.1  | 9.6  | 5.1                    | 42.2 | 0.0     | 3.3            | 1.8  | 35.1              | 49.6             |
| Hong Kong, SAR     | 644  | 57.1 | 36.8 | 1.0  | 4.5  | 0.6                    | 57.1 | 0.2     | 0.3            | 0.1  | 52.4              | 61.7             |
| Hungary            | 393  | 21.5 | 33.9 | 10.8 | 24.9 | 9.0                    | 21.5 | 0.3     | 4.5            | 4.2  | 20.8              | 22.4             |
| Indonesia          | 725  | 52.8 | 21.1 | 6.4  | 13.0 | 6.6                    | 52.8 | 0.3     | 5.3            | 1.0  | 52.9              | 52.7             |
| Iran, Islamic Rep. | 664  | 44.0 | 25.1 | 9.3  | 15.2 | 6.4                    | 44.0 | 0.0     | 4.2            | 2.2  | 43.5              | 44.3             |
| Israel             | 528  | 33.3 | 27.0 | 8.5  | 18.9 | 12.2                   | 33.3 | 0.4     | 8.0            | 3.8  | 34.6              | 31.9             |
| Italy              | 415  | 44.1 | 29.9 | 2.7  | 11.8 | 11.5                   | 44.1 | 0.0     | 8.8            | 2.8  | 46.7              | 41.1             |
| Japan              | 584  | 63.5 | 31.6 | 1.0  | 2.3  | 1.6                    | 63.5 | 0.5     | 0.9            | 0.2  | 62.4              | 64.6             |
| Jordan             | 630  | 59.7 | 10.1 | 7.5  | 18.6 | 4.0                    | 59.7 | 0.8     | 1.7            | 1.5  | 61.9              | 57.8             |
| Korea, Rep. of     | 763  | 73.1 | 18.9 | 2.3  | 5.2  | 0.5                    | 73.1 | 0.0     | 0.5            | 0.0  | 74.7              | 71.5             |
| Latvia (LSS)       | 354  | 21.4 | 29.7 | 7.2  | 29.0 | 12.7                   | 21.4 | 0.0     | 6.0            | 6.7  | 23.2              | 19.8             |
| Lithuania          | 292  | 22.6 | 31.5 | 4.6  | 26.7 | 14.7                   | 22.6 | 0.5     | 9.8            | 4.3  | 22.1              | 23.1             |
| Macedonia, Rep. of | 506  | 26.6 | 29.0 | 9.8  | 18.9 | 15.7                   | 26.6 | 0.3     | 11.2           | 4.2  | 29.0              | 24.1             |
| Malaysia           | 702  | 58.0 | 16.4 | 5.1  | 15.1 | 5.3                    | 58.0 | 0.0     | 4.6            | 0.8  | 59.7              | 55.9             |
| Moldova            | 477  | 33.3 | 29.0 | 6.3  | 19.4 | 12.0                   | 33.3 | 0.7     | 6.1            | 5.2  | 40.6              | 26.2             |
| Morocco            | 655  | 13.4 | 13.0 | 15.9 | 50.8 | 6.8                    | 13.4 | 0.9     | 0.4            | 5.6  | 9.8               | 16.2             |
| Netherlands        | 365  | 62.7 | 21.6 | 2.1  | 12.8 | 0.8                    | 62.7 | 0.0     | 0.6            | 0.2  | 60.7              | 64.8             |
| New Zealand        | 431  | 42.1 | 33.3 | 5.9  | 15.5 | 3.2                    | 42.1 | 0.2     | 1.8            | 1.2  | 45.2              | 39.1             |
| Philippines        | 849  | 46.1 | 21.6 | 12.0 | 15.7 | 4.6                    | 46.1 | 0.0     | 3.4            | 1.1  | 50.9              | 40.5             |
| Romania            | 430  | 55.0 | 17.7 | 3.6  | 16.6 | 7.0                    | 55.0 | 0.3     | 4.8            | 1.9  | 52.2              | 58.2             |
| Russian Federation | 531  | 51.3 | 19.6 | 1.2  | 9.9  | 17.9                   | 51.3 | 0.6     | 10.8           | 6.5  | 55.5              | 46.7             |
| Singapore          | 624  | 82.9 | 10.5 | 1.7  | 4.4  | 0.4                    | 82.9 | 0.0     | 0.4            | 0.1  | 82.5              | 83.1             |
| Slovak Republic    | 436  | 27.3 | 38.0 | 4.7  | 19.9 | 10.1                   | 27.3 | 0.3     | 7.8            | 2.0  | 26.6              | 27.9             |
| Slovenia           | 386  | 53.3 | 29.8 | 4.2  | 11.2 | 1.4                    | 53.3 | 0.5     | 0.3            | 0.6  | 54.5              | 52.2             |
| South Africa       | 990  | 26.3 | 20.8 | 16.8 | 21.2 | 14.9                   | 26.3 | 0.5     | 13.0           | 1.3  | 23.6              | 29.2             |
| Thailand           | 711  | 62.3 | 16.1 | 6.5  | 12.2 | 2.9                    | 62.3 | 0.0     | 2.6            | 0.3  | 64.9              | 59.3             |
| Tunisia            | 630  | 41.5 | 5.6  | 7.3  | 24.2 | 21.4                   | 41.5 | 3.7     | 15.9           | 1.9  | 38.3              | 44.9             |
| Turkey             | 990  | 33.4 | 27.0 | 11.6 | 23.5 | 4.5                    | 33.4 | 0.0     | 2.8            | 1.7  | 32.9              | 33.8             |
| United States      | 1091 | 55.2 | 29.4 | 4.7  | 7.8  | 2.9                    | 55.2 | 0.0     | 2.2            | 0.6  | 55.4              | 55.0             |
| International Avg. | .    | 46.2 | 25.4 | 5.6  | 15.2 | 7.6                    | 46.2 | 0.3     | 5.2            | 2.1  | 46.4              | 45.8             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Physics  
 Label: Mass of freezing water ( S022281 - Q18 )  
 Item Type = SA Key = X

| COUNTRY            | N    | 10   | 11  | 12  | 19  | 70   | 71   | 72   | 73   | 79   | 99   | V1   | NOT   | OMIT | 1.GIRL  | 2.BOY   |
|--------------------|------|------|-----|-----|-----|------|------|------|------|------|------|------|-------|------|---------|---------|
|                    |      |      |     |     |     |      |      |      |      |      |      |      | REACH |      | % Right | % Right |
| Australia          | 500  | 36.9 | 1.6 | 1.0 | 0.5 | 2.8  | 16.1 | 33.4 | 5.6  | 1.6  | 0.7  | 39.9 | 0.0   | 0.7  | 38.3    | 41.7    |
| Belgium (Flemish)  | 658  | 36.3 | 1.1 | 1.1 | 0.2 | 6.4  | 25.9 | 18.8 | 4.6  | 3.2  | 2.5  | 38.7 | 1.4   | 1.2  | 34.8    | 42.4    |
| Bulgaria           | 406  | 23.7 | 0.9 | 1.1 | 1.2 | 1.7  | 10.9 | 18.6 | 23.4 | 6.3  | 12.2 | 26.8 | 7.1   | 5.1  | 27.0    | 26.7    |
| Canada             | 1082 | 29.3 | 1.7 | 0.2 | 0.2 | 6.6  | 23.3 | 24.8 | 4.4  | 1.2  | 8.2  | 31.4 | 6.0   | 2.2  | 28.7    | 34.5    |
| Chile              | 726  | 14.2 | 0.5 | 0.6 | 0.0 | 1.1  | 3.0  | 27.1 | 7.1  | 0.7  | 45.8 | 15.2 | 35.5  | 10.4 | 12.1    | 18.2    |
| Chinese Taipei     | 717  | 57.5 | 1.0 | 0.4 | 0.2 | 3.5  | 15.0 | 0.0  | 7.1  | 14.6 | 0.7  | 59.1 | 0.0   | 0.7  | 59.6    | 58.6    |
| Cyprus             | 390  | 15.9 | 1.4 | 2.0 | 3.0 | 5.7  | 5.0  | 40.9 | 16.1 | 6.2  | 3.7  | 22.3 | 2.3   | 1.4  | 19.8    | 24.6    |
| Czech Republic     | 424  | 30.1 | 0.5 | 0.9 | 1.1 | 3.1  | 14.9 | 20.0 | 15.1 | 7.6  | 6.6  | 32.7 | 4.8   | 1.7  | 31.1    | 34.3    |
| England            | 362  | 30.1 | 0.9 | 1.5 | 0.0 | 3.5  | 27.7 | 27.2 | 4.1  | 2.8  | 2.2  | 32.5 | 1.6   | 0.6  | 29.8    | 35.2    |
| Finland            | 370  | 31.3 | 1.1 | 0.9 | 0.0 | 4.1  | 2.8  | 44.4 | 8.0  | 1.1  | 6.3  | 33.3 | 4.6   | 1.7  | 28.5    | 38.3    |
| Hong Kong, SAR     | 643  | 21.3 | 2.0 | 0.8 | 1.1 | 4.2  | 9.4  | 46.3 | 11.3 | 1.6  | 2.0  | 25.1 | 0.3   | 1.6  | 23.2    | 27.0    |
| Hungary            | 393  | 41.4 | 0.3 | 0.0 | 0.0 | 7.7  | 12.3 | 19.0 | 10.6 | 0.9  | 7.8  | 41.6 | 5.1   | 2.7  | 38.4    | 44.7    |
| Indonesia          | 725  | 13.0 | 2.1 | 0.3 | 0.4 | 2.2  | 6.0  | 43.3 | 7.0  | 4.5  | 21.2 | 15.8 | 5.5   | 15.6 | 14.3    | 17.4    |
| Iran, Islamic Rep. | 664  | 19.6 | 2.7 | 0.6 | 0.5 | 2.8  | 4.1  | 45.4 | 15.2 | 1.3  | 7.7  | 23.3 | 4.2   | 3.6  | 20.5    | 25.3    |
| Israel             | 528  | 34.3 | 0.6 | 0.7 | 0.5 | 3.4  | 5.6  | 20.7 | 10.4 | 9.8  | 14.1 | 36.1 | 8.2   | 5.9  | 35.2    | 37.2    |
| Italy              | 415  | 20.0 | 0.2 | 0.7 | 1.2 | 3.8  | 17.8 | 29.0 | 10.2 | 4.3  | 13.0 | 22.1 | 8.8   | 4.2  | 23.4    | 20.5    |
| Japan              | 584  | 45.7 | 1.8 | 4.1 | 0.9 | 4.1  | 15.5 | 20.1 | 5.5  | 0.1  | 2.3  | 52.4 | 0.9   | 1.4  | 49.6    | 55.3    |
| Jordan             | 626  | 9.9  | 0.1 | 0.6 | 0.2 | 4.3  | 21.0 | 40.1 | 10.3 | 5.8  | 7.7  | 10.9 | 1.9   | 5.8  | 10.4    | 11.4    |
| Korea, Rep. of     | 763  | 36.6 | 1.3 | 3.2 | 0.0 | 0.5  | 0.4  | 53.8 | 3.6  | 0.1  | 0.6  | 41.0 | 0.5   | 0.1  | 46.2    | 35.8    |
| Latvia (LSS)       | 354  | 32.3 | 0.6 | 0.8 | 0.0 | 12.0 | 15.9 | 23.7 | 6.0  | 1.0  | 7.8  | 33.7 | 6.4   | 1.4  | 34.6    | 32.9    |
| Lithuania          | 292  | 21.1 | 0.3 | 4.1 | 0.0 | 11.9 | 14.1 | 19.2 | 9.7  | 4.0  | 15.7 | 25.5 | 9.8   | 5.8  | 21.9    | 29.4    |
| Macedonia, Rep. of | 505  | 21.1 | 1.3 | 3.1 | 6.3 | 8.4  | 15.6 | 0.6  | 4.9  | 10.9 | 27.8 | 31.8 | 11.7  | 16.1 | 27.7    | 36.1    |
| Malaysia           | 700  | 9.8  | 2.6 | 1.0 | 0.0 | 13.3 | 8.4  | 42.3 | 8.5  | 3.8  | 10.2 | 13.4 | 4.6   | 5.6  | 12.1    | 15.0    |
| Moldova            | 477  | 28.6 | 2.4 | 1.2 | 1.5 | 3.5  | 2.7  | 28.9 | 15.5 | 1.3  | 14.2 | 33.8 | 6.4   | 7.9  | 28.3    | 39.2    |
| Morocco            | 649  | 21.2 | 0.1 | 0.2 | 0.6 | 0.2  | 46.8 | 0.0  | 17.1 | 6.1  | 7.7  | 22.2 | 0.9   | 6.7  | 16.9    | 26.1    |
| Netherlands        | 365  | 25.7 | 0.6 | 0.2 | 0.0 | 10.1 | 32.8 | 18.2 | 8.6  | 1.9  | 1.8  | 26.5 | 0.8   | 1.0  | 26.6    | 26.5    |
| New Zealand        | 431  | 15.6 | 0.7 | 1.6 | 0.2 | 6.8  | 31.2 | 31.0 | 7.2  | 2.5  | 3.2  | 18.1 | 1.8   | 1.4  | 19.1    | 17.1    |
| Philippines        | 849  | 11.3 | 0.6 | 0.0 | 0.4 | 1.5  | 1.4  | 43.5 | 19.0 | 6.7  | 15.4 | 12.3 | 3.6   | 11.8 | 12.7    | 11.9    |
| Romania            | 431  | 15.3 | 0.5 | 0.1 | 0.3 | 4.9  | 13.0 | 37.1 | 17.4 | 2.9  | 8.6  | 16.1 | 4.7   | 3.9  | 17.6    | 14.9    |
| Russian Federation | 531  | 24.7 | 1.8 | 0.2 | 1.1 | 9.4  | 9.8  | 21.1 | 15.7 | 1.7  | 14.5 | 27.8 | 11.2  | 3.3  | 28.4    | 27.1    |
| Singapore          | 624  | 28.8 | 1.7 | 1.8 | 0.6 | 10.5 | 22.8 | 27.3 | 6.0  | 0.0  | 0.6  | 32.9 | 0.4   | 0.2  | 33.3    | 32.5    |
| Slovak Republic    | 436  | 35.9 | 1.2 | 7.2 | 1.3 | 4.3  | 10.3 | 15.9 | 4.0  | 2.5  | 17.5 | 45.6 | 8.4   | 9.0  | 43.1    | 48.1    |
| Slovenia           | 387  | 39.6 | 0.6 | 1.8 | 0.0 | 2.2  | 13.9 | 22.8 | 15.0 | 2.3  | 2.0  | 41.9 | 0.3   | 1.8  | 44.5    | 39.4    |
| South Africa       | 990  | 4.8  | 0.2 | 0.1 | 0.5 | 2.6  | 4.3  | 41.5 | 21.8 | 4.3  | 20.1 | 5.5  | 13.5  | 6.5  | 4.8     | 6.3     |
| Thailand           | 711  | 21.9 | 3.0 | 1.0 | 1.6 | 4.3  | 25.6 | 26.2 | 6.6  | 4.0  | 5.8  | 27.5 | 2.6   | 3.2  | 27.2    | 27.8    |
| Tunisia            | 629  | 13.4 | 1.7 | 0.8 | 0.1 | 0.5  | 1.6  | 48.9 | 13.8 | 0.5  | 18.7 | 16.0 | 16.2  | 2.5  | 16.4    | 15.5    |
| Turkey             | 990  | 25.5 | 0.4 | 2.3 | 0.2 | 1.7  | 11.9 | 31.8 | 15.3 | 1.5  | 9.4  | 28.4 | 2.8   | 6.6  | 26.6    | 30.0    |
| United States      | 1091 | 30.1 | 0.9 | 0.2 | 0.1 | 4.9  | 19.7 | 31.3 | 7.2  | 0.3  | 5.1  | 31.3 | 2.4   | 2.8  | 28.8    | 33.7    |
| International Avg. | .    | 25.6 | 1.1 | 1.3 | 0.7 | 4.9  | 14.2 | 28.5 | 10.5 | 3.5  | 9.8  | 28.7 | 5.4   | 4.3  | 27.4    | 30.0    |

V1 = % Scoring 1 or better V2 = % Scoring 2 or better V3 = % Scoring 3 or better  
 Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.  
 Because of missing gender information, some totals may appear inconsistent



Science: Scientific Inquiry and the Nature of Science  
 Label: Bacteria/mold experiment ( S022264 - R01 )  
 Item Type = MC Key = B

| COUNTRY            | N    | A    | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------------------------|------|---------|------|-------------------|------------------|
| Australia          | 500  | 41.1 | 39.4 | 7.7  | 11.3 | 0.5                    | 39.4 | 0.0     | 0.5  | 38.6              | 40.4             |
| Belgium (Flemish)  | 657  | 20.4 | 36.3 | 8.6  | 34.2 | 0.4                    | 36.3 | 0.1     | 0.3  | 34.8              | 37.7             |
| Bulgaria           | 406  | 22.9 | 58.1 | 3.2  | 11.7 | 4.1                    | 58.1 | 1.6     | 2.6  | 57.9              | 58.3             |
| Canada             | 1084 | 36.7 | 52.0 | 3.7  | 7.5  | 0.1                    | 52.0 | 0.1     | 0.0  | 51.7              | 52.6             |
| Chile              | 735  | 35.8 | 42.2 | 3.0  | 18.4 | 0.6                    | 42.2 | 0.0     | 0.6  | 42.0              | 42.4             |
| Chinese Taipei     | 717  | 12.1 | 80.2 | 2.2  | 5.5  | 0.0                    | 80.2 | 0.0     | 0.0  | 80.5              | 79.9             |
| Cyprus             | 392  | 17.7 | 36.0 | 6.7  | 38.9 | 0.6                    | 36.0 | 0.6     | 0.0  | 39.1              | 33.2             |
| Czech Republic     | .    | .    | .    | .    | .    | .                      | .    | .       | .    | .                 | .                |
| England            | 362  | 42.6 | 18.8 | 5.1  | 31.6 | 1.9                    | 18.8 | 0.0     | 1.9  | 15.6              | 22.1             |
| Finland            | 370  | 43.2 | 10.6 | 2.3  | 42.9 | 1.1                    | 10.6 | 0.0     | 1.1  | 9.7               | 11.5             |
| Hong Kong, SAR     | 643  | 26.6 | 31.5 | 11.0 | 30.6 | 0.3                    | 31.5 | 0.0     | 0.3  | 32.8              | 30.2             |
| Hungary            | 394  | 27.1 | 42.5 | 2.4  | 27.5 | 0.5                    | 42.5 | 0.5     | 0.0  | 44.5              | 40.4             |
| Indonesia          | 725  | 39.8 | 10.6 | 1.7  | 47.0 | 0.8                    | 10.6 | 0.0     | 0.8  | 11.0              | 10.3             |
| Iran, Islamic Rep. | 664  | 12.5 | 24.8 | 8.0  | 53.9 | 0.7                    | 24.8 | 0.0     | 0.7  | 27.6              | 22.9             |
| Israel             | 526  | 7.1  | 63.2 | 5.1  | 23.0 | 1.5                    | 63.2 | 0.0     | 1.5  | 65.9              | 60.1             |
| Italy              | 415  | 18.5 | 67.0 | 2.3  | 11.6 | 0.7                    | 67.0 | 0.2     | 0.4  | 65.6              | 68.6             |
| Japan              | 585  | 13.5 | 70.0 | 2.1  | 14.2 | 0.2                    | 70.0 | 0.0     | 0.2  | 70.8              | 69.2             |
| Jordan             | 630  | 34.6 | 22.2 | 8.0  | 34.1 | 1.1                    | 22.2 | 0.2     | 0.9  | 18.7              | 25.2             |
| Korea, Rep. of     | 763  | 29.9 | 25.1 | 1.7  | 43.0 | 0.4                    | 25.1 | 0.0     | 0.4  | 25.7              | 24.5             |
| Latvia (LSS)       | 355  | 57.6 | 15.9 | 8.4  | 15.2 | 2.9                    | 15.9 | 0.5     | 2.5  | 17.2              | 14.7             |
| Lithuania          | 292  | 17.8 | 40.6 | 8.6  | 32.8 | 0.3                    | 40.6 | 0.0     | 0.3  | 41.2              | 39.9             |
| Macedonia, Rep. of | 506  | 30.4 | 21.9 | 6.4  | 37.5 | 3.8                    | 21.9 | 0.2     | 3.6  | 20.7              | 23.2             |
| Malaysia           | 702  | 44.7 | 17.9 | 6.4  | 30.3 | 0.7                    | 17.9 | 0.1     | 0.5  | 16.3              | 19.8             |
| Moldova            | .    | .    | .    | .    | .    | .                      | .    | .       | .    | .                 | .                |
| Morocco            | 643  | 30.8 | 41.3 | 4.8  | 19.7 | 3.4                    | 41.3 | 0.7     | 2.7  | 48.0              | 36.5             |
| Netherlands        | 365  | 25.5 | 42.0 | 5.0  | 27.5 | 0.0                    | 42.0 | 0.0     | 0.0  | 38.4              | 46.0             |
| New Zealand        | 435  | 41.1 | 31.7 | 8.0  | 19.1 | 0.2                    | 31.7 | 0.2     | 0.0  | 31.9              | 31.4             |
| Philippines        | 848  | 60.1 | 17.7 | 7.6  | 13.2 | 1.4                    | 17.7 | 0.0     | 1.4  | 15.9              | 19.8             |
| Romania            | 431  | 29.5 | 13.7 | 5.4  | 49.4 | 2.0                    | 13.7 | 0.5     | 1.5  | 12.7              | 14.8             |
| Russian Federation | 531  | 37.9 | 10.2 | 3.6  | 46.8 | 1.6                    | 10.2 | 0.2     | 1.4  | 6.7               | 14.0             |
| Singapore          | 624  | 33.0 | 28.5 | 7.6  | 30.6 | 0.3                    | 28.5 | 0.0     | 0.3  | 30.2              | 27.1             |
| Slovak Republic    | 436  | 48.6 | 29.6 | 4.4  | 16.8 | 0.5                    | 29.6 | 0.0     | 0.5  | 23.8              | 35.4             |
| Slovenia           | 389  | 55.4 | 31.6 | 4.9  | 7.9  | 0.2                    | 31.6 | 0.0     | 0.2  | 34.3              | 28.9             |
| South Africa       | 993  | 30.8 | 28.8 | 23.2 | 16.8 | 0.5                    | 28.8 | 0.2     | 0.3  | 27.7              | 29.9             |
| Thailand           | 711  | 24.9 | 54.9 | 9.2  | 10.9 | 0.1                    | 54.9 | 0.0     | 0.1  | 57.7              | 51.5             |
| Tunisia            | 629  | 28.2 | 36.3 | 4.4  | 25.2 | 5.9                    | 36.3 | 4.8     | 1.1  | 35.8              | 36.7             |
| Turkey             | .    | .    | .    | .    | .    | .                      | .    | .       | .    | .                 | .                |
| United States      | 1080 | 37.6 | 47.3 | 7.5  | 7.5  | 0.1                    | 47.3 | 0.0     | 0.1  | 44.0              | 50.4             |
| International Avg. | .    | 31.9 | 35.4 | 6.0  | 25.5 | 1.1                    | 35.4 | 0.3     | 0.8  | 35.3              | 35.7             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Physics  
 Label: Appearance of red dress in green light ( S022064 - R02 )  
 Item Type = MC Key = C

| COUNTRY            | N    | A    | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 500  | 18.4 | 6.7  | 49.0 | 25.4 | 0.5                    | 49.0 | 0.0     | 0.0            | 0.5  | 48.3              | 49.8             |
| Belgium (Flemish)  | 657  | 25.6 | 6.0  | 35.9 | 31.9 | 0.6                    | 35.9 | 0.0     | 0.0            | 0.6  | 34.8              | 36.9             |
| Bulgaria           | 406  | 14.1 | 8.5  | 35.0 | 36.4 | 6.1                    | 35.0 | 1.4     | 0.3            | 4.4  | 36.6              | 33.3             |
| Canada             | 1084 | 21.4 | 5.9  | 44.9 | 27.6 | 0.2                    | 44.9 | 0.2     | 0.0            | 0.0  | 43.7              | 45.9             |
| Chile              | 735  | 24.6 | 10.6 | 28.6 | 35.4 | 0.8                    | 28.6 | 0.0     | 0.0            | 0.8  | 24.8              | 32.3             |
| Chinese Taipei     | 717  | 16.2 | 13.5 | 43.8 | 26.2 | 0.4                    | 43.8 | 0.0     | 0.0            | 0.4  | 42.9              | 44.6             |
| Cyprus             | 390  | 26.5 | 11.5 | 35.0 | 26.7 | 0.2                    | 35.0 | 0.0     | 0.0            | 0.2  | 36.1              | 34.1             |
| Czech Republic     | 424  | 15.5 | 9.9  | 42.8 | 29.7 | 2.1                    | 42.8 | 0.0     | 0.0            | 2.1  | 45.0              | 40.4             |
| England            | 362  | 15.4 | 11.1 | 44.4 | 27.3 | 1.9                    | 44.4 | 0.0     | 1.9            | 0.0  | 41.6              | 47.2             |
| Finland            | 370  | 14.3 | 6.9  | 34.9 | 43.4 | 0.6                    | 34.9 | 0.0     | 0.0            | 0.6  | 38.9              | 30.7             |
| Hong Kong, SAR     | 643  | 20.4 | 13.6 | 32.3 | 32.9 | 0.8                    | 32.3 | 0.0     | 0.0            | 0.8  | 35.9              | 28.8             |
| Hungary            | 394  | 19.3 | 8.8  | 56.5 | 14.5 | 0.8                    | 56.5 | 0.0     | 0.0            | 0.8  | 56.2              | 57.5             |
| Indonesia          | 725  | 10.9 | 6.7  | 38.3 | 43.6 | 0.6                    | 38.3 | 0.0     | 0.0            | 0.6  | 34.5              | 42.1             |
| Iran, Islamic Rep. | 664  | 16.9 | 29.0 | 26.0 | 26.7 | 1.3                    | 26.0 | 0.0     | 0.0            | 1.3  | 21.7              | 29.0             |
| Israel             | 526  | 15.7 | 18.8 | 33.5 | 29.1 | 2.9                    | 33.5 | 0.0     | 0.0            | 2.9  | 29.9              | 37.9             |
| Italy              | 415  | 21.8 | 7.7  | 34.5 | 33.4 | 2.6                    | 34.5 | 0.0     | 0.2            | 2.4  | 36.7              | 32.1             |
| Japan              | 585  | 19.6 | 13.4 | 55.5 | 11.3 | 0.2                    | 55.5 | 0.0     | 0.0            | 0.2  | 56.9              | 54.1             |
| Jordan             | 630  | 12.2 | 14.6 | 28.3 | 42.9 | 2.0                    | 28.3 | 0.2     | 0.0            | 1.8  | 29.7              | 27.1             |
| Korea, Rep. of     | 763  | 10.5 | 19.3 | 51.2 | 18.6 | 0.4                    | 51.2 | 0.0     | 0.0            | 0.4  | 53.5              | 48.9             |
| Latvia (LSS)       | 355  | 25.9 | 15.5 | 35.1 | 21.3 | 2.2                    | 35.1 | 0.2     | 0.7            | 1.3  | 38.4              | 32.2             |
| Lithuania          | 292  | 14.3 | 6.4  | 35.1 | 42.1 | 2.2                    | 35.1 | 0.0     | 0.0            | 2.2  | 37.8              | 32.1             |
| Macedonia, Rep. of | 506  | 26.7 | 11.9 | 26.7 | 30.8 | 4.0                    | 26.7 | 0.3     | 0.0            | 3.7  | 25.7              | 27.7             |
| Malaysia           | 702  | 10.0 | 8.2  | 53.0 | 28.3 | 0.5                    | 53.0 | 0.0     | 0.0            | 0.5  | 53.9              | 51.9             |
| Moldova            | 477  | 25.5 | 9.1  | 28.2 | 35.2 | 2.0                    | 28.2 | 0.0     | 0.0            | 2.0  | 24.3              | 32.0             |
| Morocco            | 644  | 20.5 | 13.8 | 17.9 | 44.3 | 3.5                    | 17.9 | 0.6     | 0.0            | 2.9  | 18.8              | 17.0             |
| Netherlands        | 365  | 18.1 | 13.7 | 48.1 | 20.1 | 0.0                    | 48.1 | 0.0     | 0.0            | 0.0  | 43.7              | 53.0             |
| New Zealand        | 435  | 15.8 | 9.4  | 39.6 | 34.7 | 0.4                    | 39.6 | 0.2     | 0.0            | 0.2  | 40.8              | 38.5             |
| Philippines        | 848  | 24.9 | 15.0 | 22.8 | 35.6 | 1.8                    | 22.8 | 0.0     | 0.0            | 1.8  | 21.6              | 24.1             |
| Romania            | 431  | 15.7 | 10.0 | 23.5 | 48.3 | 2.5                    | 23.5 | 0.5     | 0.2            | 1.7  | 24.8              | 22.5             |
| Russian Federation | 531  | 18.8 | 4.4  | 38.9 | 34.4 | 3.5                    | 38.9 | 0.5     | 0.1            | 2.9  | 38.9              | 38.9             |
| Singapore          | 624  | 15.5 | 8.8  | 62.8 | 12.6 | 0.4                    | 62.8 | 0.0     | 0.0            | 0.4  | 64.8              | 61.1             |
| Slovak Republic    | 436  | 16.6 | 7.4  | 37.9 | 37.0 | 1.1                    | 37.9 | 0.0     | 0.0            | 1.1  | 38.6              | 37.1             |
| Slovenia           | 389  | 14.7 | 6.9  | 47.9 | 29.3 | 1.2                    | 47.9 | 0.0     | 0.0            | 1.2  | 53.9              | 42.2             |
| South Africa       | 993  | 16.0 | 16.5 | 20.4 | 46.4 | 0.7                    | 20.4 | 0.6     | 0.0            | 0.1  | 21.5              | 19.2             |
| Thailand           | 711  | 19.5 | 14.2 | 35.0 | 30.8 | 0.5                    | 35.0 | 0.0     | 0.0            | 0.5  | 37.0              | 32.6             |
| Tunisia            | 629  | 19.2 | 8.6  | 27.8 | 41.5 | 2.8                    | 27.8 | 1.7     | 0.0            | 1.1  | 24.4              | 31.4             |
| Turkey             | 990  | 11.2 | 17.1 | 21.7 | 48.7 | 1.3                    | 21.7 | 0.0     | 0.0            | 1.3  | 21.4              | 22.0             |
| United States      | 1080 | 19.6 | 7.0  | 46.6 | 26.7 | 0.1                    | 46.6 | 0.0     | 0.0            | 0.1  | 48.3              | 45.0             |
| International Avg. | .    | 18.1 | 11.2 | 37.3 | 31.9 | 1.5                    | 37.3 | 0.2     | 0.1            | 1.2  | 37.5              | 37.2             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent

Science: Life Science  
 Label: Two outcomes of introducing new species ( S022165A - R03A )  
 Item Type = EX Key = X

| COUNTRY            | N    | 10   | 11   | 12   | 13   | 14   | 15  | 19   | 70   | 79   | 99   | V1   | NOT REACH ED | OMIT | 1.GIRL % Right | 2.BOY % Right |
|--------------------|------|------|------|------|------|------|-----|------|------|------|------|------|--------------|------|----------------|---------------|
| Australia          | 500  | 21.4 | 7.5  | 39.0 | 4.1  | 7.8  | 0.8 | 3.1  | 4.8  | 4.1  | 7.3  | 83.7 | 0.0          | 7.3  | 83.4           | 84.2          |
| Belgium (Flemish)  | 657  | 11.2 | 7.0  | 38.3 | 12.7 | 1.9  | 1.4 | 1.3  | 10.2 | 8.8  | 7.2  | 73.8 | 0.0          | 7.2  | 80.1           | 68.0          |
| Bulgaria           | 407  | 26.1 | 1.0  | 0.0  | 5.7  | 0.0  | 0.0 | 32.8 | 0.0  | 10.7 | 23.6 | 65.7 | 0.3          | 23.3 | 67.6           | 63.8          |
| Canada             | 1084 | 15.5 | 8.3  | 32.6 | 11.6 | 6.6  | 2.4 | 0.5  | 5.8  | 10.7 | 5.9  | 77.5 | 0.0          | 5.9  | 77.6           | 77.4          |
| Chile              | 734  | 3.5  | 4.0  | 13.4 | 17.3 | 4.9  | 2.3 | 2.2  | 13.8 | 15.3 | 23.2 | 47.7 | 0.0          | 23.2 | 47.7           | 47.7          |
| Chinese Taipei     | 717  | 7.2  | 2.1  | 8.5  | 36.2 | 11.0 | 4.0 | 3.6  | 9.8  | 11.2 | 6.2  | 72.7 | 0.0          | 6.2  | 75.8           | 69.6          |
| Cyprus             | 391  | 3.2  | 8.5  | 25.7 | 9.5  | 4.3  | 1.1 | 2.5  | 5.9  | 15.7 | 23.5 | 54.9 | 0.0          | 23.5 | 60.0           | 50.0          |
| Czech Republic     | 424  | 8.0  | 4.4  | 31.0 | 8.6  | 4.6  | 1.2 | 0.1  | 10.3 | 14.6 | 17.3 | 57.8 | 0.0          | 17.3 | 57.5           | 58.2          |
| England            | 362  | 7.6  | 5.8  | 46.6 | 5.9  | 3.9  | 3.1 | 0.0  | 8.3  | 5.9  | 12.8 | 72.9 | 1.9          | 10.9 | 72.7           | 73.2          |
| Finland            | 370  | 7.5  | 14.7 | 28.6 | 8.1  | 0.9  | 0.7 | 15.8 | 10.9 | 4.7  | 8.2  | 76.2 | 0.0          | 8.2  | 77.1           | 75.3          |
| Hong Kong, SAR     | 643  | 3.2  | 2.4  | 14.1 | 32.3 | 1.7  | 1.7 | 0.9  | 21.9 | 13.9 | 7.9  | 56.3 | 0.0          | 7.9  | 59.5           | 53.2          |
| Hungary            | 394  | 16.1 | 3.7  | 31.4 | 8.1  | 4.9  | 0.7 | 1.8  | 5.7  | 10.2 | 17.3 | 66.8 | 0.0          | 17.3 | 63.8           | 70.3          |
| Indonesia          | 725  | 2.5  | 1.6  | 18.1 | 31.0 | 2.2  | 0.9 | 0.0  | 3.0  | 34.4 | 6.5  | 56.1 | 0.0          | 6.5  | 51.8           | 60.5          |
| Iran, Islamic Rep. | 663  | 7.9  | 3.2  | 10.1 | 10.8 | 1.5  | 4.5 | 3.8  | 6.9  | 10.4 | 40.8 | 41.8 | 0.0          | 40.8 | 32.8           | 48.0          |
| Israel             | 526  | 5.1  | 5.7  | 34.6 | 13.0 | 2.7  | 4.0 | 1.7  | 7.3  | 9.1  | 16.6 | 67.0 | 0.0          | 16.6 | 68.1           | 65.7          |
| Italy              | 415  | 5.5  | 0.5  | 27.7 | 15.2 | 7.7  | 2.6 | 2.8  | 6.4  | 8.9  | 22.6 | 62.0 | 0.2          | 22.4 | 60.5           | 63.8          |
| Japan              | 585  | 6.9  | 2.1  | 24.0 | 22.1 | 5.1  | 0.0 | 5.2  | 16.0 | 8.9  | 9.6  | 65.5 | 0.0          | 9.6  | 62.0           | 69.0          |
| Jordan             | 630  | 4.3  | 2.3  | 15.8 | 18.0 | 1.4  | 0.5 | 0.8  | 11.0 | 27.6 | 18.2 | 43.1 | 0.0          | 18.2 | 41.6           | 44.4          |
| Korea, Rep. of     | 763  | 4.0  | 0.2  | 17.2 | 19.5 | 18.1 | 0.9 | 1.1  | 17.3 | 8.1  | 13.4 | 61.2 | 0.0          | 13.4 | 59.0           | 63.3          |
| Latvia (LSS)       | 354  | 11.4 | 2.1  | 36.8 | 21.3 | 1.8  | 1.5 | 1.2  | 4.6  | 5.0  | 14.2 | 76.2 | 0.7          | 13.5 | 79.7           | 73.0          |
| Lithuania          | 292  | 1.1  | 0.6  | 31.3 | 39.3 | 2.4  | 0.0 | 0.3  | 1.3  | 6.0  | 17.8 | 74.9 | 0.0          | 17.8 | 74.6           | 75.3          |
| Macedonia, Rep. of | 506  | 5.6  | 3.4  | 14.4 | 16.7 | 0.9  | 0.2 | 3.7  | 2.2  | 15.6 | 37.2 | 45.0 | 0.0          | 37.2 | 44.3           | 45.7          |
| Malaysia           | 701  | 6.2  | 0.6  | 23.4 | 25.1 | 2.3  | 0.6 | 0.5  | 9.4  | 16.0 | 15.9 | 58.7 | 0.0          | 15.9 | 59.6           | 57.6          |
| Moldova            | 477  | 12.2 | 3.3  | 23.8 | 18.5 | 1.5  | 1.4 | 3.9  | 1.0  | 8.1  | 26.2 | 64.7 | 0.0          | 26.2 | 64.2           | 65.1          |
| Morocco            | 649  | 1.1  | 3.0  | 6.2  | 3.7  | 2.7  | 1.5 | 10.2 | 0.5  | 15.7 | 55.5 | 28.3 | 0.0          | 55.5 | 25.8           | 30.1          |
| Netherlands        | 365  | 7.2  | 6.3  | 33.4 | 5.7  | 0.5  | 0.0 | 10.8 | 15.9 | 14.2 | 6.0  | 64.0 | 0.0          | 6.0  | 64.7           | 63.2          |
| New Zealand        | 435  | 10.0 | 10.3 | 38.2 | 4.1  | 2.2  | 1.2 | 5.2  | 6.5  | 9.9  | 12.4 | 71.1 | 0.0          | 12.4 | 73.7           | 68.6          |
| Philippines        | 848  | 2.2  | 0.5  | 2.6  | 7.0  | 0.1  | 0.6 | 2.4  | 0.2  | 39.7 | 44.6 | 15.5 | 0.0          | 44.6 | 16.1           | 14.8          |
| Romania            | 431  | 9.5  | 2.0  | 24.7 | 12.1 | 3.5  | 1.0 | 0.8  | 6.8  | 7.4  | 32.2 | 53.6 | 0.2          | 32.0 | 52.5           | 54.3          |
| Russian Federation | 531  | 1.5  | 1.3  | 45.6 | 13.1 | 3.5  | 3.7 | 3.3  | 2.7  | 5.5  | 19.7 | 72.0 | 0.1          | 19.6 | 76.0           | 67.6          |
| Singapore          | 624  | 14.0 | 1.2  | 29.1 | 18.9 | 7.8  | 0.0 | 2.0  | 7.5  | 10.7 | 8.8  | 72.9 | 0.0          | 8.8  | 73.8           | 72.3          |
| Slovak Republic    | 436  | 9.7  | 3.7  | 34.4 | 19.4 | 4.6  | 1.0 | 2.9  | 2.3  | 2.9  | 19.1 | 75.7 | 0.0          | 19.1 | 76.4           | 74.9          |
| Slovenia           | 389  | 8.3  | 2.8  | 28.6 | 11.9 | 7.1  | 2.9 | 4.8  | 13.8 | 4.7  | 15.0 | 66.4 | 0.0          | 15.0 | 65.8           | 67.0          |
| South Africa       | 993  | 1.5  | 1.1  | 3.6  | 3.5  | 1.0  | 0.4 | 0.4  | 2.1  | 47.4 | 39.0 | 11.5 | 0.0          | 39.0 | 12.9           | 9.8           |
| Thailand           | 711  | 1.9  | 1.5  | 17.2 | 20.0 | 3.4  | 4.2 | 24.0 | 7.1  | 13.4 | 7.4  | 72.1 | 0.0          | 7.4  | 72.5           | 71.7          |
| Tunisia            | 626  | 3.7  | 1.3  | 7.0  | 16.2 | 6.8  | 0.2 | 13.9 | 0.8  | 29.6 | 20.5 | 49.1 | 0.0          | 20.5 | 47.7           | 50.6          |
| Turkey             | 990  | 1.2  | 0.7  | 11.7 | 15.5 | 2.5  | 1.2 | 3.8  | 10.7 | 22.4 | 30.3 | 36.6 | 0.0          | 30.3 | 37.3           | 35.9          |
| United States      | 1080 | 10.8 | 5.9  | 36.0 | 4.2  | 2.9  | 1.8 | 1.9  | 16.6 | 10.2 | 9.6  | 63.5 | 0.0          | 9.6  | 64.5           | 62.5          |
| International Avg. | .    | 7.5  | 3.6  | 23.8 | 14.9 | 3.9  | 1.5 | 4.6  | 7.6  | 13.6 | 18.9 | 59.9 | 0.1          | 18.9 | 60.0           | 59.6          |

V1 = % Scoring 1 or better V2 = % Scoring 2 or better V3 = % Scoring 3 or better  
 Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.  
 Because of missing gender information, some totals may appear inconsistent

Science: Life Science  
 Label: Two outcomes of introducing new species ( S022165B - R03B )  
 Item Type = EX Key = X

| COUNTRY            | N    | 10   | 11   | 12   | 13   | 14   | 15  | 19   | 70   | 79   | 99   | V1   | NOT   | OMIT | 1.GIRL  | 2.BOY   |
|--------------------|------|------|------|------|------|------|-----|------|------|------|------|------|-------|------|---------|---------|
|                    |      |      |      |      |      |      |     |      |      |      |      |      | REACH |      | % Right | % Right |
| Australia          | 500  | 26.1 | 6.6  | 16.3 | 8.5  | 11.6 | 1.9 | 6.8  | 5.5  | 6.3  | 10.4 | 77.8 | 0.0   | 10.4 | 79.3    | 76.0    |
| Belgium (Flemish)  | 657  | 12.4 | 5.9  | 18.6 | 15.9 | 4.3  | 1.6 | 2.2  | 7.3  | 17.4 | 14.5 | 60.8 | 0.0   | 14.5 | 58.1    | 63.4    |
| Bulgaria           | 407  | 6.4  | 1.2  | 0.7  | 4.8  | 0.0  | 0.0 | 35.7 | 0.0  | 14.2 | 37.1 | 48.7 | 0.3   | 36.8 | 54.6    | 42.8    |
| Canada             | 1084 | 12.6 | 7.9  | 17.9 | 15.6 | 7.7  | 1.5 | 1.8  | 7.0  | 17.0 | 11.0 | 65.0 | 0.0   | 11.0 | 66.0    | 64.4    |
| Chile              | 734  | 5.8  | 3.4  | 11.3 | 11.6 | 3.8  | 0.8 | 2.8  | 12.6 | 18.7 | 29.3 | 39.4 | 0.0   | 29.3 | 41.8    | 37.1    |
| Chinese Taipei     | 717  | 7.5  | 2.9  | 10.5 | 20.2 | 10.1 | 4.6 | 4.3  | 13.1 | 15.8 | 11.0 | 60.1 | 0.0   | 11.0 | 60.6    | 59.7    |
| Cyprus             | 391  | 2.3  | 12.2 | 11.7 | 7.8  | 4.4  | 0.9 | 3.2  | 5.0  | 19.8 | 32.6 | 42.6 | 0.0   | 32.6 | 45.8    | 39.5    |
| Czech Republic     | 424  | 10.3 | 2.5  | 9.8  | 8.7  | 3.6  | 1.2 | 2.3  | 9.1  | 22.1 | 30.3 | 38.5 | 0.0   | 30.3 | 34.8    | 42.4    |
| England            | 362  | 12.0 | 6.9  | 23.4 | 12.2 | 4.6  | 1.8 | 0.2  | 10.4 | 11.1 | 17.4 | 61.2 | 1.9   | 15.5 | 60.7    | 61.6    |
| Finland            | 370  | 12.5 | 11.5 | 12.2 | 10.1 | 0.9  | 0.4 | 13.3 | 10.2 | 11.2 | 17.4 | 61.1 | 0.0   | 17.4 | 63.8    | 58.5    |
| Hong Kong, SAR     | 642  | 5.9  | 6.2  | 12.8 | 14.1 | 1.4  | 1.0 | 2.4  | 23.9 | 15.8 | 16.5 | 43.8 | 0.0   | 16.5 | 43.6    | 43.9    |
| Hungary            | 394  | 17.2 | 4.7  | 10.4 | 11.9 | 2.3  | 0.2 | 2.6  | 5.4  | 14.5 | 30.8 | 49.3 | 0.0   | 30.8 | 46.1    | 52.8    |
| Indonesia          | 725  | 3.3  | 1.2  | 12.9 | 12.6 | 1.9  | 0.2 | 0.5  | 4.3  | 50.7 | 12.4 | 32.5 | 0.0   | 12.4 | 31.4    | 33.7    |
| Iran, Islamic Rep. | 663  | 3.5  | 1.7  | 7.8  | 7.9  | 1.1  | 1.0 | 1.5  | 4.9  | 18.6 | 51.8 | 24.6 | 0.0   | 51.8 | 18.8    | 28.6    |
| Israel             | 526  | 7.3  | 7.8  | 16.1 | 14.7 | 1.9  | 4.2 | 2.5  | 7.7  | 13.1 | 24.8 | 54.4 | 0.0   | 24.8 | 56.3    | 52.3    |
| Italy              | 415  | 6.5  | 2.0  | 13.6 | 13.9 | 5.3  | 2.4 | 3.7  | 5.8  | 12.8 | 33.9 | 47.4 | 0.2   | 33.8 | 43.8    | 51.4    |
| Japan              | 585  | 9.7  | 3.1  | 10.9 | 20.6 | 4.4  | 0.5 | 1.6  | 18.7 | 12.3 | 18.2 | 50.8 | 0.0   | 18.2 | 50.9    | 50.7    |
| Jordan             | 630  | 5.7  | 2.1  | 8.9  | 11.2 | 1.7  | 1.1 | 1.5  | 8.6  | 34.7 | 24.6 | 32.1 | 0.0   | 24.6 | 36.3    | 28.4    |
| Korea, Rep. of     | 763  | 6.6  | 0.2  | 11.1 | 11.9 | 7.1  | 2.2 | 2.4  | 16.8 | 26.9 | 14.8 | 41.5 | 0.0   | 14.8 | 39.6    | 43.3    |
| Latvia (LSS)       | 354  | 15.1 | 5.9  | 12.8 | 12.9 | 4.8  | 2.5 | 2.2  | 5.9  | 10.5 | 27.5 | 56.1 | 0.7   | 26.9 | 57.5    | 54.8    |
| Lithuania          | 292  | 2.7  | 0.9  | 19.4 | 19.5 | 4.0  | 1.2 | 0.7  | 1.3  | 18.9 | 31.3 | 48.5 | 0.0   | 31.3 | 45.8    | 51.5    |
| Macedonia, Rep. of | 506  | 5.2  | 1.8  | 9.0  | 8.5  | 2.8  | 0.3 | 5.2  | 1.7  | 16.7 | 48.7 | 32.8 | 0.0   | 48.7 | 33.0    | 32.6    |
| Malaysia           | 702  | 3.8  | 1.2  | 14.7 | 12.7 | 3.9  | 1.0 | 2.3  | 8.1  | 25.8 | 26.3 | 39.8 | 0.0   | 26.3 | 40.7    | 38.6    |
| Moldova            | 477  | 10.2 | 2.4  | 17.6 | 9.8  | 1.4  | 1.4 | 7.5  | 0.9  | 7.6  | 41.2 | 50.3 | 0.0   | 41.2 | 48.8    | 51.9    |
| Morocco            | 649  | 1.3  | 2.2  | 3.6  | 2.1  | 3.7  | 1.6 | 8.0  | 0.0  | 15.0 | 62.6 | 22.3 | 0.0   | 62.6 | 23.2    | 21.7    |
| Netherlands        | 365  | 14.6 | 5.7  | 14.8 | 12.6 | 1.0  | 3.1 | 7.9  | 14.4 | 14.6 | 11.3 | 59.7 | 0.0   | 11.3 | 61.0    | 58.2    |
| New Zealand        | 435  | 20.3 | 7.5  | 16.8 | 9.8  | 2.7  | 1.8 | 7.9  | 5.9  | 9.8  | 17.7 | 66.7 | 0.0   | 17.7 | 68.1    | 65.2    |
| Philippines        | 848  | 2.0  | 0.2  | 1.7  | 4.0  | 0.9  | 0.2 | 2.1  | 0.5  | 34.7 | 53.8 | 11.1 | 0.0   | 53.8 | 12.3    | 9.7     |
| Romania            | 431  | 8.1  | 2.2  | 11.9 | 9.8  | 4.8  | 1.9 | 1.0  | 3.2  | 13.4 | 43.8 | 39.7 | 0.2   | 43.5 | 35.4    | 43.2    |
| Russian Federation | 531  | 9.4  | 1.3  | 18.1 | 12.0 | 4.3  | 0.8 | 3.4  | 4.2  | 6.2  | 40.3 | 49.3 | 0.1   | 40.2 | 50.2    | 48.4    |
| Singapore          | 624  | 15.8 | 2.7  | 18.4 | 17.2 | 5.2  | 0.5 | 4.1  | 7.7  | 15.6 | 12.8 | 63.9 | 0.0   | 12.8 | 65.4    | 62.8    |
| Slovak Republic    | 436  | 16.1 | 5.5  | 17.0 | 14.1 | 4.6  | 1.1 | 2.7  | 3.5  | 11.0 | 24.2 | 61.2 | 0.0   | 24.2 | 61.2    | 61.2    |
| Slovenia           | 389  | 10.1 | 2.4  | 9.3  | 14.2 | 8.4  | 2.3 | 4.8  | 10.7 | 7.1  | 30.7 | 51.6 | 0.0   | 30.7 | 54.9    | 48.4    |
| South Africa       | 993  | 1.0  | 0.9  | 3.3  | 2.7  | 1.2  | 0.7 | 0.6  | 1.5  | 45.3 | 42.7 | 10.5 | 0.0   | 42.7 | 11.8    | 9.0     |
| Thailand           | 711  | 3.2  | 1.2  | 17.9 | 13.3 | 4.9  | 2.4 | 21.9 | 9.9  | 15.9 | 9.4  | 64.9 | 0.0   | 9.4  | 66.3    | 63.1    |
| Tunisia            | 626  | 4.2  | 1.8  | 6.0  | 9.0  | 3.9  | 0.7 | 15.8 | 1.8  | 28.8 | 28.1 | 41.3 | 0.0   | 28.1 | 40.6    | 42.1    |
| Turkey             | 990  | 1.4  | 1.0  | 8.5  | 10.2 | 2.3  | 1.5 | 2.4  | 12.5 | 23.4 | 36.7 | 27.3 | 0.0   | 36.7 | 28.2    | 26.5    |
| United States      | 1080 | 14.5 | 5.5  | 16.2 | 9.3  | 2.7  | 1.0 | 2.4  | 21.0 | 15.4 | 12.1 | 51.6 | 0.0   | 12.1 | 54.0    | 49.3    |
| International Avg. | .    | 8.8  | 3.7  | 12.5 | 11.5 | 3.8  | 1.4 | 5.1  | 7.7  | 18.1 | 27.4 | 46.8 | 0.1   | 27.3 | 47.1    | 46.5    |

V1 = % Scoring 1 or better V2 = % Scoring 2 or better V3 = % Scoring 3 or better  
 Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.  
 Because of missing gender information, some totals may appear inconsistent

Science: Life Science  
 Label: Two outcomes of introducing new species ( S022165D - R03D )  
 Item Type = EX Key = X

| COUNTRY            | N    | 20   | 10   | 70   | 99   | V1   | V2   | NOT REACH |      | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------|------|-----------|------|-------------------|------------------|
|                    |      |      |      |      |      |      |      | ED        | OMIT |                   |                  |
| Australia          | 500  | 73.8 | 13.9 | 4.9  | 7.3  | 87.7 | 73.8 | 0.0       | 7.3  | 75.2              | 72.2             |
| Belgium (Flemish)  | 657  | 49.7 | 35.3 | 7.9  | 7.2  | 84.9 | 49.7 | 0.0       | 7.2  | 51.0              | 48.5             |
| Bulgaria           | 407  | 43.1 | 28.2 | 5.1  | 23.6 | 71.3 | 43.1 | 0.3       | 23.3 | 48.3              | 37.9             |
| Canada             | 1084 | 57.4 | 27.7 | 8.9  | 5.9  | 85.1 | 57.4 | 0.0       | 5.9  | 58.9              | 56.2             |
| Chile              | 734  | 28.4 | 30.4 | 18.6 | 22.7 | 58.7 | 28.4 | 0.0       | 22.7 | 29.6              | 27.2             |
| Chinese Taipei     | 717  | 51.6 | 29.7 | 12.6 | 6.2  | 81.3 | 51.6 | 0.0       | 6.2  | 53.5              | 49.6             |
| Cyprus             | 391  | 34.6 | 28.2 | 13.7 | 23.5 | 62.8 | 34.6 | 0.0       | 23.5 | 37.3              | 32.1             |
| Czech Republic     | 424  | 34.4 | 27.6 | 20.8 | 17.3 | 61.9 | 34.4 | 0.0       | 17.3 | 32.3              | 36.6             |
| England            | 362  | 55.9 | 22.3 | 9.0  | 12.8 | 78.2 | 55.9 | 1.9       | 10.9 | 54.8              | 57.0             |
| Finland            | 370  | 55.7 | 26.0 | 10.6 | 7.7  | 81.7 | 55.7 | 0.0       | 7.7  | 58.1              | 53.2             |
| Hong Kong, SAR     | 643  | 28.7 | 42.6 | 20.8 | 7.9  | 71.3 | 28.7 | 0.0       | 7.9  | 29.8              | 27.7             |
| Hungary            | 394  | 44.4 | 27.3 | 11.0 | 17.3 | 71.6 | 44.4 | 0.0       | 17.3 | 41.8              | 47.4             |
| Indonesia          | 725  | 23.3 | 42.1 | 28.1 | 6.5  | 65.4 | 23.3 | 0.0       | 6.5  | 22.5              | 24.1             |
| Iran, Islamic Rep. | 663  | 22.3 | 21.8 | 15.1 | 40.8 | 44.1 | 22.3 | 0.0       | 40.8 | 16.6              | 26.2             |
| Israel             | 526  | 46.8 | 27.8 | 8.7  | 16.6 | 74.6 | 46.8 | 0.0       | 16.6 | 49.1              | 44.0             |
| Italy              | 415  | 40.1 | 29.2 | 8.6  | 22.1 | 69.3 | 40.1 | 0.2       | 21.9 | 36.4              | 44.4             |
| Japan              | 585  | 39.4 | 37.5 | 13.4 | 9.6  | 76.9 | 39.4 | 0.0       | 9.6  | 37.7              | 41.0             |
| Jordan             | 630  | 20.8 | 33.7 | 27.5 | 18.1 | 54.4 | 20.8 | 0.0       | 18.1 | 19.9              | 21.5             |
| Korea, Rep. of     | 763  | 32.9 | 36.8 | 16.9 | 13.4 | 69.7 | 32.9 | 0.0       | 13.4 | 31.5              | 34.3             |
| Latvia (LSS)       | 354  | 53.3 | 25.7 | 6.8  | 14.2 | 79.0 | 53.3 | 0.7       | 13.5 | 55.3              | 51.5             |
| Lithuania          | 292  | 45.5 | 32.3 | 4.4  | 17.8 | 77.8 | 45.5 | 0.0       | 17.8 | 43.0              | 48.4             |
| Macedonia, Rep. of | 506  | 30.5 | 16.9 | 15.8 | 36.8 | 47.4 | 30.5 | 0.0       | 36.8 | 30.8              | 30.1             |
| Malaysia           | 702  | 31.9 | 34.6 | 17.5 | 16.0 | 66.5 | 31.9 | 0.0       | 16.0 | 33.1              | 30.4             |
| Moldova            | 477  | 47.9 | 19.2 | 6.9  | 26.0 | 67.1 | 47.9 | 0.0       | 26.0 | 46.6              | 49.3             |
| Morocco            | 649  | 18.8 | 13.1 | 13.1 | 55.0 | 31.9 | 18.8 | 0.0       | 55.0 | 16.9              | 20.1             |
| Netherlands        | 365  | 47.5 | 28.7 | 18.0 | 5.8  | 76.2 | 47.5 | 0.0       | 5.8  | 52.7              | 41.7             |
| New Zealand        | 435  | 60.0 | 17.8 | 9.8  | 12.4 | 77.8 | 60.0 | 0.0       | 12.4 | 61.2              | 58.8             |
| Philippines        | 848  | 7.3  | 12.0 | 36.4 | 44.3 | 19.3 | 7.3  | 0.0       | 44.3 | 7.7               | 6.9              |
| Romania            | 431  | 35.5 | 22.3 | 10.2 | 32.0 | 57.8 | 35.5 | 0.2       | 31.8 | 29.6              | 40.6             |
| Russian Federation | 531  | 45.8 | 29.7 | 4.7  | 19.7 | 75.5 | 45.8 | 0.1       | 19.6 | 46.6              | 45.0             |
| Singapore          | 624  | 57.4 | 22.1 | 11.7 | 8.8  | 79.5 | 57.4 | 0.0       | 8.8  | 57.5              | 57.3             |
| Slovak Republic    | 436  | 58.0 | 20.9 | 8.5  | 12.6 | 78.9 | 58.0 | 0.0       | 12.6 | 59.1              | 56.9             |
| Slovenia           | 389  | 43.3 | 31.4 | 10.5 | 14.9 | 74.7 | 43.3 | 0.0       | 14.9 | 45.0              | 41.7             |
| South Africa       | 993  | 7.9  | 6.1  | 49.1 | 36.9 | 14.0 | 7.9  | 0.0       | 36.9 | 8.5               | 7.3              |
| Thailand           | 711  | 57.2 | 22.6 | 12.8 | 7.4  | 79.8 | 57.2 | 0.0       | 7.4  | 57.5              | 56.8             |
| Tunisia            | 626  | 35.1 | 20.2 | 24.5 | 20.2 | 55.3 | 35.1 | 0.0       | 20.2 | 35.0              | 35.3             |
| Turkey             | 990  | 21.7 | 20.4 | 28.2 | 29.7 | 42.1 | 21.7 | 0.0       | 29.7 | 22.5              | 21.0             |
| United States      | 1080 | 41.8 | 31.6 | 17.1 | 9.6  | 73.3 | 41.8 | 0.0       | 9.6  | 44.1              | 39.5             |
| International Avg. | .    | 40.3 | 26.2 | 15.0 | 18.6 | 66.4 | 40.3 | 0.1       | 18.5 | 40.4              | 40.0             |

V1 = % Scoring 1 or better V2 = % Scoring 2 or better V3 = % Scoring 3 or better  
 Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.  
 Because of missing gender information, some totals may appear inconsistent

Science: Earth Science  
 Label: Atmospheric conditions in jets ( S022284 - R04 )  
 Item Type = SA Key = X

| COUNTRY            | N    | NOT REACHED |      |      |     |      |     |     |      |      |      | OMIT | 1.GIRL  | 2.BOY   |      |
|--------------------|------|-------------|------|------|-----|------|-----|-----|------|------|------|------|---------|---------|------|
|                    |      | 10          | 11   | 12   | 19  | 70   | 71  | 72  | 79   | 99   | V1   |      | % Right | % Right |      |
| Australia          | 500  | 41.8        | 3.6  | 3.2  | 0.4 | 16.4 | 1.7 | 2.2 | 12.5 | 18.3 | 48.9 | 0.0  | 18.3    | 42.3    | 56.8 |
| Belgium (Flemish)  | 657  | 42.9        | 2.1  | 6.1  | 0.3 | 19.4 | 0.6 | 0.5 | 17.4 | 10.7 | 51.4 | 0.0  | 10.7    | 50.0    | 52.8 |
| Bulgaria           | 407  | 29.9        | 4.9  | 2.0  | 3.5 | 0.9  | 0.0 | 0.0 | 16.7 | 42.1 | 40.3 | 0.5  | 41.6    | 35.9    | 44.7 |
| Canada             | 1084 | 41.8        | 5.2  | 3.1  | 0.1 | 13.5 | 1.4 | 2.5 | 16.9 | 15.6 | 50.2 | 0.0  | 15.6    | 46.6    | 54.3 |
| Chile              | 735  | 7.6         | 1.2  | 1.5  | 0.1 | 22.0 | 1.9 | 4.7 | 23.3 | 37.6 | 10.4 | 0.0  | 37.6    | 9.1     | 11.7 |
| Chinese Taipei     | 717  | 48.1        | 4.8  | 1.2  | 0.6 | 22.2 | 0.1 | 0.3 | 11.7 | 11.0 | 54.7 | 0.0  | 11.0    | 52.6    | 56.7 |
| Cyprus             | 390  | 13.3        | 2.6  | 1.7  | 3.6 | 9.0  | 0.7 | 0.7 | 14.3 | 54.1 | 21.2 | 0.0  | 54.1    | 20.7    | 21.7 |
| Czech Republic     | 424  | 13.8        | 3.4  | 5.7  | 5.8 | 37.1 | 0.7 | 0.0 | 17.5 | 16.0 | 28.7 | 0.0  | 16.0    | 25.8    | 31.8 |
| England            | 362  | 34.4        | 2.2  | 5.1  | 2.4 | 16.9 | 1.9 | 2.1 | 14.5 | 20.5 | 44.2 | 1.9  | 18.6    | 37.4    | 51.2 |
| Finland            | 370  | 26.5        | 1.6  | 14.4 | 0.0 | 26.7 | 0.6 | 2.1 | 18.0 | 10.1 | 42.5 | 0.0  | 10.1    | 41.7    | 43.3 |
| Hong Kong, SAR     | 643  | 24.9        | 7.6  | 1.0  | 1.7 | 23.6 | 0.7 | 3.0 | 17.1 | 20.4 | 35.3 | 0.0  | 20.4    | 37.0    | 33.5 |
| Hungary            | 394  | 21.6        | 7.1  | 2.4  | 1.4 | 17.2 | 1.5 | 3.1 | 17.1 | 28.5 | 32.5 | 0.0  | 28.5    | 26.6    | 38.6 |
| Indonesia          | 725  | 26.9        | 2.2  | 2.8  | 3.2 | 11.5 | 0.4 | 1.5 | 38.3 | 13.1 | 35.2 | 0.0  | 13.1    | 29.0    | 41.3 |
| Iran, Islamic Rep. | 663  | 15.3        | 3.6  | 3.4  | 0.4 | 4.6  | 5.2 | 2.2 | 27.0 | 38.4 | 22.6 | 0.0  | 38.4    | 19.7    | 24.7 |
| Israel             | 526  | 24.5        | 3.4  | 2.8  | 1.6 | 11.9 | 1.5 | 4.5 | 14.6 | 35.0 | 32.4 | 0.0  | 35.0    | 28.9    | 36.7 |
| Italy              | 415  | 26.6        | 2.9  | 2.5  | 2.1 | 11.7 | 0.7 | 2.2 | 13.0 | 38.3 | 34.0 | 0.2  | 38.1    | 27.8    | 41.0 |
| Japan              | 585  | 24.1        | 2.1  | 1.2  | 0.4 | 38.1 | 0.3 | 0.3 | 11.6 | 21.8 | 27.8 | 0.0  | 21.8    | 30.0    | 25.7 |
| Jordan             | 628  | 10.5        | 1.6  | 3.3  | 1.3 | 15.5 | 1.8 | 1.1 | 42.1 | 22.8 | 16.7 | 0.0  | 22.8    | 20.0    | 13.7 |
| Korea, Rep. of     | 762  | 39.2        | 4.9  | 0.8  | 0.2 | 24.6 | 0.2 | 0.4 | 5.4  | 24.2 | 45.2 | 0.0  | 24.2    | 44.8    | 45.6 |
| Latvia (LSS)       | 354  | 25.2        | 8.8  | 3.8  | 0.3 | 7.1  | 0.7 | 6.2 | 19.9 | 28.0 | 38.0 | 0.7  | 27.3    | 37.6    | 38.4 |
| Lithuania          | 292  | 29.6        | 10.5 | 4.5  | 0.0 | 4.8  | 0.0 | 0.0 | 20.6 | 29.9 | 44.6 | 0.0  | 29.9    | 42.5    | 47.0 |
| Macedonia, Rep. of | 506  | 18.3        | 5.6  | 0.8  | 3.6 | 4.4  | 0.0 | 1.1 | 17.5 | 48.7 | 28.2 | 0.0  | 48.7    | 26.0    | 30.6 |
| Malaysia           | 702  | 21.1        | 1.2  | 0.7  | 0.5 | 20.4 | 3.6 | 1.1 | 19.9 | 31.5 | 23.5 | 0.0  | 31.5    | 20.5    | 27.1 |
| Moldova            | 477  | 19.5        | 2.7  | 2.0  | 7.1 | 12.9 | 0.7 | 0.8 | 13.5 | 40.8 | 31.4 | 0.0  | 40.8    | 25.6    | 37.0 |
| Morocco            | 649  | 1.0         | 0.2  | 0.4  | 0.8 | 1.4  | 1.0 | 8.1 | 23.4 | 63.7 | 2.4  | 0.9  | 62.9    | 2.7     | 2.3  |
| Netherlands        | 365  | 15.2        | 3.0  | 6.2  | 0.0 | 48.9 | 4.6 | 1.7 | 16.5 | 4.0  | 24.3 | 0.0  | 4.0     | 26.8    | 21.6 |
| New Zealand        | 435  | 37.6        | 1.7  | 5.1  | 0.2 | 10.3 | 2.1 | 1.8 | 18.9 | 22.4 | 44.5 | 0.0  | 22.4    | 41.7    | 47.3 |
| Philippines        | 848  | 3.2         | 0.5  | 0.6  | 2.1 | 5.0  | 2.1 | 2.6 | 40.9 | 43.2 | 6.3  | 0.1  | 43.1    | 5.9     | 6.8  |
| Romania            | 431  | 21.6        | 2.7  | 2.1  | 0.2 | 12.8 | 0.3 | 1.4 | 13.6 | 45.2 | 26.7 | 0.2  | 44.9    | 24.8    | 27.9 |
| Russian Federation | 531  | 29.7        | 5.9  | 5.3  | 5.4 | 18.8 | 0.4 | 1.8 | 8.4  | 24.4 | 46.3 | 0.1  | 24.3    | 45.3    | 47.3 |
| Singapore          | 624  | 37.8        | 3.2  | 4.0  | 0.7 | 18.7 | 2.2 | 0.7 | 17.5 | 15.2 | 45.7 | 0.0  | 15.2    | 44.6    | 46.6 |
| Slovak Republic    | 436  | 53.1        | 9.4  | 1.5  | 0.9 | 5.7  | 0.3 | 0.3 | 5.9  | 22.9 | 64.9 | 0.0  | 22.9    | 63.6    | 66.2 |
| Slovenia           | 389  | 26.8        | 5.3  | 5.6  | 0.3 | 30.6 | 0.9 | 2.5 | 12.2 | 15.8 | 38.0 | 0.0  | 15.8    | 32.2    | 43.6 |
| South Africa       | 993  | 3.7         | 0.5  | 0.8  | 0.0 | 2.2  | 0.3 | 0.5 | 45.0 | 46.9 | 5.1  | 0.2  | 46.7    | 5.2     | 4.9  |
| Thailand           | 711  | 26.2        | 11.1 | 4.6  | 5.0 | 6.8  | 1.3 | 3.6 | 29.3 | 11.9 | 47.0 | 0.0  | 11.9    | 45.8    | 48.6 |
| Tunisia            | 629  | 13.9        | 1.2  | 1.4  | 0.8 | 11.6 | 8.5 | 5.0 | 26.4 | 31.1 | 17.3 | 0.0  | 31.1    | 13.5    | 21.3 |
| Turkey             | 990  | 14.1        | 6.3  | 1.2  | 3.8 | 6.4  | 4.0 | 1.4 | 23.5 | 39.2 | 25.4 | 0.0  | 39.2    | 22.4    | 28.1 |
| United States      | 1080 | 13.8        | 1.2  | 2.0  | 0.0 | 41.6 | 1.8 | 3.2 | 20.9 | 15.5 | 17.0 | 0.0  | 15.5    | 16.9    | 17.1 |
| International Avg. | .    | 24.4        | 3.9  | 3.1  | 1.6 | 16.1 | 1.5 | 2.0 | 19.6 | 27.9 | 32.9 | 0.1  | 27.7    | 30.8    | 35.1 |

V1 = % Scoring 1 or better V2 = % Scoring 2 or better V3 = % Scoring 3 or better  
 Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.  
 Because of missing gender information, some totals may appear inconsistent

Science: Chemistry  
 Label: Small pieces of wood burn faster ( S022213 - R05 )  
 Item Type = SA Key = X

| COUNTRY            | N    | 10   | 11   | 12   | 19   | 70   | 71   | 72   | 79   | 99   | V1   | NOT REACHED | OMIT | 1.GIRL % Right | 2.BOY % Right |
|--------------------|------|------|------|------|------|------|------|------|------|------|------|-------------|------|----------------|---------------|
| Australia          | 500  | 15.7 | 7.8  | 4.4  | 1.0  | 39.0 | 4.0  | 3.0  | 20.0 | 5.1  | 28.9 | 0.0         | 5.1  | 24.7           | 33.9          |
| Belgium (Flemish)  | 657  | 15.2 | 5.0  | 6.1  | 1.8  | 38.2 | 6.5  | 3.0  | 18.9 | 5.3  | 28.2 | 0.0         | 5.3  | 28.5           | 27.9          |
| Bulgaria           | 407  | 18.9 | 5.2  | 0.4  | 4.8  | 0.2  | 0.2  | 0.0  | 35.3 | 35.0 | 29.3 | 0.5         | 34.5 | 32.7           | 25.9          |
| Canada             | 1084 | 10.1 | 8.1  | 4.4  | 0.3  | 27.4 | 7.6  | 4.2  | 32.6 | 5.3  | 22.9 | 0.0         | 5.3  | 20.7           | 25.4          |
| Chile              | 735  | 3.5  | 0.5  | 3.3  | 2.1  | 35.0 | 9.0  | 1.6  | 26.5 | 18.3 | 9.5  | 0.0         | 18.3 | 8.6            | 10.3          |
| Chinese Taipei     | 717  | 11.7 | 35.2 | 1.4  | 2.1  | 16.0 | 9.4  | 0.6  | 20.3 | 3.3  | 50.4 | 0.0         | 3.3  | 47.8           | 53.0          |
| Cyprus             | 389  | 4.7  | 3.9  | 2.5  | 1.6  | 14.4 | 5.6  | 0.7  | 29.3 | 37.4 | 12.6 | 0.0         | 37.4 | 10.0           | 15.1          |
| Czech Republic     | 424  | 14.0 | 7.5  | 6.9  | 0.3  | 20.0 | 11.1 | 1.7  | 26.7 | 11.7 | 28.8 | 0.0         | 11.7 | 26.1           | 31.6          |
| England            | 362  | 14.4 | 11.4 | 2.7  | 1.0  | 29.3 | 4.1  | 4.7  | 24.3 | 8.0  | 29.6 | 1.9         | 6.2  | 26.8           | 32.4          |
| Finland            | 370  | 1.1  | 5.6  | 10.1 | 22.7 | 6.9  | 7.5  | 7.2  | 31.9 | 7.1  | 39.4 | 0.0         | 7.1  | 42.7           | 36.0          |
| Hong Kong, SAR     | 643  | 4.7  | 6.0  | 1.7  | 1.2  | 13.7 | 9.2  | 3.0  | 46.4 | 14.1 | 13.5 | 0.0         | 14.1 | 11.7           | 15.3          |
| Hungary            | 394  | 9.5  | 14.1 | 8.5  | 0.2  | 11.3 | 10.5 | 1.8  | 29.4 | 14.7 | 32.3 | 0.0         | 14.7 | 25.6           | 38.7          |
| Indonesia          | 725  | 7.3  | 2.2  | 11.4 | 2.1  | 33.3 | 12.4 | 4.4  | 25.1 | 2.0  | 22.9 | 0.0         | 2.0  | 19.7           | 26.1          |
| Iran, Islamic Rep. | 663  | 15.0 | 1.1  | 1.6  | 7.0  | 15.9 | 9.3  | 2.8  | 28.3 | 19.0 | 24.8 | 0.0         | 19.0 | 17.7           | 29.6          |
| Israel             | 526  | 5.0  | 2.3  | 8.2  | 1.2  | 29.4 | 11.8 | 0.6  | 20.1 | 21.2 | 16.8 | 0.0         | 21.2 | 15.4           | 18.6          |
| Italy              | 415  | 4.9  | 3.3  | 3.8  | 0.7  | 17.1 | 5.7  | 1.7  | 37.3 | 25.5 | 12.7 | 0.2         | 25.4 | 10.5           | 15.1          |
| Japan              | 585  | 3.9  | 0.9  | 0.3  | 0.2  | 12.9 | 3.3  | 20.7 | 44.6 | 13.3 | 5.3  | 0.0         | 13.3 | 5.2            | 5.4           |
| Jordan             | 628  | 9.8  | 1.0  | 4.4  | 3.2  | 11.4 | 1.7  | 7.1  | 48.0 | 13.4 | 18.5 | 0.0         | 13.4 | 19.4           | 17.7          |
| Korea, Rep. of     | 763  | 12.2 | 8.3  | 3.5  | 3.8  | 22.3 | 10.5 | 8.7  | 17.5 | 13.1 | 27.8 | 0.0         | 13.1 | 29.9           | 25.8          |
| Latvia (LSS)       | 354  | 19.9 | 2.8  | 8.2  | 0.8  | 22.0 | 18.4 | 4.8  | 10.0 | 13.0 | 31.7 | 0.7         | 12.4 | 31.7           | 31.8          |
| Lithuania          | 292  | 7.8  | 5.5  | 5.1  | 1.7  | 2.2  | 22.3 | 0.3  | 33.8 | 21.3 | 20.1 | 0.0         | 21.3 | 17.1           | 23.4          |
| Macedonia, Rep. of | 506  | 18.0 | 5.4  | 1.9  | 5.5  | 4.2  | 6.9  | 1.4  | 23.0 | 33.8 | 30.8 | 0.0         | 33.8 | 28.9           | 32.8          |
| Malaysia           | 702  | 11.8 | 5.7  | 3.1  | 0.3  | 9.8  | 14.9 | 3.3  | 33.8 | 17.3 | 20.9 | 0.0         | 17.3 | 22.8           | 18.7          |
| Moldova            | 477  | 28.8 | 4.6  | 9.9  | 9.6  | 12.2 | 8.1  | 0.6  | 9.0  | 17.1 | 53.0 | 0.0         | 17.1 | 46.5           | 59.2          |
| Morocco            | 649  | 0.3  | 0.1  | 1.2  | 0.7  | 0.6  | 0.0  | 0.6  | 36.6 | 59.9 | 2.2  | 1.4         | 58.5 | 3.2            | 1.5           |
| Netherlands        | 365  | 15.4 | 12.1 | 2.1  | 0.2  | 22.5 | 2.5  | 1.8  | 37.7 | 5.6  | 29.8 | 0.0         | 5.6  | 32.9           | 26.4          |
| New Zealand        | 435  | 14.4 | 4.3  | 9.3  | 1.8  | 36.4 | 3.9  | 2.4  | 18.6 | 9.1  | 29.7 | 0.0         | 9.1  | 32.3           | 27.1          |
| Philippines        | 848  | 4.2  | 0.5  | 0.8  | 4.8  | 4.8  | 4.5  | 1.5  | 46.6 | 32.3 | 10.2 | 0.1         | 32.2 | 10.1           | 10.5          |
| Romania            | 431  | 14.5 | 3.7  | 2.7  | 0.0  | 18.7 | 13.3 | 3.7  | 18.0 | 25.5 | 20.9 | 0.2         | 25.2 | 20.4           | 21.4          |
| Russian Federation | 531  | 19.8 | 10.6 | 2.3  | 0.2  | 13.2 | 1.3  | 1.9  | 29.9 | 20.8 | 32.9 | 0.1         | 20.7 | 34.8           | 30.8          |
| Singapore          | 624  | 8.2  | 14.8 | 1.7  | 2.3  | 22.5 | 4.6  | 6.2  | 32.5 | 6.9  | 27.1 | 0.0         | 6.9  | 21.7           | 31.5          |
| Slovak Republic    | 436  | 20.9 | 8.5  | 14.3 | 9.6  | 7.2  | 6.5  | 0.0  | 18.6 | 14.4 | 53.3 | 0.0         | 14.4 | 49.3           | 57.4          |
| Slovenia           | 389  | 15.2 | 7.6  | 7.2  | 1.1  | 13.7 | 18.5 | 1.6  | 24.6 | 10.6 | 31.0 | 0.0         | 10.6 | 29.3           | 32.7          |
| South Africa       | 993  | 4.2  | 0.9  | 2.0  | 0.1  | 6.3  | 6.1  | 1.3  | 45.2 | 33.9 | 7.3  | 0.2         | 33.7 | 6.9            | 7.7           |
| Thailand           | 711  | 7.5  | 2.4  | 1.4  | 1.4  | 47.2 | 12.2 | 1.7  | 21.9 | 4.4  | 12.6 | 0.0         | 4.4  | 12.7           | 12.5          |
| Tunisia            | 629  | 6.0  | 1.3  | 1.2  | 0.5  | 10.5 | 15.7 | 3.3  | 35.7 | 25.8 | 9.1  | 0.0         | 25.8 | 6.4            | 11.8          |
| Turkey             | 990  | 4.5  | 6.9  | 2.6  | 1.0  | 14.5 | 17.7 | 3.6  | 26.2 | 22.9 | 15.0 | 0.0         | 22.9 | 16.9           | 13.3          |
| United States      | 1080 | 8.4  | 5.1  | 4.6  | 0.0  | 34.5 | 4.0  | 1.6  | 35.1 | 6.6  | 18.2 | 0.0         | 6.6  | 16.0           | 20.3          |
| International Avg. | .    | 10.8 | 6.1  | 4.4  | 2.6  | 18.3 | 8.4  | 3.1  | 28.9 | 17.2 | 23.9 | 0.1         | 17.1 | 22.7           | 25.1          |

V1 = % Scoring 1 or better V2 = % Scoring 2 or better V3 = % Scoring 3 or better  
 Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.  
 Because of missing gender information, some totals may appear inconsistent

Science: Environmental and Resource Issues  
 Label: Result of global warming ( S022254 - R06 )  
 Item Type = MC Key = A

| COUNTRY            | N    | A    | B    | C    | D    | OTHER<br>INCOR<br>RECT | DIFF | INVALID | NOT<br>REACHED | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------------------------|------|---------|----------------|------|-------------------|------------------|
| Australia          | 500  | 52.0 | 3.0  | 3.0  | 41.2 | 0.9                    | 52.0 | 0.4     | 0.0            | 0.5  | 43.9              | 61.6             |
| Belgium (Flemish)  | 657  | 32.9 | 8.1  | 17.1 | 40.9 | 0.9                    | 32.9 | 0.3     | 0.0            | 0.6  | 29.8              | 35.8             |
| Bulgaria           | 406  | 49.3 | 2.6  | 15.5 | 25.3 | 7.4                    | 49.3 | 3.8     | 0.5            | 3.0  | 42.5              | 56.1             |
| Canada             | 1084 | 31.5 | 7.7  | 9.3  | 50.7 | 0.8                    | 31.5 | 0.3     | 0.0            | 0.6  | 24.3              | 39.3             |
| Chile              | 735  | 15.7 | 14.2 | 27.3 | 40.3 | 2.5                    | 15.7 | 0.0     | 0.0            | 2.5  | 14.5              | 16.8             |
| Chinese Taipei     | 717  | 57.6 | 0.9  | 8.7  | 32.7 | 0.1                    | 57.6 | 0.0     | 0.0            | 0.1  | 51.7              | 63.5             |
| Cyprus             | 392  | 42.1 | 7.5  | 8.4  | 41.4 | 0.6                    | 42.1 | 0.3     | 0.0            | 0.3  | 50.7              | 34.0             |
| Czech Republic     | 424  | 31.9 | 5.6  | 7.1  | 53.9 | 1.5                    | 31.9 | 0.5     | 0.0            | 1.1  | 21.8              | 42.6             |
| England            | 362  | 33.0 | 4.7  | 5.4  | 55.0 | 1.9                    | 33.0 | 0.0     | 1.9            | 0.0  | 24.1              | 42.2             |
| Finland            | 370  | 30.9 | 3.5  | 8.5  | 57.1 | 0.0                    | 30.9 | 0.0     | 0.0            | 0.0  | 23.4              | 38.6             |
| Hong Kong, SAR     | 643  | 58.7 | 2.2  | 11.8 | 26.1 | 1.2                    | 58.7 | 0.2     | 0.0            | 1.0  | 52.8              | 64.5             |
| Hungary            | 394  | 44.4 | 3.6  | 13.4 | 36.5 | 2.2                    | 44.4 | 1.1     | 0.0            | 1.1  | 33.4              | 55.4             |
| Indonesia          | 725  | 9.6  | 3.2  | 24.1 | 62.2 | 0.9                    | 9.6  | 0.0     | 0.0            | 0.9  | 9.1               | 10.1             |
| Iran, Islamic Rep. | 663  | 8.7  | 14.4 | 37.9 | 38.6 | 0.5                    | 8.7  | 0.0     | 0.0            | 0.5  | 7.8               | 9.2              |
| Israel             | 526  | 22.6 | 7.9  | 36.5 | 28.1 | 4.8                    | 22.6 | 0.3     | 0.0            | 4.5  | 17.0              | 29.6             |
| Italy              | 415  | 48.0 | 6.5  | 9.7  | 34.6 | 1.2                    | 48.0 | 0.0     | 0.2            | 1.0  | 43.5              | 53.0             |
| Japan              | 585  | 66.9 | 2.5  | 6.3  | 23.1 | 1.2                    | 66.9 | 1.0     | 0.0            | 0.2  | 59.9              | 73.8             |
| Jordan             | 630  | 19.7 | 12.1 | 23.7 | 39.3 | 5.1                    | 19.7 | 0.2     | 0.0            | 4.9  | 18.6              | 20.7             |
| Korea, Rep. of     | 763  | 46.5 | 3.7  | 9.5  | 40.1 | 0.2                    | 46.5 | 0.0     | 0.0            | 0.2  | 41.7              | 51.4             |
| Latvia (LSS)       | 355  | 35.2 | 6.0  | 23.7 | 31.9 | 3.2                    | 35.2 | 0.9     | 0.7            | 1.6  | 36.2              | 34.3             |
| Lithuania          | 292  | 57.1 | 6.9  | 9.5  | 22.2 | 4.3                    | 57.1 | 0.0     | 0.0            | 4.3  | 55.5              | 59.0             |
| Macedonia, Rep. of | 506  | 25.5 | 11.5 | 29.8 | 27.8 | 5.4                    | 25.5 | 0.2     | 0.0            | 5.2  | 22.0              | 29.2             |
| Malaysia           | 702  | 17.8 | 7.0  | 25.4 | 47.8 | 1.9                    | 17.8 | 0.1     | 0.0            | 1.8  | 16.6              | 19.2             |
| Moldova            | 477  | 29.3 | 14.3 | 26.1 | 28.5 | 1.7                    | 29.3 | 0.4     | 0.0            | 1.3  | 27.5              | 31.1             |
| Morocco            | 648  | 21.5 | 7.0  | 46.4 | 18.6 | 6.5                    | 21.5 | 0.5     | 1.5            | 4.4  | 25.6              | 18.3             |
| Netherlands        | 365  | 32.8 | 5.9  | 15.2 | 45.0 | 1.1                    | 32.8 | 0.9     | 0.0            | 0.2  | 27.0              | 39.2             |
| New Zealand        | 435  | 43.0 | 5.0  | 7.0  | 44.2 | 0.8                    | 43.0 | 0.4     | 0.0            | 0.4  | 34.0              | 51.8             |
| Philippines        | 848  | 15.7 | 15.0 | 19.6 | 49.0 | 0.8                    | 15.7 | 0.2     | 0.1            | 0.4  | 13.3              | 18.4             |
| Romania            | 431  | 21.8 | 7.4  | 20.0 | 47.4 | 3.3                    | 21.8 | 0.8     | 0.2            | 2.3  | 19.4              | 24.3             |
| Russian Federation | 531  | 38.0 | 3.4  | 13.1 | 43.8 | 1.7                    | 38.0 | 0.5     | 0.1            | 1.1  | 38.0              | 38.0             |
| Singapore          | 624  | 56.0 | 1.9  | 4.1  | 37.9 | 0.2                    | 56.0 | 0.0     | 0.0            | 0.2  | 46.6              | 63.5             |
| Slovak Republic    | 436  | 41.6 | 3.8  | 11.0 | 41.8 | 1.8                    | 41.6 | 1.0     | 0.0            | 0.8  | 35.1              | 48.1             |
| Slovenia           | 389  | 27.8 | 12.8 | 25.8 | 31.9 | 1.8                    | 27.8 | 0.9     | 0.0            | 1.0  | 21.8              | 33.5             |
| South Africa       | 993  | 36.6 | 21.8 | 21.3 | 19.5 | 0.9                    | 36.6 | 0.2     | 0.2            | 0.5  | 35.2              | 38.1             |
| Thailand           | 711  | 12.8 | 4.1  | 23.4 | 59.6 | 0.1                    | 12.8 | 0.0     | 0.0            | 0.1  | 10.0              | 16.2             |
| Tunisia            | 629  | 10.9 | 3.7  | 17.9 | 58.6 | 8.9                    | 10.9 | 8.1     | 0.0            | 0.7  | 12.3              | 9.5              |
| Turkey             | 990  | 14.6 | 12.4 | 35.3 | 35.2 | 2.6                    | 14.6 | 0.1     | 0.0            | 2.5  | 8.8               | 19.8             |
| United States      | 1080 | 30.4 | 7.9  | 9.0  | 52.2 | 0.6                    | 30.4 | 0.0     | 0.0            | 0.6  | 25.4              | 35.3             |
| International Avg. | .    | 33.4 | 7.2  | 17.5 | 39.7 | 2.1                    | 33.4 | 0.6     | 0.1            | 1.4  | 29.5              | 37.5             |

DIFF = Item Difficulty      Other Incorrect = Sum of invalid, not reached and omitted  
 Because of missing gender information, some totals may appear inconsistent



Science: Environmental and Resource Issues  
 Label: Positive/negative effect of dam ( S022088A - W01A )  
 Item Type = EX Key = X

| COUNTRY            | N    | NOT REACHED |      |      |     |      |      |     |      |      |      | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |      |
|--------------------|------|-------------|------|------|-----|------|------|-----|------|------|------|------|-------------------|------------------|------|
|                    |      | 10          | 11   | 12   | 13  | 19   | 70   | 71  | 79   | 99   | V1   |      |                   |                  |      |
| Australia          | 1011 | 30.4        | 44.9 | 1.3  | 0.8 | 0.4  | 4.7  | 2.2 | 11.2 | 4.2  | 77.7 | 1.5  | 2.7               | 79.8             | 75.7 |
| Belgium (Flemish)  | 1320 | 50.0        | 17.5 | 7.2  | 3.9 | 0.9  | 4.0  | 1.6 | 10.4 | 4.6  | 79.5 | 0.6  | 4.0               | 77.4             | 81.5 |
| Bulgaria           | 824  | 27.3        | 19.9 | 4.1  | 2.9 | 4.3  | 2.6  | 3.1 | 13.7 | 22.2 | 58.5 | 5.1  | 17.0              | 55.9             | 60.9 |
| Canada             | 2163 | 44.6        | 22.3 | 6.4  | 3.5 | 1.0  | 4.8  | 1.2 | 11.4 | 4.8  | 77.8 | 0.7  | 4.1               | 76.9             | 78.5 |
| Chile              | 1467 | 7.9         | 35.4 | 1.2  | 1.2 | 0.9  | 7.5  | 0.4 | 17.0 | 28.6 | 46.5 | 11.1 | 17.5              | 43.0             | 50.0 |
| Chinese Taipei     | 1436 | 22.4        | 66.2 | 0.1  | 1.0 | 0.0  | 1.7  | 1.4 | 3.4  | 3.9  | 89.7 | 0.8  | 3.2               | 92.2             | 87.3 |
| Cyprus             | 765  | 12.0        | 40.8 | 11.5 | 0.1 | 3.7  | 1.0  | 1.5 | 11.6 | 17.8 | 68.1 | 2.2  | 15.6              | 67.4             | 68.8 |
| Czech Republic     | 865  | 14.3        | 50.3 | 5.8  | 0.8 | 1.3  | 11.5 | 0.5 | 8.2  | 7.5  | 72.4 | 0.2  | 7.2               | 67.5             | 77.5 |
| England            | 732  | 44.3        | 18.4 | 4.7  | 1.1 | 2.3  | 10.5 | 3.6 | 7.8  | 7.4  | 70.7 | 2.6  | 4.8               | 68.7             | 72.6 |
| Finland            | 721  | 41.0        | 29.8 | 2.6  | 0.5 | 2.7  | 10.3 | 1.4 | 6.6  | 5.1  | 76.6 | 0.4  | 4.7               | 79.7             | 73.5 |
| Hong Kong, SAR     | 1286 | 43.7        | 25.8 | 1.2  | 1.4 | 0.3  | 5.5  | 2.5 | 13.8 | 5.8  | 72.4 | 1.1  | 4.8               | 74.6             | 70.2 |
| Hungary            | 797  | 42.9        | 23.7 | 1.0  | 4.6 | 1.5  | 4.0  | 0.6 | 8.8  | 12.9 | 73.6 | 1.7  | 11.2              | 70.4             | 77.4 |
| Indonesia          | 1464 | 10.3        | 56.3 | 8.2  | 0.6 | 2.5  | 0.5  | 0.5 | 16.7 | 4.4  | 77.9 | 0.7  | 3.8               | 78.3             | 77.5 |
| Iran, Islamic Rep. | 1332 | 16.7        | 50.1 | 2.1  | 0.7 | 0.6  | 0.8  | 2.0 | 16.8 | 10.2 | 70.2 | 2.1  | 8.2               | 66.4             | 72.8 |
| Israel             | 1038 | 38.0        | 16.5 | 1.2  | 1.3 | 2.9  | 4.4  | 1.1 | 12.7 | 21.9 | 59.9 | 6.8  | 15.1              | 58.0             | 62.2 |
| Italy              | 836  | 25.5        | 29.4 | 10.0 | 2.8 | 1.7  | 2.5  | 1.0 | 12.3 | 14.8 | 69.4 | 2.9  | 11.9              | 65.6             | 73.0 |
| Japan              | 1191 | 30.8        | 46.2 | 0.3  | 0.4 | 0.5  | 10.0 | 0.5 | 5.0  | 6.3  | 78.2 | 1.1  | 5.3               | 76.5             | 79.9 |
| Jordan             | 1273 | 5.4         | 46.9 | 2.9  | 0.3 | 1.8  | 1.3  | 1.9 | 25.7 | 13.9 | 57.2 | 1.7  | 12.2              | 64.0             | 51.2 |
| Korea, Rep. of     | 1529 | 17.5        | 65.7 | 1.6  | 0.6 | 0.0  | 7.1  | 1.0 | 2.8  | 3.8  | 85.4 | 0.2  | 3.5               | 85.8             | 85.0 |
| Latvia (LSS)       | 710  | 45.2        | 23.9 | 4.0  | 1.1 | 2.8  | 1.7  | 2.2 | 7.8  | 11.2 | 77.1 | 2.8  | 8.4               | 73.2             | 81.9 |
| Lithuania          | 587  | 26.7        | 13.9 | 7.0  | 3.6 | 1.8  | 6.6  | 1.3 | 24.6 | 14.6 | 53.0 | 1.7  | 12.9              | 47.9             | 58.0 |
| Macedonia, Rep. of | 998  | 15.2        | 29.7 | 4.5  | 1.0 | 3.1  | 2.2  | 0.5 | 10.6 | 33.1 | 53.6 | 8.0  | 25.2              | 54.1             | 53.0 |
| Malaysia           | 1387 | 10.2        | 50.3 | 3.4  | 7.7 | 1.1  | 9.0  | 1.0 | 9.2  | 7.9  | 72.9 | 1.5  | 6.5               | 73.8             | 71.8 |
| Moldova            | 917  | 23.2        | 11.3 | 7.1  | 2.3 | 4.2  | 0.8  | 1.5 | 18.6 | 31.1 | 48.0 | 6.8  | 24.3              | 47.3             | 48.9 |
| Morocco            | 1365 | 3.5         | 10.5 | 1.9  | 0.3 | 16.8 | 1.5  | 0.6 | 27.8 | 37.0 | 33.1 | 7.7  | 29.3              | 32.1             | 33.8 |
| Netherlands        | 741  | 58.1        | 12.3 | 5.7  | 1.6 | 3.2  | 3.7  | 1.2 | 9.7  | 4.6  | 80.9 | 1.3  | 3.3               | 82.1             | 79.6 |
| New Zealand        | 904  | 36.3        | 32.0 | 2.5  | 2.7 | 0.6  | 7.5  | 2.0 | 12.1 | 4.3  | 74.1 | 0.5  | 3.8               | 76.8             | 71.6 |
| Philippines        | 1651 | 2.6         | 14.2 | 5.8  | 0.5 | 3.5  | 4.7  | 7.1 | 41.3 | 20.4 | 26.5 | 4.7  | 15.7              | 27.5             | 25.3 |
| Romania            | 860  | 27.5        | 20.2 | 1.7  | 3.7 | 1.2  | 5.9  | 1.5 | 10.5 | 27.9 | 54.2 | 4.2  | 23.7              | 56.1             | 52.2 |
| Russian Federation | 1068 | 26.3        | 16.9 | 2.0  | 2.6 | 0.3  | 6.9  | 0.9 | 19.2 | 24.8 | 48.1 | 4.5  | 20.3              | 45.9             | 50.5 |
| Singapore          | 1247 | 28.5        | 49.3 | 1.0  | 2.4 | 0.4  | 4.3  | 2.9 | 7.9  | 3.2  | 81.6 | 0.4  | 2.8               | 80.7             | 82.5 |
| Slovak Republic    | 873  | 33.0        | 32.0 | 4.0  | 1.8 | 5.8  | 2.9  | 0.8 | 10.4 | 9.3  | 76.7 | 1.5  | 7.9               | 73.5             | 79.6 |
| Slovenia           | 770  | 38.3        | 30.2 | 5.7  | 1.1 | 0.8  | 8.8  | 0.9 | 5.7  | 8.4  | 76.1 | 0.2  | 8.3               | 76.0             | 76.2 |
| South Africa       | 2027 | 4.8         | 7.6  | 0.1  | 0.1 | 0.5  | 1.2  | 2.5 | 41.8 | 41.5 | 13.1 | 8.0  | 33.6              | 12.8             | 13.5 |
| Thailand           | 1437 | 7.8         | 51.0 | 1.3  | 0.6 | 24.8 | 6.3  | 0.1 | 5.9  | 2.2  | 85.5 | 1.3  | 1.0               | 86.4             | 84.4 |
| Tunisia            | 1257 | 9.5         | 22.0 | 13.8 | 0.2 | 1.7  | 7.1  | 0.4 | 8.6  | 36.6 | 47.2 | 4.0  | 32.6              | 40.6             | 53.9 |
| Turkey             | 1966 | 8.2         | 24.8 | 33.3 | 2.8 | 3.1  | 1.8  | 0.7 | 10.2 | 15.1 | 72.1 | 2.3  | 12.8              | 71.5             | 72.6 |
| United States      | 2226 | 43.0        | 28.2 | 4.4  | 3.6 | 0.3  | 3.0  | 1.6 | 12.4 | 3.4  | 79.6 | 1.1  | 2.3               | 78.4             | 80.8 |
| International Avg. | .    | 25.6        | 31.2 | 4.8  | 1.8 | 2.8  | 4.7  | 1.5 | 13.4 | 14.1 | 66.2 | 2.8  | 11.3              | 65.4             | 67.0 |

V1 = % Scoring 1 or better V2 = % Scoring 2 or better V3 = % Scoring 3 or better  
 Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.  
 Because of missing gender information, some totals may appear inconsistent

Science: Environmental and Resource Issues  
 Label: Positive/negative effect of dam ( S022088B - W01B )  
 Item Type = EX Key = X

| COUNTRY            | N    | NOT REACHED |      |     |     |      |      |      |      |      |      | 1.GIRL |      | 2.BOY   |         |
|--------------------|------|-------------|------|-----|-----|------|------|------|------|------|------|--------|------|---------|---------|
|                    |      | 10          | 11   | 12  | 13  | 19   | 70   | 71   | 79   | 99   | V1   | ED     | OMIT | % Right | % Right |
| Australia          | 1011 | 21.4        | 26.6 | 1.2 | 0.6 | 1.5  | 9.7  | 18.3 | 14.1 | 6.6  | 51.3 | 2.0    | 4.7  | 42.2    | 59.8    |
| Belgium (Flemish)  | 1320 | 28.8        | 28.1 | 7.5 | 0.3 | 1.8  | 10.9 | 4.5  | 13.0 | 5.2  | 66.5 | 0.8    | 4.4  | 61.9    | 71.0    |
| Bulgaria           | 824  | 27.3        | 10.3 | 2.1 | 1.8 | 3.5  | 4.8  | 3.3  | 20.1 | 26.8 | 45.1 | 12.2   | 14.6 | 43.6    | 46.8    |
| Canada             | 2163 | 22.4        | 35.7 | 2.3 | 1.3 | 1.6  | 11.2 | 6.0  | 13.3 | 6.2  | 63.3 | 1.3    | 4.9  | 61.1    | 65.4    |
| Chile              | 1467 | 14.0        | 17.1 | 0.4 | 0.4 | 1.2  | 6.8  | 9.3  | 18.4 | 32.4 | 33.2 | 18.0   | 14.3 | 28.7    | 37.7    |
| Chinese Taipei     | 1436 | 8.4         | 21.0 | 0.6 | 4.6 | 19.5 | 31.2 | 0.6  | 8.4  | 5.8  | 54.1 | 2.3    | 3.5  | 49.0    | 59.0    |
| Cyprus             | 766  | 22.5        | 14.3 | 1.1 | 2.9 | 7.2  | 4.0  | 6.9  | 15.2 | 25.8 | 48.1 | 8.5    | 17.3 | 41.8    | 53.8    |
| Czech Republic     | 865  | 57.1        | 6.2  | 1.6 | 1.2 | 0.8  | 15.9 | 4.9  | 4.4  | 7.9  | 66.8 | 1.8    | 6.1  | 61.4    | 72.6    |
| England            | 732  | 17.2        | 30.2 | 4.6 | 0.1 | 0.5  | 16.6 | 8.4  | 11.7 | 10.7 | 52.7 | 3.7    | 7.0  | 45.1    | 59.8    |
| Finland            | 721  | 20.4        | 35.3 | 3.7 | 0.0 | 0.5  | 9.7  | 13.7 | 9.3  | 7.6  | 59.8 | 0.7    | 6.9  | 60.5    | 59.2    |
| Hong Kong, SAR     | 1286 | 19.6        | 32.8 | 3.7 | 0.9 | 0.4  | 5.9  | 7.3  | 19.3 | 10.0 | 57.5 | 2.2    | 7.8  | 56.2    | 58.8    |
| Hungary            | 797  | 25.5        | 25.3 | 2.9 | 1.9 | 3.5  | 5.4  | 3.2  | 10.5 | 21.8 | 59.1 | 3.9    | 17.9 | 57.8    | 60.7    |
| Indonesia          | 1464 | 40.2        | 13.4 | 0.6 | 0.4 | 2.7  | 2.3  | 6.9  | 25.5 | 7.9  | 57.4 | 2.3    | 5.6  | 55.3    | 59.5    |
| Iran, Islamic Rep. | 1332 | 35.3        | 13.4 | 0.4 | 0.5 | 0.1  | 0.2  | 15.4 | 17.8 | 17.1 | 49.6 | 5.0    | 12.1 | 46.5    | 51.8    |
| Israel             | 1038 | 15.4        | 30.3 | 1.3 | 0.4 | 3.0  | 3.7  | 5.0  | 13.5 | 27.4 | 50.3 | 11.9   | 15.4 | 48.0    | 53.1    |
| Italy              | 836  | 29.0        | 19.6 | 2.5 | 2.3 | 0.9  | 6.4  | 5.2  | 13.6 | 20.5 | 54.3 | 6.8    | 13.6 | 48.2    | 60.0    |
| Japan              | 1191 | 8.5         | 21.3 | 2.0 | 0.2 | 0.9  | 41.1 | 2.0  | 12.0 | 12.1 | 32.8 | 1.9    | 10.2 | 28.5    | 37.0    |
| Jordan             | 1273 | 22.8        | 7.9  | 2.0 | 0.4 | 1.2  | 2.3  | 5.3  | 43.6 | 14.5 | 34.3 | 5.0    | 9.5  | 40.8    | 28.6    |
| Korea, Rep. of     | 1529 | 17.2        | 10.4 | 0.7 | 4.8 | 0.2  | 33.3 | 20.5 | 5.5  | 7.4  | 33.4 | 1.2    | 6.2  | 34.1    | 32.7    |
| Latvia (LSS)       | 710  | 37.4        | 24.6 | 0.2 | 1.5 | 1.0  | 2.4  | 14.2 | 6.3  | 12.3 | 64.8 | 4.1    | 8.2  | 58.6    | 72.3    |
| Lithuania          | 587  | 34.8        | 10.5 | 1.0 | 3.2 | 0.5  | 5.8  | 5.9  | 20.4 | 17.9 | 50.0 | 6.6    | 11.3 | 46.1    | 53.8    |
| Macedonia, Rep. of | 998  | 26.4        | 3.6  | 2.6 | 2.2 | 5.1  | 1.8  | 3.7  | 13.7 | 40.9 | 39.9 | 20.8   | 20.1 | 37.9    | 42.0    |
| Malaysia           | 1385 | 23.5        | 9.3  | 0.7 | 2.4 | 2.6  | 15.2 | 13.6 | 21.3 | 11.5 | 38.5 | 3.9    | 7.6  | 36.4    | 40.9    |
| Moldova            | 917  | 31.1        | 6.9  | 3.3 | 4.2 | 1.5  | 2.2  | 0.7  | 13.7 | 36.4 | 47.0 | 15.4   | 21.0 | 49.2    | 44.5    |
| Morocco            | 1366 | 8.3         | 1.2  | 2.8 | 0.9 | 6.6  | 1.0  | 0.8  | 34.8 | 43.6 | 19.7 | 23.2   | 20.4 | 18.1    | 20.8    |
| Netherlands        | 741  | 14.3        | 44.3 | 7.2 | 0.3 | 0.4  | 5.4  | 4.6  | 18.7 | 4.8  | 66.5 | 1.6    | 3.2  | 61.0    | 71.7    |
| New Zealand        | 904  | 31.2        | 24.6 | 1.0 | 0.1 | 0.8  | 8.0  | 16.3 | 11.4 | 6.8  | 57.6 | 0.9    | 5.9  | 53.8    | 61.3    |
| Philippines        | 1651 | 5.2         | 2.5  | 0.2 | 0.2 | 3.0  | 12.1 | 12.1 | 39.2 | 25.3 | 11.2 | 8.4    | 16.9 | 10.8    | 11.6    |
| Romania            | 860  | 34.4        | 9.7  | 0.2 | 1.0 | 1.2  | 7.8  | 4.2  | 10.4 | 31.0 | 46.5 | 11.6   | 19.4 | 46.6    | 46.5    |
| Russian Federation | 1068 | 28.2        | 14.5 | 1.4 | 1.8 | 1.6  | 5.7  | 5.1  | 17.7 | 24.0 | 47.6 | 8.6    | 15.4 | 44.5    | 51.0    |
| Singapore          | 1247 | 21.3        | 22.3 | 6.4 | 0.3 | 2.3  | 14.8 | 12.5 | 13.8 | 6.3  | 52.6 | 1.2    | 5.1  | 49.6    | 55.7    |
| Slovak Republic    | 873  | 45.3        | 9.2  | 0.9 | 5.6 | 4.7  | 8.1  | 3.4  | 10.6 | 12.3 | 65.7 | 3.6    | 8.7  | 60.2    | 70.9    |
| Slovenia           | 770  | 29.9        | 19.7 | 2.7 | 2.0 | 0.7  | 19.1 | 6.0  | 9.9  | 10.1 | 55.0 | 1.0    | 9.1  | 51.8    | 58.3    |
| South Africa       | 2027 | 7.9         | 2.4  | 0.1 | 0.0 | 0.4  | 1.7  | 0.7  | 44.8 | 42.1 | 10.7 | 14.6   | 27.5 | 9.7     | 11.9    |
| Thailand           | 1437 | 23.5        | 10.2 | 6.8 | 0.0 | 10.5 | 14.2 | 7.7  | 23.8 | 3.4  | 51.0 | 2.2    | 1.2  | 51.3    | 50.6    |
| Tunisia            | 1256 | 13.7        | 11.9 | 9.6 | 0.7 | 2.9  | 2.8  | 1.5  | 14.6 | 42.4 | 38.7 | 10.7   | 31.7 | 33.1    | 44.3    |
| Turkey             | 1966 | 42.6        | 1.7  | 7.4 | 0.9 | 3.8  | 3.4  | 1.0  | 16.0 | 23.3 | 56.3 | 5.8    | 17.5 | 51.6    | 59.9    |
| United States      | 2226 | 17.1        | 35.8 | 2.3 | 0.4 | 0.5  | 13.9 | 7.3  | 19.3 | 3.5  | 56.1 | 1.8    | 1.7  | 52.4    | 59.7    |
| International Avg. | .    | 24.5        | 17.5 | 2.6 | 1.4 | 2.7  | 9.6  | 7.0  | 17.1 | 17.7 | 48.6 | 6.3    | 11.4 | 45.6    | 51.5    |

V1 = % Scoring 1 or better V2 = % Scoring 2 or better V3 = % Scoring 3 or better  
 Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.  
 Because of missing gender information, some totals may appear inconsistent

Science: Environmental and Resource Issues  
 Label: Two reasons for water shortage ( S022249A - W02A )  
 Item Type = EX Key = X

| COUNTRY            | N    | 10   | 11   | 12   | 13   | 14   | 15  | 19   | 70  | 71   | 77  | 79   | 99   | V1   | NOT   | 1.GIRL | 2.BOY |         |
|--------------------|------|------|------|------|------|------|-----|------|-----|------|-----|------|------|------|-------|--------|-------|---------|
|                    |      |      |      |      |      |      |     |      |     |      |     |      |      |      | REACH |        |       | % Right |
| Australia          | 1011 | 42.6 | 21.0 | 11.9 | 5.9  | 3.8  | 0.5 | 0.6  | 0.4 | 1.9  | 0.0 | 6.7  | 4.6  | 86.4 | 2.4   | 2.2    | 87.7  | 85.1    |
| Belgium (Flemish)  | 1320 | 20.2 | 20.1 | 36.2 | 1.8  | 8.2  | 0.1 | 1.2  | 0.1 | 2.3  | 0.0 | 3.7  | 6.0  | 87.9 | 0.8   | 5.2    | 88.8  | 87.0    |
| Bulgaria           | 824  | 21.1 | 23.5 | 10.7 | 1.3  | 1.2  | 0.2 | 5.9  | 0.0 | 1.7  | 0.0 | 8.2  | 26.1 | 64.0 | 14.1  | 12.1   | 64.0  | 63.8    |
| Canada             | 2163 | 29.4 | 21.6 | 25.0 | 3.5  | 6.6  | 0.7 | 2.1  | 0.2 | 2.4  | 0.0 | 5.4  | 3.1  | 88.9 | 1.6   | 1.6    | 89.2  | 88.8    |
| Chile              | 1467 | 12.8 | 25.1 | 1.7  | 2.6  | 4.4  | 0.1 | 1.6  | 0.1 | 6.0  | 0.0 | 13.1 | 32.5 | 48.3 | 21.0  | 11.5   | 48.2  | 48.3    |
| Chinese Taipei     | 1436 | 37.1 | 21.4 | 10.9 | 16.4 | 2.3  | 0.1 | 0.8  | 0.1 | 0.1  | 0.0 | 6.3  | 4.5  | 89.1 | 2.5   | 2.0    | 90.4  | 87.8    |
| Cyprus             | 767  | 14.2 | 24.1 | 8.6  | 8.4  | 3.7  | 0.2 | 3.4  | 0.7 | 4.5  | 0.0 | 10.9 | 21.2 | 62.7 | 10.9  | 10.3   | 64.3  | 61.4    |
| Czech Republic     | 865  | 36.7 | 19.1 | 19.6 | 1.9  | 2.6  | 0.2 | 1.5  | 0.2 | 5.3  | 0.0 | 7.0  | 5.7  | 81.8 | 1.8   | 3.8    | 78.1  | 85.7    |
| England            | 732  | 21.6 | 27.5 | 19.1 | 2.9  | 7.6  | 0.6 | 0.2  | 0.2 | 6.8  | 0.0 | 5.1  | 8.5  | 79.4 | 4.8   | 3.7    | 80.3  | 78.6    |
| Finland            | 721  | 31.4 | 22.3 | 14.5 | 1.1  | 4.9  | 0.4 | 17.7 | 0.1 | 3.5  | 0.0 | 2.3  | 1.9  | 92.3 | 1.0   | 0.8    | 92.5  | 92.1    |
| Hong Kong, SAR     | 1285 | 36.4 | 22.1 | 10.2 | 6.4  | 2.9  | 0.2 | 0.4  | 0.2 | 4.6  | 0.0 | 11.7 | 5.0  | 78.5 | 2.7   | 2.3    | 79.4  | 77.6    |
| Hungary            | 797  | 35.4 | 17.3 | 16.0 | 1.4  | 7.5  | 0.1 | 0.6  | 0.4 | 3.2  | 0.0 | 5.7  | 12.3 | 78.4 | 4.7   | 7.6    | 79.0  | 78.3    |
| Indonesia          | 1463 | 7.2  | 23.4 | 8.3  | 4.0  | 13.8 | 0.1 | 8.7  | 0.3 | 1.5  | 0.0 | 24.3 | 8.3  | 65.6 | 3.3   | 4.9    | 65.6  | 65.5    |
| Iran, Islamic Rep. | 1332 | 30.5 | 15.7 | 5.7  | 13.8 | 5.0  | 0.3 | 1.8  | 0.1 | 0.1  | 0.0 | 11.4 | 15.7 | 72.7 | 7.6   | 8.2    | 71.1  | 73.8    |
| Israel             | 1038 | 30.0 | 23.7 | 5.2  | 3.3  | 3.4  | 0.2 | 2.3  | 0.1 | 1.1  | 0.0 | 9.5  | 21.2 | 68.2 | 12.6  | 8.6    | 66.6  | 70.1    |
| Italy              | 836  | 34.1 | 7.1  | 14.5 | 6.3  | 1.8  | 1.0 | 2.2  | 0.3 | 3.2  | 0.0 | 12.8 | 16.6 | 67.1 | 8.4   | 8.2    | 65.0  | 69.1    |
| Japan              | 1191 | 26.2 | 19.0 | 10.1 | 1.0  | 4.5  | 0.3 | 0.7  | 0.3 | 20.3 | 0.0 | 11.1 | 6.5  | 61.8 | 2.3   | 4.2    | 60.5  | 63.0    |
| Jordan             | 1274 | 14.7 | 12.5 | 13.6 | 15.8 | 4.9  | 0.1 | 1.6  | 0.2 | 0.6  | 0.0 | 22.8 | 13.2 | 63.3 | 6.9   | 6.3    | 71.1  | 56.3    |
| Korea, Rep. of     | 1530 | 38.0 | 7.3  | 25.6 | 5.6  | 3.3  | 1.1 | 4.1  | 0.4 | 4.7  | 0.0 | 3.1  | 6.9  | 85.0 | 1.5   | 5.5    | 83.1  | 86.8    |
| Latvia (LSS)       | 710  | 32.7 | 7.8  | 28.0 | 5.0  | 1.2  | 0.3 | 2.4  | 0.3 | 0.8  | 0.0 | 8.5  | 13.1 | 77.4 | 4.6   | 8.5    | 76.8  | 78.1    |
| Lithuania          | 587  | 16.9 | 17.6 | 12.0 | 1.0  | 2.4  | 0.0 | 5.9  | 0.5 | 2.1  | 0.0 | 17.0 | 24.6 | 55.8 | 9.1   | 15.5   | 53.8  | 57.9    |
| Macedonia, Rep. of | 997  | 7.8  | 10.7 | 8.4  | 1.2  | 2.9  | 0.3 | 7.5  | 1.1 | 3.2  | 0.0 | 18.6 | 38.3 | 38.8 | 25.2  | 13.1   | 41.1  | 36.5    |
| Malaysia           | 1387 | 17.4 | 22.9 | 18.0 | 9.3  | 6.4  | 0.4 | 3.0  | 0.3 | 4.7  | 0.0 | 8.6  | 9.1  | 77.3 | 4.7   | 4.3    | 77.9  | 76.5    |
| Moldova            | 917  | 21.0 | 17.9 | 12.2 | 1.4  | 2.4  | 0.9 | 0.6  | 0.0 | 0.9  | 0.0 | 13.9 | 28.8 | 56.4 | 18.0  | 10.7   | 55.9  | 57.0    |
| Morocco            | 1366 | 9.6  | 3.9  | 4.0  | 7.1  | 2.7  | 0.3 | 4.6  | 0.5 | 0.3  | 0.0 | 27.5 | 39.6 | 32.2 | 26.3  | 13.4   | 30.9  | 33.0    |
| Netherlands        | 741  | 18.8 | 26.5 | 23.9 | 2.6  | 12.0 | 0.0 | 2.2  | 0.0 | 3.1  | 0.0 | 8.3  | 2.4  | 86.1 | 1.6   | 0.8    | 90.1  | 82.3    |
| New Zealand        | 903  | 32.5 | 24.4 | 17.8 | 4.1  | 2.4  | 0.1 | 0.2  | 0.2 | 5.8  | 1.9 | 6.9  | 3.7  | 81.5 | 1.0   | 2.8    | 85.8  | 77.4    |
| Philippines        | 1650 | 3.9  | 8.0  | 17.4 | 7.0  | 1.7  | 0.0 | 2.3  | 0.2 | 2.1  | 0.0 | 35.7 | 21.7 | 40.3 | 12.1  | 9.6    | 43.3  | 37.0    |
| Romania            | 860  | 16.4 | 26.4 | 14.7 | 0.9  | 3.2  | 0.2 | 1.7  | 0.6 | 5.9  | 0.0 | 8.8  | 21.2 | 63.5 | 13.2  | 8.0    | 63.7  | 63.2    |
| Russian Federation | 1067 | 30.8 | 19.3 | 15.9 | 1.0  | 1.7  | 1.3 | 0.5  | 0.0 | 1.3  | 0.0 | 6.3  | 21.8 | 70.6 | 10.1  | 11.7   | 71.5  | 69.6    |
| Singapore          | 1247 | 38.5 | 11.2 | 7.3  | 11.8 | 3.3  | 4.4 | 13.6 | 0.4 | 2.1  | 0.0 | 5.1  | 2.3  | 90.1 | 1.3   | 1.0    | 90.7  | 89.6    |
| Slovak Republic    | 873  | 27.6 | 20.6 | 23.0 | 2.0  | 0.6  | 0.2 | 3.3  | 0.6 | 2.5  | 0.0 | 8.2  | 11.4 | 77.3 | 4.0   | 7.3    | 76.2  | 78.3    |
| Slovenia           | 770  | 27.3 | 18.8 | 34.9 | 1.1  | 3.0  | 0.2 | 0.8  | 0.1 | 3.5  | 0.0 | 3.8  | 6.5  | 86.1 | 1.5   | 4.9    | 85.5  | 86.8    |
| South Africa       | 2027 | 2.5  | 8.6  | 4.6  | 5.2  | 3.4  | 0.1 | 0.9  | 0.6 | 3.5  | 0.0 | 45.7 | 25.1 | 25.2 | 16.1  | 9.0    | 26.3  | 23.9    |
| Thailand           | 1437 | 21.4 | 14.4 | 5.4  | 14.1 | 6.6  | 0.2 | 20.7 | 0.4 | 2.2  | 0.0 | 10.2 | 4.3  | 82.9 | 2.5   | 1.8    | 86.0  | 79.0    |
| Tunisia            | 1252 | 13.5 | 7.8  | 27.0 | 4.4  | 5.8  | 0.2 | 1.3  | 0.4 | 5.1  | 0.0 | 12.5 | 21.7 | 60.2 | 11.7  | 10.0   | 59.9  | 60.6    |
| Turkey             | 1966 | 14.5 | 11.1 | 25.6 | 6.5  | 6.6  | 0.0 | 1.7  | 0.2 | 0.9  | 0.0 | 16.5 | 16.4 | 66.1 | 8.5   | 7.9    | 66.0  | 66.2    |
| United States      | 2226 | 34.6 | 14.0 | 15.6 | 6.6  | 2.6  | 0.9 | 5.0  | 0.0 | 5.9  | 0.0 | 10.0 | 4.7  | 79.3 | 1.8   | 2.9    | 79.9  | 78.7    |
| International Avg. | .    | 23.9 | 17.5 | 15.3 | 5.2  | 4.3  | 0.4 | 3.6  | 0.3 | 3.4  | 0.0 | 11.9 | 14.1 | 70.2 | 7.5   | 6.6    | 70.7  | 69.8    |

V1 = % Scoring 1 or better V2 = % Scoring 2 or better V3 = % Scoring 3 or better  
 Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.  
 Because of missing gender information, some totals may appear inconsistent

Science: Environmental and Resource Issues  
 Label: Two reasons for water shortage ( S022249B - W02B )  
 Item Type = EX Key = X

| COUNTRY            | N    | 10   | 11   | 12   | 13   | 14   | 15  | 19   | 70  | 71   | 77  | 79   | 99   | V1   | NOT REACH |      | 1.GIRL  | 2.BOY   |
|--------------------|------|------|------|------|------|------|-----|------|-----|------|-----|------|------|------|-----------|------|---------|---------|
|                    |      |      |      |      |      |      |     |      |     |      |     |      |      |      | ED        | OMIT | % Right | % Right |
| Australia          | 1011 | 8.8  | 27.0 | 18.0 | 7.4  | 9.8  | 1.2 | 1.2  | 0.0 | 2.5  | 0.0 | 16.2 | 8.1  | 73.3 | 2.4       | 5.7  | 75.1    | 71.6    |
| Belgium (Flemish)  | 1320 | 7.9  | 22.6 | 18.3 | 3.8  | 17.5 | 1.3 | 0.4  | 0.2 | 1.5  | 0.0 | 14.0 | 12.6 | 71.8 | 0.8       | 11.8 | 72.3    | 71.2    |
| Bulgaria           | 824  | 9.0  | 13.6 | 10.2 | 2.0  | 3.2  | 0.8 | 5.6  | 0.2 | 1.1  | 0.0 | 14.2 | 40.1 | 44.4 | 14.1      | 26.0 | 42.5    | 46.2    |
| Canada             | 2163 | 10.5 | 22.1 | 25.2 | 5.3  | 12.9 | 1.8 | 1.4  | 0.0 | 2.9  | 0.0 | 12.2 | 5.6  | 79.3 | 1.6       | 4.0  | 80.9    | 78.1    |
| Chile              | 1467 | 3.6  | 17.3 | 3.0  | 5.5  | 5.7  | 0.5 | 1.3  | 0.0 | 5.6  | 0.0 | 16.6 | 40.8 | 36.9 | 21.0      | 19.8 | 36.2    | 37.7    |
| Chinese Taipei     | 1436 | 7.8  | 25.3 | 18.9 | 15.1 | 4.0  | 0.3 | 0.9  | 0.0 | 0.1  | 0.0 | 20.5 | 7.0  | 72.4 | 2.5       | 4.5  | 72.4    | 72.5    |
| Cyprus             | 767  | 5.4  | 13.7 | 7.7  | 7.5  | 4.7  | 0.5 | 2.0  | 0.5 | 3.9  | 0.0 | 19.1 | 35.0 | 41.4 | 10.9      | 24.1 | 41.3    | 41.7    |
| Czech Republic     | 865  | 8.5  | 20.2 | 22.9 | 4.2  | 5.9  | 0.7 | 2.0  | 0.2 | 5.2  | 0.0 | 14.6 | 15.6 | 64.5 | 1.8       | 13.7 | 62.9    | 66.1    |
| England            | 732  | 6.1  | 26.2 | 15.7 | 3.9  | 16.4 | 0.3 | 0.3  | 0.3 | 5.6  | 0.0 | 9.9  | 15.3 | 68.9 | 4.8       | 10.5 | 67.4    | 70.3    |
| Finland            | 721  | 8.3  | 23.5 | 17.2 | 3.4  | 13.9 | 0.8 | 13.4 | 0.1 | 4.2  | 0.0 | 7.7  | 7.7  | 80.4 | 1.0       | 6.6  | 82.8    | 78.1    |
| Hong Kong, SAR     | 1285 | 7.1  | 22.3 | 15.7 | 11.1 | 7.1  | 0.4 | 0.8  | 0.6 | 4.4  | 0.0 | 20.1 | 10.2 | 64.7 | 2.7       | 7.6  | 64.9    | 64.4    |
| Hungary            | 797  | 8.3  | 17.6 | 17.1 | 3.2  | 12.5 | 0.3 | 0.6  | 0.3 | 2.3  | 0.0 | 11.5 | 26.6 | 59.5 | 4.7       | 21.8 | 59.6    | 59.6    |
| Indonesia          | 1463 | 4.3  | 18.2 | 9.3  | 5.0  | 14.2 | 0.2 | 7.7  | 0.3 | 1.6  | 0.0 | 24.0 | 15.2 | 58.9 | 3.3       | 11.8 | 59.8    | 57.9    |
| Iran, Islamic Rep. | 1332 | 7.4  | 13.7 | 7.0  | 10.0 | 11.7 | 0.2 | 1.2  | 0.1 | 0.5  | 0.0 | 23.2 | 25.1 | 51.1 | 7.6       | 17.5 | 46.9    | 53.9    |
| Israel             | 1038 | 7.8  | 21.8 | 7.2  | 7.1  | 7.2  | 0.9 | 1.7  | 0.2 | 2.5  | 0.0 | 11.6 | 31.8 | 53.8 | 12.6      | 19.2 | 51.7    | 56.4    |
| Italy              | 836  | 8.6  | 11.2 | 19.9 | 7.4  | 3.3  | 1.5 | 1.4  | 0.1 | 3.4  | 0.0 | 14.9 | 28.3 | 53.3 | 8.4       | 19.8 | 51.2    | 55.4    |
| Japan              | 1191 | 6.4  | 18.8 | 12.2 | 1.6  | 9.2  | 0.2 | 1.0  | 0.1 | 24.5 | 0.0 | 14.2 | 11.8 | 49.4 | 2.3       | 9.5  | 50.0    | 48.8    |
| Jordan             | 1274 | 4.2  | 10.7 | 8.8  | 11.6 | 9.7  | 0.0 | 2.2  | 0.1 | 0.5  | 0.0 | 32.9 | 19.2 | 47.3 | 6.9       | 12.3 | 53.0    | 42.3    |
| Korea, Rep. of     | 1530 | 9.6  | 12.9 | 28.1 | 9.4  | 6.5  | 0.9 | 1.4  | 0.2 | 8.4  | 0.0 | 9.8  | 12.7 | 68.9 | 1.5       | 11.2 | 68.3    | 69.4    |
| Latvia (LSS)       | 710  | 9.4  | 12.4 | 18.1 | 8.7  | 4.5  | 1.2 | 3.5  | 0.2 | 1.4  | 0.0 | 10.5 | 30.1 | 57.7 | 4.6       | 25.5 | 59.1    | 56.1    |
| Lithuania          | 587  | 4.9  | 12.1 | 6.6  | 0.7  | 2.9  | 0.1 | 2.3  | 0.2 | 1.1  | 0.0 | 24.2 | 44.8 | 29.7 | 9.1       | 35.7 | 26.9    | 32.4    |
| Macedonia, Rep. of | 997  | 4.5  | 6.8  | 6.0  | 0.9  | 3.1  | 0.8 | 6.2  | 1.4 | 2.8  | 0.0 | 16.6 | 51.1 | 28.1 | 25.2      | 25.9 | 27.0    | 29.2    |
| Malaysia           | 1387 | 5.2  | 19.7 | 16.7 | 9.1  | 7.8  | 0.2 | 3.9  | 0.6 | 4.5  | 0.0 | 15.5 | 16.9 | 62.5 | 4.7       | 12.1 | 63.0    | 62.0    |
| Moldova            | 916  | 8.7  | 14.7 | 11.3 | 2.6  | 4.0  | 2.0 | 1.2  | 0.1 | 0.8  | 0.0 | 11.0 | 43.6 | 44.4 | 18.1      | 25.6 | 46.4    | 42.1    |
| Morocco            | 1366 | 3.8  | 3.1  | 2.7  | 5.2  | 2.0  | 0.1 | 3.0  | 0.8 | 1.6  | 0.0 | 24.4 | 53.3 | 19.9 | 26.3      | 27.1 | 20.3    | 19.6    |
| Netherlands        | 741  | 7.2  | 23.8 | 18.4 | 3.3  | 16.2 | 0.4 | 2.1  | 0.2 | 4.6  | 0.0 | 19.1 | 4.6  | 71.6 | 1.6       | 2.9  | 71.6    | 71.6    |
| New Zealand        | 903  | 7.2  | 23.8 | 21.1 | 6.9  | 9.1  | 1.4 | 0.2  | 0.3 | 6.6  | 0.9 | 14.2 | 8.1  | 69.9 | 1.0       | 7.1  | 72.4    | 67.5    |
| Philippines        | 1651 | 1.7  | 6.5  | 9.0  | 7.4  | 2.2  | 0.2 | 1.3  | 0.2 | 2.8  | 0.0 | 37.5 | 31.2 | 28.4 | 12.1      | 19.0 | 29.9    | 26.7    |
| Romania            | 860  | 6.6  | 21.5 | 13.3 | 2.0  | 4.7  | 1.1 | 1.0  | 0.4 | 3.7  | 0.0 | 12.3 | 33.3 | 50.3 | 13.2      | 20.1 | 50.2    | 50.5    |
| Russian Federation | 1068 | 9.7  | 14.0 | 17.0 | 2.3  | 2.5  | 2.3 | 0.3  | 0.0 | 1.5  | 0.0 | 17.2 | 33.1 | 48.1 | 10.1      | 23.0 | 47.1    | 49.3    |
| Singapore          | 1247 | 6.3  | 19.6 | 9.6  | 24.0 | 10.5 | 9.6 | 2.2  | 0.1 | 3.3  | 0.0 | 10.8 | 3.9  | 81.9 | 1.3       | 2.6  | 82.6    | 81.1    |
| Slovak Republic    | 873  | 7.7  | 18.8 | 19.9 | 3.6  | 1.7  | 0.3 | 3.8  | 0.9 | 3.9  | 0.0 | 15.4 | 24.0 | 55.8 | 4.0       | 20.0 | 54.1    | 57.4    |
| Slovenia           | 770  | 12.3 | 23.0 | 26.1 | 2.2  | 7.1  | 0.7 | 0.5  | 0.1 | 3.1  | 0.0 | 8.8  | 16.0 | 71.9 | 1.5       | 14.5 | 74.5    | 69.2    |
| South Africa       | 2027 | 1.3  | 6.3  | 3.3  | 4.1  | 4.2  | 0.1 | 0.5  | 0.1 | 3.1  | 0.0 | 46.1 | 30.8 | 19.9 | 16.1      | 14.7 | 21.4    | 18.0    |
| Thailand           | 1437 | 7.5  | 13.5 | 9.5  | 16.1 | 5.9  | 0.2 | 25.8 | 0.2 | 3.0  | 0.0 | 12.7 | 5.7  | 78.4 | 2.5       | 3.2  | 80.1    | 76.2    |
| Tunisia            | 1253 | 6.8  | 7.4  | 16.4 | 6.3  | 10.1 | 0.1 | 1.8  | 0.4 | 5.5  | 0.0 | 13.5 | 31.7 | 48.9 | 11.7      | 20.0 | 47.6    | 50.1    |
| Turkey             | 1966 | 6.0  | 9.5  | 15.1 | 8.5  | 9.0  | 0.0 | 2.4  | 0.5 | 1.1  | 0.0 | 21.9 | 25.9 | 50.5 | 8.5       | 17.4 | 47.5    | 52.8    |
| United States      | 2226 | 10.0 | 17.1 | 18.1 | 8.7  | 6.4  | 3.4 | 5.5  | 0.0 | 7.1  | 0.0 | 16.5 | 7.3  | 69.1 | 1.8       | 5.5  | 71.3    | 66.9    |
| International Avg. | .    | 7.0  | 16.6 | 14.2 | 6.5  | 7.6  | 1.0 | 3.0  | 0.3 | 3.7  | 0.0 | 17.3 | 22.7 | 56.0 | 7.5       | 15.3 | 56.1    | 55.8    |

V1 = % Scoring 1 or better V2 = % Scoring 2 or better V3 = % Scoring 3 or better  
 Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.  
 Because of missing gender information, some totals may appear inconsistent

Science: Environmental and Resource Issues  
 Label: Two reasons for water shortage ( S022249D - W02D )  
 Item Type = EX Key = X

| COUNTRY            | N    | 10   | 70   | 71   | 99   | V1   | NOT REACHED |      | 1.GIRL<br>% Right | 2.BOY<br>% Right |
|--------------------|------|------|------|------|------|------|-------------|------|-------------------|------------------|
|                    |      |      |      |      |      |      | ED          | OMIT |                   |                  |
| Australia          | 1011 | 67.8 | 4.1  | 24.0 | 4.1  | 67.8 | 2.4         | 1.7  | 68.7              | 67.0             |
| Belgium (Flemish)  | 1320 | 67.9 | 2.2  | 23.8 | 6.0  | 67.9 | 0.8         | 5.2  | 69.0              | 66.8             |
| Bulgaria           | 824  | 39.7 | 5.3  | 29.0 | 25.9 | 39.7 | 14.1        | 11.9 | 37.5              | 41.7             |
| Canada             | 2163 | 74.5 | 3.2  | 19.2 | 3.1  | 74.5 | 1.6         | 1.6  | 75.6              | 73.7             |
| Chile              | 1467 | 27.1 | 9.4  | 31.0 | 32.5 | 27.1 | 21.0        | 11.4 | 26.3              | 27.9             |
| Chinese Taipei     | 1436 | 68.6 | 2.8  | 24.2 | 4.3  | 68.6 | 2.5         | 1.8  | 69.0              | 68.3             |
| Cyprus             | 768  | 34.9 | 9.5  | 34.2 | 21.3 | 34.9 | 10.9        | 10.4 | 34.9              | 35.0             |
| Czech Republic     | 865  | 57.2 | 5.2  | 32.0 | 5.7  | 57.2 | 1.8         | 3.8  | 54.3              | 60.2             |
| England            | 732  | 61.5 | 4.7  | 25.2 | 8.5  | 61.5 | 4.8         | 3.7  | 59.6              | 63.4             |
| Finland            | 721  | 77.5 | 2.9  | 17.8 | 1.9  | 77.5 | 1.0         | 0.8  | 80.3              | 74.7             |
| Hong Kong, SAR     | 1285 | 55.2 | 7.0  | 32.8 | 5.0  | 55.2 | 2.7         | 2.3  | 54.5              | 55.8             |
| Hungary            | 797  | 55.6 | 5.6  | 26.7 | 12.1 | 55.6 | 4.7         | 7.4  | 55.0              | 56.4             |
| Indonesia          | 1463 | 47.3 | 14.5 | 30.0 | 8.3  | 47.3 | 3.3         | 4.9  | 48.8              | 45.5             |
| Iran, Islamic Rep. | 1332 | 46.2 | 6.8  | 31.3 | 15.7 | 46.2 | 7.6         | 8.1  | 41.8              | 49.2             |
| Israel             | 1038 | 49.5 | 6.5  | 23.0 | 21.0 | 49.5 | 12.6        | 8.4  | 47.4              | 51.9             |
| Italy              | 836  | 47.2 | 10.3 | 26.0 | 16.5 | 47.2 | 8.4         | 8.1  | 44.7              | 49.6             |
| Japan              | 1191 | 33.2 | 15.5 | 44.8 | 6.5  | 33.2 | 2.3         | 4.2  | 33.3              | 33.1             |
| Jordan             | 1274 | 38.4 | 15.0 | 33.8 | 12.8 | 38.4 | 6.9         | 5.9  | 43.6              | 33.9             |
| Korea, Rep. of     | 1530 | 64.5 | 3.9  | 24.8 | 6.9  | 64.5 | 1.5         | 5.4  | 63.6              | 65.5             |
| Latvia (LSS)       | 710  | 52.5 | 4.4  | 30.1 | 13.0 | 52.5 | 4.6         | 8.4  | 53.4              | 51.4             |
| Lithuania          | 587  | 23.4 | 13.3 | 38.7 | 24.6 | 23.4 | 9.1         | 15.5 | 21.3              | 25.5             |
| Macedonia, Rep. of | 997  | 24.8 | 20.3 | 17.3 | 37.7 | 24.8 | 25.2        | 12.4 | 24.5              | 25.2             |
| Malaysia           | 1387 | 55.3 | 6.5  | 29.2 | 9.0  | 55.3 | 4.7         | 4.3  | 57.5              | 52.7             |
| Moldova            | 917  | 40.0 | 10.6 | 20.8 | 28.6 | 40.0 | 18.0        | 10.5 | 41.2              | 38.6             |
| Morocco            | 1366 | 14.3 | 27.2 | 23.3 | 35.1 | 14.3 | 26.3        | 8.9  | 15.7              | 13.4             |
| Netherlands        | 741  | 63.8 | 3.7  | 30.2 | 2.4  | 63.8 | 1.6         | 0.8  | 67.7              | 60.0             |
| New Zealand        | 903  | 62.0 | 6.8  | 27.4 | 3.7  | 62.0 | 1.0         | 2.8  | 66.1              | 58.1             |
| Philippines        | 1651 | 20.1 | 30.0 | 28.5 | 21.4 | 20.1 | 12.1        | 9.3  | 21.4              | 18.5             |
| Romania            | 860  | 44.6 | 9.9  | 24.7 | 20.9 | 44.6 | 13.2        | 7.8  | 45.0              | 44.1             |
| Russian Federation | 1068 | 44.9 | 4.5  | 28.9 | 21.8 | 44.9 | 10.1        | 11.6 | 45.2              | 44.6             |
| Singapore          | 1247 | 77.1 | 2.9  | 17.7 | 2.3  | 77.1 | 1.3         | 1.0  | 78.3              | 75.9             |
| Slovak Republic    | 873  | 49.5 | 5.0  | 34.2 | 11.4 | 49.5 | 4.0         | 7.3  | 48.8              | 50.0             |
| Slovenia           | 770  | 68.2 | 3.6  | 21.7 | 6.5  | 68.2 | 1.5         | 4.9  | 69.5              | 66.8             |
| South Africa       | 2027 | 13.1 | 44.4 | 18.9 | 23.6 | 13.1 | 16.1        | 7.5  | 13.8              | 12.2             |
| Thailand           | 1437 | 72.5 | 6.9  | 16.3 | 4.3  | 72.5 | 2.5         | 1.8  | 74.6              | 69.8             |
| Tunisia            | 1253 | 41.3 | 10.8 | 26.6 | 21.4 | 41.3 | 11.7        | 9.7  | 39.7              | 42.8             |
| Turkey             | 1966 | 42.7 | 9.8  | 31.3 | 16.2 | 42.7 | 8.5         | 7.8  | 40.6              | 44.3             |
| United States      | 2226 | 60.2 | 7.2  | 27.9 | 4.7  | 60.2 | 1.8         | 2.9  | 61.9              | 58.6             |
| International Avg. | .    | 49.6 | 9.5  | 27.0 | 13.9 | 49.6 | 7.5         | 6.4  | 49.8              | 49.3             |

V1 = % Scoring 1 or better V2 = % Scoring 2 or better V3 = % Scoring 3 or better  
 Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.  
 Because of missing gender information, some totals may appear inconsistent

Science: Scientific Inquiry and the Nature of Science  
 Label: Data trend of masses on spring ( S022286 - W03 )  
 Item Type = SA Key = X

| COUNTRY            | N    | NOT REACHED |      |      |      |      |      |      |      | 1.GIRL |         | 2.BOY   |  |
|--------------------|------|-------------|------|------|------|------|------|------|------|--------|---------|---------|--|
|                    |      | 10          | 19   | 70   | 71   | 79   | 99   | V1   | ED   | OMIT   | % Right | % Right |  |
| Australia          | 1011 | 22.7        | 0.0  | 50.0 | 2.8  | 15.7 | 8.7  | 22.7 | 3.9  | 4.8    | 24.3    | 21.2    |  |
| Belgium (Flemish)  | 1318 | 27.4        | 1.3  | 43.4 | 3.3  | 14.5 | 10.2 | 28.7 | 6.1  | 4.1    | 31.1    | 26.2    |  |
| Bulgaria           | 824  | 10.7        | 5.8  | 36.9 | 1.5  | 9.8  | 35.2 | 16.6 | 23.7 | 11.5   | 14.3    | 19.0    |  |
| Canada             | 2163 | 24.4        | 1.0  | 42.4 | 3.6  | 18.6 | 10.0 | 25.4 | 3.5  | 6.5    | 28.1    | 22.9    |  |
| Chile              | 1467 | 4.8         | 0.3  | 18.7 | 0.6  | 20.4 | 55.2 | 5.1  | 35.7 | 19.5   | 3.7     | 6.4     |  |
| Chinese Taipei     | 1436 | 19.5        | 18.3 | 37.6 | 1.1  | 17.7 | 5.8  | 37.7 | 4.0  | 1.8    | 41.4    | 34.2    |  |
| Cyprus             | 761  | 14.2        | 1.9  | 21.8 | 0.3  | 19.1 | 42.7 | 16.1 | 25.4 | 17.2   | 16.2    | 16.0    |  |
| Czech Republic     | 865  | 19.8        | 0.6  | 46.1 | 4.0  | 14.5 | 15.1 | 20.4 | 6.7  | 8.4    | 20.0    | 20.7    |  |
| England            | 732  | 25.1        | 0.6  | 51.7 | 2.2  | 10.7 | 9.8  | 25.7 | 8.0  | 1.8    | 21.8    | 29.4    |  |
| Finland            | 721  | 31.6        | 0.1  | 39.9 | 4.6  | 15.2 | 8.6  | 31.7 | 3.7  | 4.8    | 38.3    | 25.2    |  |
| Hong Kong, SAR     | 1286 | 16.2        | 0.5  | 41.6 | 2.0  | 28.5 | 11.1 | 16.8 | 5.5  | 5.7    | 15.8    | 17.5    |  |
| Hungary            | 797  | 30.5        | 0.9  | 36.1 | 3.4  | 13.5 | 15.6 | 31.4 | 9.9  | 5.7    | 30.9    | 31.9    |  |
| Indonesia          | 1462 | 1.2         | 0.5  | 17.4 | 2.6  | 50.8 | 27.5 | 1.7  | 11.1 | 16.4   | 1.4     | 2.1     |  |
| Iran, Islamic Rep. | 1329 | 2.9         | 0.1  | 26.0 | 0.3  | 33.4 | 37.3 | 3.0  | 18.7 | 18.6   | 2.3     | 3.4     |  |
| Israel             | 1038 | 13.4        | 2.0  | 30.7 | 2.3  | 20.9 | 30.7 | 15.4 | 19.9 | 10.8   | 12.9    | 18.2    |  |
| Italy              | 836  | 12.0        | 1.7  | 34.2 | 2.9  | 20.9 | 28.2 | 13.7 | 16.9 | 11.3   | 13.2    | 14.2    |  |
| Japan              | 1191 | 35.1        | 6.6  | 49.3 | 0.9  | 3.2  | 4.8  | 41.7 | 3.5  | 1.3    | 42.0    | 41.4    |  |
| Jordan             | 1273 | 2.9         | 1.1  | 32.9 | 0.3  | 43.2 | 19.7 | 3.9  | 13.0 | 6.7    | 3.2     | 4.5     |  |
| Korea, Rep. of     | 1507 | 54.5        | 0.4  | 35.2 | 1.8  | 3.2  | 5.0  | 54.8 | 3.3  | 1.6    | 55.2    | 54.5    |  |
| Latvia (LSS)       | 710  | 22.3        | 3.7  | 37.7 | 2.1  | 7.9  | 26.4 | 26.0 | 16.2 | 10.2   | 24.3    | 28.0    |  |
| Lithuania          | 587  | 21.8        | 0.6  | 23.8 | 9.4  | 20.2 | 24.3 | 22.3 | 19.3 | 5.0    | 23.4    | 21.2    |  |
| Macedonia, Rep. of | 996  | 6.5         | 4.3  | 11.0 | 6.7  | 12.7 | 58.9 | 10.8 | 41.0 | 17.9   | 9.7     | 11.9    |  |
| Malaysia           | 1383 | 10.4        | 0.4  | 42.9 | 2.3  | 20.7 | 23.3 | 10.9 | 10.7 | 12.6   | 9.3     | 12.8    |  |
| Moldova            | 914  | 13.7        | 3.5  | 18.0 | 1.4  | 22.5 | 40.9 | 17.2 | 30.8 | 10.1   | 18.0    | 16.4    |  |
| Morocco            | 1366 | 2.2         | 1.8  | 7.1  | 3.9  | 29.6 | 55.4 | 4.0  | 41.8 | 13.6   | 4.2     | 3.8     |  |
| Netherlands        | 741  | 27.1        | 3.3  | 48.6 | 2.3  | 14.7 | 4.0  | 30.4 | 1.7  | 2.2    | 33.1    | 27.6    |  |
| New Zealand        | 903  | 20.6        | 0.1  | 46.1 | 0.7  | 18.3 | 14.1 | 20.8 | 4.7  | 9.4    | 23.6    | 18.1    |  |
| Philippines        | 1650 | 1.1         | 0.6  | 9.2  | 3.0  | 44.7 | 41.4 | 1.7  | 25.1 | 16.3   | 1.7     | 1.7     |  |
| Romania            | 853  | 12.5        | 0.5  | 21.1 | 4.1  | 19.2 | 42.6 | 13.0 | 25.2 | 17.4   | 12.0    | 14.0    |  |
| Russian Federation | 1068 | 12.4        | 4.8  | 39.4 | 0.6  | 14.7 | 28.1 | 17.2 | 20.0 | 8.0    | 14.1    | 20.6    |  |
| Singapore          | 1247 | 34.8        | 0.5  | 48.1 | 1.1  | 10.0 | 5.5  | 35.3 | 2.1  | 3.4    | 34.3    | 36.3    |  |
| Slovak Republic    | 873  | 23.3        | 2.3  | 37.6 | 3.1  | 14.5 | 19.2 | 25.6 | 11.2 | 8.1    | 24.4    | 26.7    |  |
| Slovenia           | 770  | 32.7        | 0.5  | 33.6 | 3.1  | 16.2 | 13.9 | 33.2 | 7.4  | 6.4    | 34.7    | 31.7    |  |
| South Africa       | 2026 | 1.5         | 0.4  | 5.3  | 1.1  | 48.6 | 43.0 | 1.9  | 24.0 | 19.0   | 1.9     | 1.9     |  |
| Thailand           | 1437 | 2.1         | 2.9  | 20.8 | 19.6 | 42.8 | 11.7 | 5.0  | 4.5  | 7.2    | 5.9     | 3.9     |  |
| Tunisia            | 1247 | 2.6         | 7.2  | 18.0 | 7.3  | 38.4 | 26.6 | 9.8  | 18.1 | 8.5    | 10.8    | 8.8     |  |
| Turkey             | 1966 | 6.1         | 1.5  | 26.7 | 4.0  | 20.3 | 41.4 | 7.6  | 18.8 | 22.6   | 5.8     | 9.0     |  |
| United States      | 2226 | 20.3        | 0.0  | 55.6 | 1.1  | 13.7 | 9.2  | 20.4 | 4.6  | 4.6    | 19.9    | 20.9    |  |
| International Avg. | .    | 16.9        | 2.2  | 32.7 | 3.1  | 21.1 | 24.0 | 19.1 | 14.5 | 9.5    | 19.1    | 19.1    |  |

V1 = % Scoring 1 or better V2 = % Scoring 2 or better V3 = % Scoring 3 or better  
 Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.  
 Because of missing gender information, some totals may appear inconsistent

Science: Physics  
 Label: Conversion of electrical/light energy ( S022282 - X01 )  
 Item Type = SA Key = X

| COUNTRY            | N    | NOT REACHED |     |     |      |      |      |      |      |      |      | 1.GIRL<br>% Right | 2.BOY<br>% Right |      |      |
|--------------------|------|-------------|-----|-----|------|------|------|------|------|------|------|-------------------|------------------|------|------|
|                    |      | 10          | 11  | 19  | 70   | 71   | 72   | 73   | 79   | 99   | V1   |                   |                  |      |      |
| Australia          | 996  | 4.8         | 4.1 | 0.0 | 25.6 | 16.2 | 4.8  | 11.6 | 28.5 | 4.4  | 8.9  | 0.2               | 4.2              | 6.6  | 11.1 |
| Belgium (Flemish)  | 1313 | 7.8         | 2.9 | 0.3 | 18.6 | 26.8 | 7.3  | 16.2 | 17.2 | 3.0  | 10.9 | 0.0               | 2.9              | 8.7  | 13.1 |
| Bulgaria           | 818  | 5.6         | 1.1 | 0.7 | 15.3 | 11.6 | 5.8  | 15.9 | 18.1 | 26.0 | 7.4  | 1.8               | 24.2             | 6.7  | 8.2  |
| Canada             | 2182 | 3.4         | 4.1 | 0.6 | 27.4 | 18.9 | 4.9  | 15.9 | 22.5 | 2.3  | 8.1  | 0.4               | 1.9              | 7.7  | 8.5  |
| Chile              | 1447 | 0.2         | 0.8 | 0.1 | 24.5 | 4.4  | 0.5  | 21.9 | 23.8 | 23.9 | 1.0  | 10.1              | 13.9             | 0.7  | 1.2  |
| Chinese Taipei     | 1457 | 2.7         | 7.1 | 2.5 | 13.1 | 58.1 | 3.7  | 8.5  | 3.4  | 0.9  | 12.3 | 0.0               | 0.9              | 13.4 | 11.2 |
| Cyprus             | 764  | 1.1         | 2.3 | 0.4 | 25.3 | 20.3 | 1.4  | 24.2 | 17.2 | 7.9  | 3.8  | 0.2               | 7.7              | 4.3  | 3.3  |
| Czech Republic     | 878  | 3.4         | 3.0 | 1.1 | 23.1 | 12.9 | 2.1  | 15.9 | 30.8 | 7.7  | 7.5  | 2.0               | 5.7              | 4.4  | 11.2 |
| England            | 737  | 10.5        | 5.7 | 0.0 | 18.7 | 13.1 | 4.7  | 10.9 | 32.2 | 4.1  | 16.2 | 1.1               | 3.0              | 12.0 | 20.2 |
| Finland            | 724  | 3.6         | 2.2 | 0.0 | 31.4 | 7.6  | 1.7  | 15.8 | 34.6 | 2.9  | 5.9  | 0.2               | 2.7              | 3.3  | 8.5  |
| Hong Kong, SAR     | 1295 | 6.0         | 5.1 | 0.4 | 19.7 | 33.9 | 2.4  | 14.6 | 15.1 | 2.8  | 11.5 | 0.3               | 2.5              | 8.5  | 14.4 |
| Hungary            | 799  | 5.6         | 8.1 | 0.8 | 20.4 | 20.2 | 4.2  | 5.3  | 26.7 | 8.8  | 14.4 | 1.8               | 7.0              | 12.4 | 16.3 |
| Indonesia          | 1454 | 0.6         | 0.7 | 1.0 | 37.7 | 16.2 | 1.0  | 16.4 | 20.3 | 6.2  | 2.3  | 0.8               | 5.4              | 2.8  | 1.7  |
| Iran, Islamic Rep. | 1327 | 9.4         | 0.9 | 0.1 | 14.8 | 21.5 | 12.0 | 18.4 | 17.2 | 5.8  | 10.4 | 1.4               | 4.4              | 5.7  | 13.6 |
| Israel             | 1034 | 1.9         | 1.6 | 1.1 | 20.0 | 17.8 | 1.8  | 13.2 | 24.0 | 18.5 | 4.6  | 3.5               | 15.0             | 3.1  | 6.3  |
| Italy              | 827  | 3.6         | 0.6 | 0.7 | 24.4 | 11.3 | 3.1  | 17.2 | 27.3 | 11.8 | 5.0  | 2.2               | 9.5              | 4.9  | 5.1  |
| Japan              | 1190 | 1.4         | 6.6 | 1.8 | 29.4 | 21.8 | 3.8  | 18.9 | 14.4 | 2.0  | 9.7  | 0.3               | 1.7              | 10.1 | 9.4  |
| Jordan             | 1262 | 1.3         | 1.1 | 1.3 | 19.0 | 15.1 | 3.3  | 16.2 | 36.1 | 6.6  | 3.8  | 0.7               | 5.9              | 3.8  | 3.7  |
| Korea, Rep. of     | 1529 | 4.3         | 3.4 | 0.5 | 19.1 | 51.6 | 2.8  | 14.3 | 1.8  | 2.2  | 8.3  | 0.1               | 2.1              | 6.1  | 10.4 |
| Latvia (LSS)       | 725  | 2.3         | 3.0 | 0.4 | 24.3 | 27.9 | 12.3 | 4.3  | 13.6 | 11.9 | 5.7  | 1.5               | 10.4             | 5.0  | 6.4  |
| Lithuania          | 592  | 2.3         | 1.1 | 1.8 | 21.7 | 3.8  | 0.3  | 16.8 | 32.4 | 19.7 | 5.2  | 2.7               | 17.0             | 4.3  | 6.3  |
| Macedonia, Rep. of | 1006 | 5.1         | 1.8 | 4.0 | 10.6 | 15.4 | 4.4  | 9.5  | 20.0 | 29.3 | 10.9 | 4.2               | 25.0             | 9.4  | 12.4 |
| Malaysia           | 1398 | 2.4         | 0.6 | 0.2 | 28.7 | 14.3 | 0.5  | 24.3 | 21.8 | 7.1  | 3.3  | 1.1               | 6.1              | 2.8  | 3.9  |
| Moldova            | 919  | 3.1         | 0.3 | 0.1 | 18.3 | 5.6  | 3.8  | 14.8 | 34.9 | 19.0 | 3.6  | 3.1               | 15.9             | 2.1  | 5.2  |
| Morocco            | 1336 | 1.6         | 0.1 | 1.0 | 9.2  | 11.7 | 2.5  | 3.1  | 36.8 | 33.8 | 2.7  | 9.9               | 23.9             | 2.2  | 3.1  |
| Netherlands        | 747  | 5.8         | 4.1 | 0.0 | 26.2 | 22.7 | 4.2  | 20.9 | 13.7 | 2.4  | 10.0 | 0.4               | 2.0              | 8.8  | 11.2 |
| New Zealand        | 913  | 3.9         | 3.0 | 0.1 | 26.7 | 15.3 | 3.1  | 18.0 | 25.8 | 4.0  | 7.0  | 0.1               | 3.9              | 4.9  | 8.8  |
| Philippines        | 1638 | 0.0         | 0.1 | 0.3 | 30.2 | 1.5  | 1.3  | 19.7 | 37.4 | 9.4  | 0.4  | 1.2               | 8.2              | 0.5  | 0.3  |
| Romania            | 854  | 2.2         | 1.8 | 0.2 | 20.6 | 9.2  | 1.4  | 25.3 | 30.4 | 8.9  | 4.2  | 1.4               | 7.5              | 4.3  | 4.1  |
| Russian Federation | 1072 | 10.5        | 3.3 | 2.0 | 25.3 | 4.8  | 1.5  | 18.7 | 19.0 | 14.8 | 15.8 | 2.5               | 12.3             | 13.3 | 18.6 |
| Singapore          | 1232 | 16.5        | 3.6 | 0.8 | 24.4 | 12.1 | 3.0  | 11.6 | 26.7 | 1.1  | 20.9 | 0.2               | 0.9              | 18.7 | 23.2 |
| Slovak Republic    | 863  | 5.7         | 3.5 | 1.0 | 15.8 | 27.5 | 4.9  | 16.1 | 10.8 | 14.6 | 10.2 | 1.0               | 13.6             | 7.3  | 13.2 |
| Slovenia           | 772  | 7.8         | 4.6 | 0.2 | 18.7 | 22.4 | 3.2  | 17.8 | 19.2 | 6.1  | 12.6 | 0.4               | 5.7              | 9.4  | 16.0 |
| South Africa       | 2036 | 0.3         | 1.0 | 0.3 | 24.5 | 3.0  | 0.7  | 21.5 | 31.1 | 17.6 | 1.6  | 5.1               | 12.5             | 1.7  | 1.6  |
| Thailand           | 1427 | 1.2         | 1.2 | 0.7 | 33.0 | 19.7 | 3.1  | 21.0 | 16.0 | 4.3  | 3.1  | 0.6               | 3.6              | 3.0  | 3.2  |
| Tunisia            | 1235 | 0.9         | 1.4 | 3.9 | 18.6 | 24.1 | 2.5  | 28.2 | 11.5 | 8.9  | 6.2  | 4.8               | 4.1              | 5.9  | 6.5  |
| Turkey             | 1962 | 3.1         | 1.0 | 1.9 | 22.3 | 37.8 | 6.3  | 14.1 | 2.6  | 11.0 | 5.9  | 1.5               | 9.5              | 6.1  | 5.8  |
| United States      | 2268 | 1.2         | 2.5 | 0.1 | 29.5 | 10.2 | 1.5  | 20.9 | 30.0 | 4.2  | 3.8  | 0.5               | 3.7              | 3.1  | 4.5  |
| International Avg. | .    | 4.0         | 2.6 | 0.9 | 22.5 | 18.1 | 3.5  | 16.3 | 22.2 | 9.9  | 7.5  | 1.8               | 8.1              | 6.3  | 8.7  |

V1 = % Scoring 1 or better V2 = % Scoring 2 or better V3 = % Scoring 3 or better  
 Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.  
 Because of missing gender information, some totals may appear inconsistent

Science: Life Science  
 Label: Importance of trees/sun in rain forest ( S022172A - X02A )  
 Item Type = EX Key = X

| COUNTRY            | N    | NOT REACH ED |      |      |      |      |      |      |      |      | 1.GIRL<br>% Right | 2.BOY<br>% Right |      |      |
|--------------------|------|--------------|------|------|------|------|------|------|------|------|-------------------|------------------|------|------|
|                    |      | 10           | 11   | 12   | 13   | 19   | 70   | 79   | 99   | V1   |                   |                  |      |      |
| Australia          | 996  | 37.9         | 8.5  | 35.2 | 8.6  | 0.7  | 2.9  | 2.8  | 3.4  | 90.8 | 0.5               | 2.9              | 92.6 | 89.1 |
| Belgium (Flemish)  | 1313 | 43.6         | 11.5 | 17.5 | 12.6 | 0.8  | 4.2  | 6.1  | 3.7  | 86.0 | 0.6               | 3.1              | 85.2 | 86.8 |
| Bulgaria           | 818  | 29.1         | 8.9  | 11.5 | 1.3  | 9.2  | 6.8  | 7.7  | 25.4 | 60.0 | 12.0              | 13.4             | 66.3 | 53.1 |
| Canada             | 2182 | 40.7         | 7.8  | 34.8 | 5.8  | 0.9  | 2.1  | 4.0  | 3.8  | 90.0 | 0.6               | 3.2              | 93.5 | 86.8 |
| Chile              | 1447 | 18.3         | 6.7  | 11.0 | 4.6  | 7.6  | 7.0  | 14.5 | 30.2 | 48.3 | 15.2              | 15.1             | 51.1 | 45.6 |
| Chinese Taipei     | 1457 | 30.7         | 10.6 | 24.9 | 2.4  | 18.8 | 1.3  | 6.7  | 4.6  | 87.5 | 0.1               | 4.4              | 90.6 | 84.4 |
| Cyprus             | 771  | 34.2         | 5.5  | 7.8  | 3.5  | 28.5 | 3.4  | 4.9  | 12.3 | 79.4 | 2.5               | 9.8              | 84.0 | 74.7 |
| Czech Republic     | 878  | 45.1         | 8.6  | 14.0 | 5.0  | 3.1  | 7.2  | 6.1  | 10.8 | 75.8 | 2.4               | 8.4              | 77.0 | 74.5 |
| England            | 737  | 35.1         | 7.0  | 40.6 | 3.2  | 1.7  | 3.4  | 3.9  | 5.0  | 87.7 | 1.5               | 3.5              | 87.9 | 87.5 |
| Finland            | 724  | 37.4         | 9.9  | 19.1 | 13.1 | 3.7  | 6.4  | 4.4  | 6.2  | 83.0 | 1.1               | 5.1              | 85.3 | 80.7 |
| Hong Kong, SAR     | 1295 | 37.2         | 7.6  | 27.9 | 5.2  | 3.9  | 2.2  | 10.5 | 5.6  | 81.8 | 1.1               | 4.5              | 83.5 | 80.1 |
| Hungary            | 799  | 38.4         | 13.5 | 21.9 | 3.6  | 2.1  | 4.9  | 4.7  | 11.0 | 79.4 | 2.7               | 8.2              | 83.5 | 75.2 |
| Indonesia          | 1453 | 6.6          | 8.6  | 32.9 | 2.3  | 21.5 | 2.8  | 18.8 | 6.5  | 71.9 | 2.5               | 4.0              | 73.1 | 70.6 |
| Iran, Islamic Rep. | 1327 | 13.6         | 12.1 | 13.9 | 1.7  | 1.1  | 11.0 | 21.3 | 25.3 | 42.4 | 3.2               | 22.1             | 44.1 | 41.3 |
| Israel             | 1034 | 31.6         | 6.4  | 13.0 | 5.5  | 2.7  | 5.5  | 12.3 | 23.0 | 59.2 | 8.4               | 14.6             | 56.0 | 62.9 |
| Italy              | 827  | 45.3         | 7.9  | 10.9 | 2.5  | 4.8  | 4.5  | 7.2  | 17.0 | 71.3 | 4.9               | 12.1             | 72.5 | 70.0 |
| Japan              | 1190 | 29.8         | 14.4 | 20.0 | 2.6  | 15.7 | 5.2  | 4.2  | 8.1  | 82.5 | 0.5               | 7.6              | 85.0 | 80.2 |
| Jordan             | 1261 | 28.7         | 13.8 | 11.6 | 3.7  | 11.4 | 1.6  | 17.8 | 11.3 | 69.3 | 3.0               | 8.3              | 77.3 | 62.4 |
| Korea, Rep. of     | 1526 | 45.7         | 14.5 | 18.3 | 2.4  | 6.4  | 6.6  | 2.9  | 3.1  | 87.4 | 0.6               | 2.5              | 87.8 | 86.9 |
| Latvia (LSS)       | 725  | 24.7         | 9.4  | 35.3 | 8.5  | 0.7  | 1.2  | 3.9  | 16.2 | 78.7 | 3.9               | 12.3             | 79.6 | 77.7 |
| Lithuania          | 592  | 20.6         | 9.7  | 16.9 | 9.8  | 5.7  | 2.1  | 11.3 | 24.0 | 62.7 | 8.6               | 15.3             | 60.9 | 64.6 |
| Macedonia, Rep. of | 1006 | 23.4         | 5.3  | 7.3  | 2.0  | 11.3 | 2.9  | 10.5 | 37.4 | 49.2 | 16.2              | 21.2             | 53.0 | 45.4 |
| Malaysia           | 1398 | 30.0         | 10.5 | 32.3 | 1.1  | 4.9  | 3.8  | 8.1  | 9.2  | 78.8 | 3.1               | 6.1              | 79.5 | 78.1 |
| Moldova            | 917  | 25.9         | 8.4  | 10.6 | 4.5  | 6.6  | 5.9  | 12.8 | 25.4 | 55.9 | 8.7               | 16.7             | 54.0 | 57.9 |
| Morocco            | 1335 | 20.3         | 2.2  | 7.0  | 4.8  | 9.3  | 5.7  | 14.2 | 36.4 | 43.7 | 19.8              | 16.6             | 44.9 | 42.8 |
| Netherlands        | 747  | 33.4         | 5.8  | 12.8 | 24.8 | 2.6  | 3.2  | 11.4 | 5.9  | 79.4 | 1.2               | 4.8              | 80.7 | 78.1 |
| New Zealand        | 913  | 43.8         | 6.5  | 29.3 | 2.0  | 1.5  | 4.1  | 8.5  | 4.2  | 83.2 | 0.2               | 4.0              | 86.3 | 80.3 |
| Philippines        | 1638 | 13.2         | 14.4 | 19.1 | 1.4  | 10.5 | 3.4  | 25.0 | 13.0 | 58.7 | 4.2               | 8.8              | 63.4 | 53.0 |
| Romania            | 854  | 36.1         | 9.6  | 9.7  | 1.9  | 2.2  | 7.5  | 9.0  | 23.9 | 59.6 | 4.8               | 19.1             | 62.9 | 56.6 |
| Russian Federation | 1072 | 27.5         | 15.5 | 14.8 | 4.1  | 2.6  | 6.7  | 8.9  | 19.9 | 64.4 | 5.1               | 14.8             | 64.2 | 64.7 |
| Singapore          | 1232 | 37.6         | 14.1 | 33.7 | 6.2  | 1.6  | 1.7  | 2.9  | 2.1  | 93.2 | 0.2               | 1.9              | 94.1 | 92.3 |
| Slovak Republic    | 863  | 43.7         | 4.7  | 20.5 | 3.1  | 8.5  | 4.3  | 3.9  | 11.4 | 80.5 | 4.2               | 7.2              | 78.8 | 82.1 |
| Slovenia           | 772  | 37.2         | 12.4 | 19.9 | 3.6  | 4.7  | 3.5  | 8.4  | 10.3 | 77.8 | 1.4               | 8.9              | 79.7 | 75.7 |
| South Africa       | 2036 | 9.3          | 5.5  | 10.7 | 3.7  | 0.8  | 3.2  | 30.8 | 36.1 | 29.9 | 10.5              | 25.5             | 31.9 | 27.7 |
| Thailand           | 1427 | 10.8         | 6.6  | 44.5 | 8.9  | 15.9 | 1.8  | 7.0  | 4.5  | 86.7 | 1.7               | 2.7              | 88.4 | 84.6 |
| Tunisia            | 1259 | 31.2         | 13.6 | 11.5 | 3.3  | 17.7 | 7.5  | 3.6  | 11.6 | 77.3 | 5.9               | 5.7              | 78.2 | 76.3 |
| Turkey             | 1961 | 32.5         | 2.6  | 16.2 | 0.9  | 9.0  | 1.4  | 10.6 | 26.9 | 61.1 | 4.3               | 22.6             | 64.8 | 58.5 |
| United States      | 2268 | 40.0         | 5.7  | 31.2 | 7.8  | 0.4  | 3.7  | 8.3  | 2.8  | 85.1 | 1.1               | 1.7              | 85.6 | 84.6 |
| International Avg. | .    | 30.8         | 9.1  | 20.3 | 5.1  | 6.9  | 4.3  | 9.5  | 14.1 | 72.1 | 4.4               | 9.7              | 73.9 | 70.4 |

V1 = % Scoring 1 or better V2 = % Scoring 2 or better V3 = % Scoring 3 or better  
 Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.  
 Because of missing gender information, some totals may appear inconsistent



Science: Life Science  
 Label: Importance of trees/sun in rain forest ( S022172B - X02B )  
 Item Type = EX Key = X

| COUNTRY            | N    | 10   | 11   | 12   | 13   | 14   | 19   | 70   | 79   | 99   | V1   | NOT   | 1.GIRL | 2.BOY |      |
|--------------------|------|------|------|------|------|------|------|------|------|------|------|-------|--------|-------|------|
|                    |      |      |      |      |      |      |      |      |      |      |      | REACH |        |       | ED   |
| Australia          | 996  | 12.5 | 0.4  | 48.9 | 14.4 | 11.2 | 0.6  | 5.5  | 2.2  | 4.3  | 87.9 | 2.1   | 2.2    | 90.6  | 85.3 |
| Belgium (Flemish)  | 1313 | 7.2  | 0.9  | 37.0 | 23.2 | 10.6 | 1.9  | 8.9  | 4.6  | 5.7  | 80.8 | 1.5   | 4.2    | 78.7  | 82.9 |
| Bulgaria           | 818  | 16.1 | 0.1  | 8.7  | 11.2 | 5.3  | 6.5  | 15.8 | 7.9  | 28.4 | 47.9 | 19.7  | 8.7    | 51.1  | 44.7 |
| Canada             | 2182 | 9.0  | 0.4  | 44.8 | 24.7 | 8.3  | 1.0  | 4.7  | 2.7  | 4.4  | 88.2 | 2.6   | 1.8    | 91.9  | 84.7 |
| Chile              | 1447 | 5.2  | 0.1  | 13.0 | 11.0 | 10.7 | 6.2  | 10.2 | 9.6  | 34.0 | 46.2 | 23.7  | 10.3   | 49.7  | 42.8 |
| Chinese Taipei     | 1457 | 50.6 | 0.5  | 17.2 | 7.6  | 4.3  | 2.3  | 6.7  | 4.9  | 5.9  | 82.5 | 2.4   | 3.5    | 85.8  | 79.2 |
| Cyprus             | 772  | 23.1 | 3.3  | 16.2 | 3.3  | 8.9  | 11.5 | 11.2 | 6.0  | 16.6 | 66.3 | 8.3   | 8.2    | 70.9  | 61.6 |
| Czech Republic     | 878  | 20.3 | 0.0  | 21.0 | 15.4 | 10.6 | 1.5  | 12.3 | 5.9  | 13.0 | 68.8 | 5.2   | 7.7    | 70.5  | 67.0 |
| England            | 737  | 16.9 | 0.5  | 45.8 | 8.8  | 11.3 | 0.6  | 5.2  | 4.5  | 6.4  | 84.0 | 3.5   | 2.9    | 87.5  | 80.5 |
| Finland            | 724  | 7.9  | 0.1  | 32.0 | 23.5 | 15.5 | 2.1  | 7.7  | 2.9  | 8.3  | 81.1 | 2.8   | 5.6    | 83.0  | 79.1 |
| Hong Kong, SAR     | 1295 | 28.3 | 0.5  | 23.1 | 13.6 | 12.4 | 1.3  | 6.4  | 8.5  | 5.8  | 79.3 | 3.1   | 2.8    | 80.3  | 78.3 |
| Hungary            | 799  | 29.1 | 0.7  | 14.3 | 10.3 | 8.5  | 1.0  | 15.5 | 3.7  | 16.9 | 64.0 | 5.6   | 11.3   | 65.2  | 63.2 |
| Indonesia          | 1453 | 30.8 | 18.5 | 0.4  | 2.1  | 11.3 | 2.0  | 9.6  | 16.4 | 8.9  | 65.1 | 4.9   | 4.0    | 66.0  | 64.2 |
| Iran, Islamic Rep. | 1327 | 7.3  | 0.9  | 23.7 | 4.6  | 10.8 | 0.8  | 17.1 | 14.1 | 20.7 | 48.2 | 11.9  | 8.8    | 49.4  | 47.4 |
| Israel             | 1034 | 9.9  | 0.7  | 10.6 | 13.5 | 18.9 | 1.6  | 11.0 | 8.2  | 25.5 | 55.3 | 14.9  | 10.6   | 53.1  | 57.9 |
| Italy              | 827  | 25.4 | 0.9  | 15.1 | 10.3 | 7.8  | 2.9  | 11.3 | 7.3  | 19.0 | 62.4 | 10.6  | 8.4    | 64.6  | 60.1 |
| Japan              | 1190 | 35.7 | 0.1  | 38.5 | 3.8  | 3.2  | 4.0  | 4.6  | 2.8  | 7.2  | 85.4 | 2.5   | 4.7    | 86.8  | 84.1 |
| Jordan             | 1261 | 30.8 | 1.1  | 17.1 | 7.4  | 10.1 | 1.8  | 3.8  | 16.0 | 11.9 | 68.3 | 6.3   | 5.6    | 76.7  | 61.0 |
| Korea, Rep. of     | 1526 | 25.5 | 0.3  | 50.3 | 4.2  | 5.5  | 0.3  | 7.3  | 2.1  | 4.5  | 86.2 | 2.4   | 2.1    | 86.0  | 86.4 |
| Latvia (LSS)       | 725  | 12.5 | 0.2  | 21.9 | 34.7 | 8.9  | 1.0  | 1.9  | 2.0  | 17.0 | 79.2 | 10.8  | 6.2    | 81.8  | 76.2 |
| Lithuania          | 592  | 6.4  | 0.1  | 12.1 | 30.2 | 4.1  | 2.7  | 8.0  | 11.3 | 25.0 | 55.7 | 15.2  | 9.8    | 58.0  | 53.0 |
| Macedonia, Rep. of | 1006 | 11.8 | 5.7  | 7.3  | 6.7  | 4.8  | 7.6  | 3.9  | 10.2 | 42.0 | 43.9 | 27.4  | 14.6   | 49.1  | 38.7 |
| Malaysia           | 1398 | 39.4 | 0.3  | 15.8 | 1.4  | 16.2 | 4.4  | 7.0  | 6.4  | 9.0  | 77.5 | 6.9   | 2.1    | 78.0  | 76.9 |
| Moldova            | 919  | 10.5 | 1.0  | 7.1  | 26.4 | 7.9  | 1.9  | 6.5  | 8.7  | 29.9 | 54.8 | 17.8  | 12.1   | 53.1  | 56.6 |
| Morocco            | 1335 | 3.8  | 3.2  | 6.4  | 2.5  | 8.4  | 10.5 | 7.0  | 13.2 | 44.9 | 34.8 | 30.5  | 14.4   | 34.7  | 34.9 |
| Netherlands        | 747  | 5.1  | 0.2  | 29.2 | 20.3 | 19.8 | 1.9  | 5.8  | 10.7 | 7.1  | 76.5 | 2.3   | 4.8    | 79.6  | 73.5 |
| New Zealand        | 913  | 4.8  | 0.6  | 50.5 | 15.1 | 11.3 | 0.0  | 5.8  | 5.8  | 6.0  | 82.4 | 2.0   | 4.0    | 87.1  | 78.2 |
| Philippines        | 1638 | 7.5  | 0.9  | 22.9 | 11.4 | 14.6 | 2.0  | 5.6  | 17.5 | 17.6 | 59.4 | 9.5   | 8.1    | 63.7  | 54.2 |
| Romania            | 854  | 23.2 | 0.7  | 7.0  | 14.2 | 11.2 | 1.0  | 8.9  | 6.0  | 27.6 | 57.4 | 17.9  | 9.8    | 61.1  | 54.1 |
| Russian Federation | 1072 | 17.7 | 0.9  | 17.3 | 19.4 | 4.2  | 0.4  | 11.7 | 8.0  | 20.3 | 59.9 | 11.3  | 9.1    | 59.9  | 59.9 |
| Singapore          | 1232 | 45.3 | 0.4  | 30.1 | 6.8  | 8.2  | 0.5  | 3.0  | 2.7  | 2.9  | 91.4 | 1.3   | 1.6    | 93.1  | 89.6 |
| Slovak Republic    | 863  | 19.9 | 0.6  | 19.6 | 14.1 | 8.1  | 4.5  | 10.7 | 5.1  | 17.5 | 66.8 | 6.9   | 10.5   | 64.0  | 69.5 |
| Slovenia           | 772  | 16.6 | 0.5  | 17.7 | 16.4 | 25.2 | 0.7  | 5.9  | 5.6  | 11.3 | 77.2 | 5.1   | 6.2    | 81.4  | 72.7 |
| South Africa       | 2036 | 2.5  | 0.3  | 9.4  | 6.1  | 9.2  | 0.7  | 4.9  | 35.0 | 31.8 | 28.3 | 19.1  | 12.7   | 29.0  | 27.5 |
| Thailand           | 1427 | 19.7 | 7.4  | 15.3 | 6.2  | 30.9 | 4.5  | 2.1  | 8.5  | 5.4  | 84.0 | 3.2   | 2.1    | 86.3  | 81.1 |
| Tunisia            | 1255 | 17.2 | 2.9  | 16.4 | 14.8 | 13.5 | 4.7  | 11.7 | 5.1  | 13.8 | 69.4 | 9.4   | 4.4    | 71.7  | 67.0 |
| Turkey             | 1961 | 16.3 | 1.3  | 17.0 | 10.2 | 4.5  | 7.0  | 2.0  | 9.0  | 32.8 | 56.2 | 13.3  | 19.5   | 59.2  | 54.1 |
| United States      | 2268 | 5.3  | 0.2  | 49.2 | 14.3 | 11.2 | 0.3  | 10.0 | 6.6  | 2.8  | 80.6 | 2.5   | 0.3    | 82.0  | 79.2 |
| International Avg. | .    | 17.8 | 1.5  | 22.4 | 12.7 | 10.7 | 2.8  | 7.8  | 8.1  | 16.1 | 68.0 | 9.1   | 7.0    | 70.0  | 66.0 |

V1 = % Scoring 1 or better V2 = % Scoring 2 or better V3 = % Scoring 3 or better  
 Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.  
 Because of missing gender information, some totals may appear inconsistent

Science: Scientific Inquiry and the Nature of Science  
 Label: Heart rate experiment design ( S022288 - X03 )  
 Item Type = EX Key = X

| COUNTRY            | N    | 20   | 29  | 10   | 11   | 19  | 70   | 71   | 72   | 79   | 99   | V1   | V2   | NOT REACH |      | 1.GIRL  | 2.BOY   |
|--------------------|------|------|-----|------|------|-----|------|------|------|------|------|------|------|-----------|------|---------|---------|
|                    |      |      |     |      |      |     |      |      |      |      |      |      |      | ED        | OMIT | % Right | % Right |
| Australia          | 996  | 29.5 | 0.5 | 10.0 | 6.1  | 3.0 | 6.6  | 18.9 | 4.3  | 9.9  | 11.2 | 49.1 | 29.9 | 2.8       | 8.4  | 33.0    | 27.0    |
| Belgium (Flemish)  | 1312 | 23.2 | 0.0 | 7.7  | 4.1  | 4.4 | 20.5 | 15.6 | 8.1  | 7.4  | 9.1  | 39.4 | 23.2 | 2.3       | 6.7  | 21.5    | 24.9    |
| Bulgaria           | 817  | 2.3  | 0.3 | 5.7  | 0.9  | 3.1 | 13.5 | 6.6  | 2.7  | 16.8 | 48.1 | 12.3 | 2.6  | 22.9      | 25.2 | 2.6     | 2.5     |
| Canada             | 2182 | 26.1 | 0.1 | 11.3 | 3.8  | 2.3 | 8.0  | 10.2 | 14.3 | 12.3 | 11.7 | 43.6 | 26.1 | 3.1       | 8.6  | 30.0    | 22.6    |
| Chile              | 1447 | 2.4  | 0.0 | 2.0  | 0.6  | 0.5 | 2.5  | 5.5  | 3.1  | 26.8 | 56.7 | 5.4  | 2.4  | 29.9      | 26.8 | 2.0     | 2.8     |
| Chinese Taipei     | 1457 | 23.5 | 0.4 | 17.0 | 7.8  | 6.9 | 7.5  | 13.4 | 4.8  | 9.2  | 9.4  | 55.7 | 23.9 | 3.1       | 6.3  | 24.1    | 23.7    |
| Cyprus             | 774  | 5.4  | 0.5 | 3.6  | 2.3  | 1.9 | 4.7  | 12.7 | 7.9  | 26.1 | 34.8 | 13.7 | 5.9  | 11.9      | 22.8 | 5.9     | 6.0     |
| Czech Republic     | 878  | 18.9 | 0.0 | 12.5 | 7.3  | 2.0 | 3.4  | 20.3 | 10.2 | 7.9  | 17.5 | 40.7 | 18.9 | 7.2       | 10.3 | 17.2    | 20.8    |
| England            | 737  | 31.1 | 0.0 | 11.9 | 8.5  | 1.1 | 5.6  | 11.5 | 8.2  | 7.4  | 14.7 | 52.7 | 31.1 | 3.9       | 10.8 | 31.0    | 31.2    |
| Finland            | 724  | 16.9 | 0.1 | 7.6  | 7.6  | 1.0 | 7.2  | 30.3 | 9.7  | 13.4 | 6.3  | 33.2 | 17.0 | 3.8       | 2.5  | 21.4    | 12.3    |
| Hong Kong, SAR     | 1295 | 20.0 | 0.1 | 15.9 | 5.5  | 3.4 | 5.5  | 12.2 | 6.5  | 14.9 | 16.0 | 44.9 | 20.1 | 3.6       | 12.4 | 20.6    | 19.6    |
| Hungary            | 799  | 11.4 | 0.0 | 6.5  | 1.5  | 6.4 | 10.7 | 12.0 | 23.0 | 11.4 | 17.1 | 25.8 | 11.4 | 8.5       | 8.6  | 10.2    | 12.9    |
| Indonesia          | 1452 | 4.6  | 0.0 | 4.8  | 8.7  | 3.3 | 6.2  | 2.5  | 4.5  | 44.4 | 20.9 | 21.5 | 4.6  | 6.4       | 14.5 | 5.3     | 3.9     |
| Iran, Islamic Rep. | 1327 | 1.6  | 0.2 | 3.1  | 0.5  | 2.2 | 7.9  | 4.4  | 4.6  | 33.9 | 41.6 | 7.6  | 1.8  | 15.5      | 26.1 | 0.9     | 2.4     |
| Israel             | 1034 | 7.9  | 0.9 | 3.7  | 2.9  | 2.8 | 11.0 | 11.4 | 12.9 | 17.6 | 28.9 | 18.2 | 8.8  | 16.7      | 12.2 | 6.3     | 11.5    |
| Italy              | 827  | 5.7  | 0.5 | 4.8  | 2.1  | 3.2 | 8.0  | 8.7  | 8.7  | 23.8 | 34.7 | 16.2 | 6.1  | 13.1      | 21.7 | 4.8     | 7.5     |
| Japan              | 1190 | 19.2 | 0.0 | 3.1  | 20.5 | 2.7 | 4.1  | 16.3 | 20.4 | 6.5  | 7.3  | 45.4 | 19.2 | 2.8       | 4.5  | 21.2    | 17.2    |
| Jordan             | 1262 | 4.1  | 0.8 | 3.5  | 3.0  | 2.7 | 21.3 | 9.2  | 5.3  | 28.5 | 21.5 | 14.1 | 4.9  | 8.7       | 12.9 | 7.5     | 2.7     |
| Korea, Rep. of     | 1522 | 29.6 | 0.2 | 9.9  | 6.3  | 0.4 | 7.6  | 15.1 | 3.4  | 8.6  | 18.8 | 46.5 | 29.8 | 3.1       | 15.7 | 30.3    | 29.4    |
| Latvia (LSS)       | 725  | 6.4  | 0.4 | 4.8  | 0.8  | 0.7 | 4.7  | 24.4 | 11.7 | 15.1 | 31.1 | 13.0 | 6.8  | 11.5      | 19.6 | 7.5     | 6.0     |
| Lithuania          | 592  | 5.2  | 0.7 | 1.5  | 1.3  | 5.6 | 1.8  | 3.9  | 8.7  | 40.2 | 31.1 | 14.4 | 5.9  | 16.4      | 14.7 | 6.2     | 5.7     |
| Macedonia, Rep. of | 1006 | 6.1  | 1.3 | 1.7  | 2.5  | 5.2 | 3.0  | 1.2  | 2.9  | 17.9 | 58.2 | 16.7 | 7.4  | 34.6      | 23.7 | 9.0     | 5.8     |
| Malaysia           | 1397 | 2.3  | 0.1 | 5.7  | 2.5  | 0.6 | 10.5 | 15.3 | 15.9 | 21.4 | 25.8 | 11.1 | 2.4  | 7.5       | 18.3 | 1.8     | 3.1     |
| Moldova            | 913  | 3.3  | 0.4 | 6.8  | 1.6  | 4.4 | 16.7 | 3.3  | 2.1  | 15.5 | 46.0 | 16.5 | 3.6  | 24.4      | 21.5 | 4.1     | 3.1     |
| Morocco            | 1322 | 1.4  | 1.0 | 0.4  | 0.3  | 4.0 | 3.4  | 8.1  | 0.6  | 23.4 | 57.4 | 7.1  | 2.4  | 38.5      | 18.9 | 2.9     | 2.0     |
| Netherlands        | 747  | 19.6 | 0.3 | 5.2  | 14.0 | 1.1 | 12.5 | 18.9 | 10.3 | 11.3 | 6.8  | 40.2 | 19.9 | 3.4       | 3.4  | 22.7    | 17.2    |
| New Zealand        | 913  | 27.3 | 0.3 | 5.6  | 7.8  | 0.3 | 8.6  | 16.7 | 3.1  | 13.3 | 16.9 | 41.4 | 27.7 | 4.1       | 12.8 | 32.2    | 23.6    |
| Philippines        | 1636 | 0.7  | 1.1 | 0.7  | 1.0  | 5.4 | 3.6  | 3.1  | 1.8  | 32.3 | 50.1 | 9.0  | 1.9  | 16.3      | 33.8 | 2.1     | 1.6     |
| Romania            | 850  | 2.7  | 0.1 | 2.1  | 1.3  | 1.5 | 8.5  | 8.7  | 8.3  | 22.9 | 44.0 | 7.7  | 2.8  | 22.1      | 21.8 | 2.1     | 3.4     |
| Russian Federation | 1072 | 5.5  | 0.2 | 4.1  | 2.0  | 1.1 | 15.2 | 5.5  | 18.3 | 11.3 | 36.9 | 12.9 | 5.7  | 15.1      | 21.8 | 5.0     | 6.5     |
| Singapore          | 1232 | 31.1 | 1.2 | 13.0 | 8.3  | 1.7 | 4.6  | 16.2 | 7.9  | 9.2  | 6.8  | 55.4 | 32.3 | 1.8       | 5.0  | 32.6    | 32.0    |
| Slovak Republic    | 863  | 7.3  | 0.7 | 8.5  | 2.1  | 6.0 | 7.7  | 11.8 | 18.8 | 12.1 | 24.9 | 24.6 | 8.0  | 10.4      | 14.5 | 8.2     | 7.7     |
| Slovenia           | 772  | 7.8  | 0.1 | 6.3  | 5.2  | 0.6 | 11.6 | 18.1 | 12.9 | 20.0 | 17.3 | 20.1 | 7.9  | 6.5       | 10.8 | 8.4     | 7.5     |
| South Africa       | 2036 | 0.7  | 0.0 | 0.9  | 0.4  | 0.4 | 1.0  | 2.7  | 2.3  | 26.1 | 65.6 | 2.3  | 0.7  | 29.1      | 36.4 | 0.6     | 0.7     |
| Thailand           | 1427 | 3.2  | 0.9 | 2.5  | 4.7  | 2.6 | 10.3 | 17.6 | 14.7 | 29.4 | 14.1 | 13.9 | 4.1  | 4.0       | 10.2 | 3.6     | 4.7     |
| Tunisia            | 1257 | 1.9  | 0.1 | 0.6  | 1.1  | 5.2 | 10.8 | 8.6  | 13.8 | 31.8 | 26.3 | 8.8  | 1.9  | 10.4      | 15.8 | 1.7     | 2.2     |
| Turkey             | 1961 | 3.7  | 0.7 | 2.8  | 5.4  | 3.8 | 14.1 | 2.6  | 4.2  | 24.4 | 38.2 | 16.5 | 4.5  | 18.8      | 19.4 | 5.2     | 4.0     |
| United States      | 2268 | 21.1 | 0.1 | 8.4  | 8.7  | 0.6 | 7.4  | 12.7 | 1.3  | 28.6 | 11.2 | 38.8 | 21.2 | 2.6       | 8.7  | 21.1    | 21.2    |
| International Avg. | .    | 11.6 | 0.4 | 6.0  | 4.5  | 2.7 | 8.4  | 11.5 | 8.5  | 19.3 | 27.2 | 25.2 | 12.0 | 11.8      | 15.5 | 12.4    | 11.6    |

V1 = % Scoring 1 or better V2 = % Scoring 2 or better V3 = % Scoring 3 or better  
 Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.  
 Because of missing gender information, some totals may appear inconsistent

Science: Life Science  
 Label: Heart rate increasing with exercise ( S022289 - Y01 )  
 Item Type = EX Key = X

| COUNTRY            | N    | 20   | 29  | 10   | 11   | 12  | 19   | 70   | 71   | 79   | 99   | V1   | V2   | NOT   | ED   | OMIT | 1.GIRL  | 2.BOY   |
|--------------------|------|------|-----|------|------|-----|------|------|------|------|------|------|------|-------|------|------|---------|---------|
|                    |      |      |     |      |      |     |      |      |      |      |      |      |      | REACH |      |      | % Right | % Right |
| Australia          | 994  | 31.0 | 0.0 | 16.0 | 26.2 | 0.6 | 0.3  | 12.2 | 2.6  | 7.2  | 3.7  | 74.3 | 31.0 | 0.3   | 3.5  |      | 28.5    | 33.9    |
| Belgium (Flemish)  | 1321 | 24.5 | 0.5 | 32.3 | 15.0 | 0.7 | 0.5  | 14.0 | 3.4  | 8.0  | 1.3  | 73.3 | 25.0 | 0.1   | 1.2  |      | 23.8    | 26.2    |
| Bulgaria           | 811  | 11.1 | 0.5 | 9.1  | 26.3 | 0.8 | 2.6  | 8.5  | 3.7  | 14.5 | 23.0 | 50.3 | 11.6 | 2.7   | 20.3 |      | 12.2    | 10.9    |
| Canada             | 2191 | 18.8 | 1.0 | 16.5 | 29.6 | 1.0 | 0.9  | 13.5 | 3.6  | 11.9 | 3.0  | 67.9 | 19.8 | 0.4   | 2.6  |      | 18.4    | 21.3    |
| Chile              | 1473 | 5.0  | 0.0 | 6.1  | 15.2 | 0.5 | 0.0  | 35.3 | 3.1  | 17.3 | 17.6 | 26.8 | 5.0  | 7.6   | 9.9  |      | 4.5     | 5.6     |
| Chinese Taipei     | 1456 | 20.4 | 0.7 | 19.6 | 20.2 | 0.7 | 2.5  | 17.1 | 5.4  | 9.0  | 4.2  | 64.2 | 21.1 | 0.1   | 4.2  |      | 15.8    | 26.7    |
| Cyprus             | 770  | 12.7 | 0.6 | 33.0 | 8.0  | 0.2 | 2.3  | 15.4 | 2.0  | 18.3 | 7.6  | 56.7 | 13.3 | 0.4   | 7.2  |      | 11.6    | 15.0    |
| Czech Republic     | 862  | 20.3 | 0.0 | 22.2 | 17.4 | 0.3 | 0.4  | 17.0 | 6.0  | 11.1 | 5.4  | 60.5 | 20.3 | 1.9   | 3.5  |      | 13.8    | 26.9    |
| England            | 728  | 33.7 | 0.0 | 22.8 | 29.3 | 0.5 | 0.0  | 4.8  | 2.1  | 3.9  | 2.9  | 86.2 | 33.7 | 1.6   | 1.4  |      | 32.9    | 34.4    |
| Finland            | 729  | 19.8 | 0.3 | 12.5 | 19.8 | 0.1 | 5.6  | 13.8 | 5.6  | 18.3 | 4.2  | 58.1 | 20.2 | 0.3   | 3.9  |      | 18.9    | 21.6    |
| Hong Kong, SAR     | 1295 | 12.4 | 0.0 | 15.1 | 29.4 | 0.9 | 1.7  | 8.5  | 3.5  | 19.4 | 9.2  | 59.4 | 12.4 | 0.2   | 9.0  |      | 8.1     | 16.5    |
| Hungary            | 792  | 21.3 | 0.3 | 18.9 | 16.5 | 3.4 | 6.6  | 5.6  | 2.6  | 13.3 | 11.7 | 66.8 | 21.6 | 2.1   | 9.6  |      | 17.0    | 25.1    |
| Indonesia          | 1450 | 4.0  | 0.2 | 34.0 | 0.2  | 3.5 | 1.0  | 16.1 | 3.0  | 32.3 | 5.6  | 42.9 | 4.2  | 1.3   | 4.3  |      | 4.0     | 4.4     |
| Iran, Islamic Rep. | 1323 | 10.9 | 0.7 | 11.8 | 18.0 | 0.2 | 2.5  | 23.7 | 3.9  | 18.2 | 10.1 | 44.1 | 11.6 | 1.1   | 9.1  |      | 9.2     | 13.3    |
| Israel             | 1048 | 11.1 | 0.7 | 15.9 | 15.7 | 1.5 | 2.3  | 26.8 | 2.3  | 10.3 | 13.3 | 47.3 | 11.8 | 2.7   | 10.6 |      | 5.1     | 18.0    |
| Italy              | 819  | 19.3 | 0.4 | 18.6 | 14.3 | 1.1 | 1.4  | 24.7 | 2.0  | 10.9 | 7.2  | 55.2 | 19.7 | 1.7   | 5.4  |      | 17.3    | 22.2    |
| Japan              | 1192 | 20.8 | 0.0 | 34.0 | 14.8 | 0.6 | 0.6  | 5.9  | 8.1  | 9.4  | 6.0  | 70.7 | 20.8 | 0.3   | 5.7  |      | 18.2    | 23.2    |
| Jordan             | 1250 | 9.3  | 0.9 | 12.2 | 20.1 | 0.9 | 1.0  | 17.7 | 4.0  | 24.3 | 9.7  | 44.2 | 10.2 | 0.6   | 9.2  |      | 8.9     | 11.2    |
| Korea, Rep. of     | 1527 | 10.4 | 0.3 | 45.6 | 7.0  | 0.5 | 0.3  | 7.6  | 20.7 | 2.8  | 4.8  | 64.1 | 10.7 | 0.0   | 4.8  |      | 7.8     | 13.4    |
| Latvia (LSS)       | 728  | 4.3  | 0.2 | 7.1  | 51.2 | 1.0 | 1.3  | 15.0 | 1.4  | 7.1  | 11.4 | 65.1 | 4.6  | 1.8   | 9.5  |      | 2.3     | 6.9     |
| Lithuania          | 597  | 4.4  | 1.0 | 8.6  | 19.4 | 1.2 | 3.9  | 12.9 | 4.5  | 27.3 | 16.8 | 38.5 | 5.4  | 1.5   | 15.3 |      | 3.5     | 7.6     |
| Macedonia, Rep. of | 1012 | 12.0 | 4.7 | 12.9 | 6.5  | 0.2 | 11.3 | 12.8 | 1.3  | 17.9 | 20.5 | 47.6 | 16.7 | 6.9   | 13.6 |      | 16.6    | 16.8    |
| Malaysia           | 1397 | 11.9 | 0.1 | 22.8 | 15.6 | 1.0 | 1.1  | 16.6 | 2.9  | 19.6 | 8.3  | 52.6 | 12.0 | 0.4   | 7.8  |      | 8.9     | 15.9    |
| Moldova            | 930  | 4.9  | 1.1 | 9.2  | 23.2 | 0.3 | 0.6  | 23.6 | 1.6  | 14.8 | 20.7 | 39.3 | 6.0  | 3.6   | 17.1 |      | 5.5     | 6.6     |
| Morocco            | 1344 | 1.1  | 2.5 | 4.0  | 4.0  | 0.5 | 4.8  | 16.2 | 2.8  | 33.4 | 30.6 | 16.9 | 3.7  | 7.2   | 23.4 |      | 2.5     | 4.5     |
| Netherlands        | 738  | 30.4 | 0.0 | 36.3 | 12.0 | 0.3 | 0.8  | 8.6  | 1.6  | 7.2  | 2.8  | 79.8 | 30.4 | 0.4   | 2.4  |      | 29.3    | 31.6    |
| New Zealand        | 910  | 18.4 | 0.0 | 14.5 | 32.7 | 1.3 | 0.4  | 14.2 | 3.7  | 11.0 | 4.0  | 67.2 | 18.4 | 0.3   | 3.6  |      | 17.0    | 19.7    |
| Philippines        | 1638 | 4.7  | 1.7 | 11.2 | 5.7  | 0.5 | 2.2  | 9.4  | 1.4  | 42.8 | 20.3 | 26.1 | 6.4  | 1.6   | 18.7 |      | 5.8     | 6.8     |
| Romania            | 848  | 11.4 | 0.3 | 11.0 | 16.2 | 0.7 | 0.3  | 29.9 | 1.6  | 12.7 | 15.9 | 39.9 | 11.7 | 2.0   | 13.9 |      | 9.2     | 14.0    |
| Russian Federation | 1094 | 11.0 | 0.3 | 10.1 | 21.2 | 1.4 | 6.1  | 11.2 | 7.0  | 15.3 | 16.4 | 50.2 | 11.3 | 3.4   | 13.0 |      | 10.0    | 12.8    |
| Singapore          | 1227 | 35.7 | 0.4 | 34.8 | 13.1 | 1.3 | 0.9  | 4.5  | 0.8  | 6.8  | 1.7  | 86.2 | 36.1 | 0.1   | 1.6  |      | 34.5    | 37.6    |
| Slovak Republic    | 875  | 13.7 | 0.9 | 20.6 | 16.0 | 0.6 | 1.5  | 19.4 | 5.1  | 13.5 | 8.7  | 53.3 | 14.6 | 1.5   | 7.1  |      | 13.0    | 16.2    |
| Slovenia           | 783  | 18.6 | 0.1 | 17.8 | 20.0 | 0.4 | 0.2  | 25.1 | 2.1  | 8.9  | 6.7  | 57.2 | 18.7 | 0.4   | 6.3  |      | 16.1    | 21.5    |
| South Africa       | 2050 | 2.0  | 0.0 | 2.3  | 11.4 | 0.2 | 0.3  | 8.2  | 1.2  | 37.0 | 37.4 | 16.3 | 2.0  | 4.9   | 32.5 |      | 2.4     | 1.5     |
| Thailand           | 1437 | 3.1  | 0.0 | 10.2 | 26.4 | 0.1 | 2.3  | 38.0 | 2.0  | 15.1 | 2.8  | 42.1 | 3.1  | 0.4   | 2.4  |      | 2.3     | 4.2     |
| Tunisia            | 1267 | 2.2  | 0.2 | 8.5  | 21.2 | 0.7 | 0.8  | 24.2 | 14.3 | 16.2 | 11.8 | 33.5 | 2.4  | 3.9   | 7.9  |      | 1.5     | 3.4     |
| Turkey             | 1956 | 3.1  | 1.0 | 16.1 | 17.4 | 2.8 | 2.7  | 21.6 | 5.1  | 17.4 | 12.8 | 43.1 | 4.0  | 1.2   | 11.6 |      | 2.7     | 4.9     |
| United States      | 2254 | 23.2 | 0.0 | 22.2 | 26.1 | 0.8 | 0.0  | 18.8 | 1.2  | 4.2  | 3.5  | 72.3 | 23.2 | 0.5   | 3.0  |      | 22.8    | 23.5    |
| International Avg. | .    | 14.0 | 0.6 | 17.8 | 18.5 | 0.9 | 1.9  | 16.3 | 3.9  | 15.5 | 10.6 | 53.7 | 14.6 | 1.8   | 8.8  |      | 12.7    | 16.5    |

V1 = % Scoring 1 or better V2 = % Scoring 2 or better V3 = % Scoring 3 or better  
 Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.  
 Because of missing gender information, some totals may appear inconsistent

Science: Physics  
 Label: Temperature of boiling water ( S022069 - Y02 )  
 Item Type = SA Key = X

| COUNTRY            | N    | 10   | 70   | 71   | 72   | 73   | 79   | 99   | V1   | NOT REACH |      | 1.GIRL  | 2.BOY   |
|--------------------|------|------|------|------|------|------|------|------|------|-----------|------|---------|---------|
|                    |      |      |      |      |      |      |      |      |      | ED        | OMIT | % Right | % Right |
| Australia          | 994  | 52.5 | 4.7  | 31.1 | 3.0  | 1.6  | 2.9  | 4.1  | 52.5 | 1.5       | 2.6  | 54.9    | 49.8    |
| Belgium (Flemish)  | 1321 | 53.1 | 3.7  | 32.6 | 7.2  | 1.2  | 1.1  | 1.1  | 53.1 | 0.2       | 0.9  | 51.6    | 54.5    |
| Bulgaria           | 811  | 43.1 | 16.8 | 8.9  | 13.2 | 1.7  | 1.4  | 14.8 | 43.1 | 9.7       | 5.1  | 43.3    | 43.0    |
| Canada             | 2191 | 39.8 | 6.4  | 37.9 | 8.0  | 2.6  | 2.9  | 2.4  | 39.8 | 0.7       | 1.6  | 39.8    | 39.8    |
| Chile              | 1473 | 17.4 | 6.5  | 35.0 | 8.4  | 2.4  | 5.0  | 25.3 | 17.4 | 12.7      | 12.6 | 13.8    | 20.9    |
| Chinese Taipei     | 1456 | 67.5 | 4.4  | 15.7 | 6.9  | 3.3  | 0.7  | 1.4  | 67.5 | 1.1       | 0.3  | 65.2    | 69.9    |
| Cyprus             | 771  | 33.8 | 12.4 | 17.5 | 17.2 | 6.0  | 4.9  | 8.2  | 33.8 | 3.1       | 5.1  | 30.7    | 36.9    |
| Czech Republic     | 862  | 45.1 | 7.3  | 23.2 | 11.5 | 1.1  | 5.2  | 6.6  | 45.1 | 2.9       | 3.7  | 42.2    | 48.2    |
| England            | 728  | 50.4 | 7.9  | 30.5 | 2.8  | 2.6  | 2.0  | 3.8  | 50.4 | 1.7       | 2.1  | 48.3    | 52.4    |
| Finland            | 729  | 54.0 | 5.4  | 23.1 | 9.6  | 3.7  | 3.0  | 1.3  | 54.0 | 0.4       | 0.9  | 52.5    | 55.6    |
| Hong Kong, SAR     | 1295 | 56.6 | 9.6  | 20.9 | 4.9  | 3.6  | 1.5  | 2.9  | 56.6 | 1.9       | 1.0  | 56.5    | 56.7    |
| Hungary            | 792  | 53.0 | 7.6  | 23.0 | 4.4  | 1.2  | 2.1  | 8.6  | 53.0 | 5.0       | 3.6  | 53.1    | 53.0    |
| Indonesia          | 1450 | 21.3 | 8.0  | 28.8 | 15.1 | 8.6  | 12.1 | 6.1  | 21.3 | 2.6       | 3.6  | 16.4    | 25.9    |
| Iran, Islamic Rep. | 1323 | 44.2 | 8.9  | 17.3 | 5.5  | 4.5  | 8.7  | 10.9 | 44.2 | 4.6       | 6.3  | 37.4    | 48.9    |
| Israel             | 1048 | 32.0 | 6.0  | 28.9 | 8.6  | 2.7  | 7.9  | 13.8 | 32.0 | 7.4       | 6.5  | 29.3    | 34.7    |
| Italy              | 819  | 24.7 | 7.8  | 38.2 | 13.5 | 2.3  | 3.4  | 10.0 | 24.7 | 4.4       | 5.6  | 24.2    | 25.3    |
| Japan              | 1192 | 68.2 | 4.3  | 21.0 | 2.6  | 1.9  | 0.3  | 1.6  | 68.2 | 0.8       | 0.8  | 68.0    | 68.3    |
| Jordan             | 1250 | 26.2 | 10.0 | 20.7 | 11.5 | 5.7  | 17.6 | 8.3  | 26.2 | 3.9       | 4.4  | 27.9    | 24.8    |
| Korea, Rep. of     | 1527 | 63.8 | 10.9 | 14.1 | 4.7  | 2.7  | 0.7  | 3.2  | 63.8 | 1.1       | 2.1  | 62.8    | 64.6    |
| Latvia (LSS)       | 728  | 52.4 | 5.2  | 24.9 | 5.6  | 2.1  | 2.3  | 7.6  | 52.4 | 3.6       | 4.0  | 47.1    | 57.9    |
| Lithuania          | 597  | 63.5 | 8.1  | 5.6  | 9.3  | 1.4  | 2.8  | 9.2  | 63.5 | 3.8       | 5.4  | 62.7    | 64.4    |
| Macedonia, Rep. of | 1012 | 32.4 | 11.7 | 7.7  | 8.7  | 1.2  | 12.5 | 25.7 | 32.4 | 14.1      | 11.6 | 34.0    | 30.9    |
| Malaysia           | 1396 | 55.4 | 8.8  | 16.8 | 5.6  | 4.1  | 3.9  | 5.4  | 55.4 | 2.8       | 2.6  | 55.8    | 55.0    |
| Moldova            | 930  | 38.5 | 11.4 | 5.9  | 17.4 | 4.6  | 4.3  | 17.9 | 38.5 | 10.6      | 7.3  | 37.5    | 39.7    |
| Morocco            | 1343 | 14.4 | 17.5 | 4.7  | 11.1 | 18.1 | 11.4 | 22.8 | 14.4 | 14.8      | 7.9  | 15.3    | 13.8    |
| Netherlands        | 738  | 52.3 | 7.0  | 31.7 | 3.7  | 2.3  | 1.8  | 1.1  | 52.3 | 0.7       | 0.4  | 48.3    | 56.7    |
| New Zealand        | 910  | 39.2 | 6.1  | 35.2 | 6.5  | 2.7  | 4.8  | 5.4  | 39.2 | 1.6       | 3.9  | 39.0    | 39.4    |
| Philippines        | 1639 | 8.8  | 8.1  | 11.6 | 11.5 | 6.4  | 32.9 | 20.6 | 8.8  | 10.1      | 10.5 | 10.3    | 7.2     |
| Romania            | 848  | 20.9 | 16.0 | 5.2  | 8.7  | 33.6 | 3.4  | 12.3 | 20.9 | 5.8       | 6.4  | 23.8    | 18.2    |
| Russian Federation | 1094 | 50.1 | 11.8 | 13.1 | 9.3  | 1.5  | 1.5  | 12.7 | 50.1 | 7.1       | 5.6  | 49.2    | 51.1    |
| Singapore          | 1227 | 79.0 | 5.2  | 8.4  | 1.9  | 4.1  | 1.0  | 0.5  | 79.0 | 0.3       | 0.2  | 80.7    | 77.3    |
| Slovak Republic    | 875  | 55.4 | 7.8  | 19.3 | 5.5  | 0.9  | 3.1  | 7.9  | 55.4 | 3.5       | 4.4  | 55.8    | 55.1    |
| Slovenia           | 783  | 40.3 | 13.1 | 31.1 | 8.3  | 2.9  | 1.8  | 2.6  | 40.3 | 1.3       | 1.3  | 36.2    | 44.7    |
| South Africa       | 2050 | 7.1  | 14.3 | 8.6  | 12.7 | 15.6 | 24.0 | 17.5 | 7.1  | 14.2      | 3.3  | 7.7     | 6.5     |
| Thailand           | 1437 | 35.5 | 8.5  | 32.2 | 8.5  | 6.4  | 5.4  | 3.6  | 35.5 | 1.7       | 1.8  | 34.0    | 37.2    |
| Tunisia            | 1257 | 7.7  | 8.4  | 38.4 | 19.1 | 9.6  | 3.7  | 13.0 | 7.7  | 7.4       | 5.7  | 6.2     | 9.5     |
| Turkey             | 1956 | 21.5 | 7.6  | 20.9 | 19.3 | 5.0  | 7.5  | 18.2 | 21.5 | 7.2       | 11.0 | 20.6    | 22.1    |
| United States      | 2254 | 20.1 | 5.7  | 51.3 | 12.7 | 3.2  | 2.4  | 4.6  | 20.1 | 2.2       | 2.4  | 18.4    | 22.0    |
| International Avg. | .    | 40.6 | 8.7  | 22.1 | 9.1  | 4.9  | 5.6  | 9.0  | 40.6 | 4.7       | 4.3  | 39.5    | 41.6    |

V1 = % Scoring 1 or better V2 = % Scoring 2 or better V3 = % Scoring 3 or better  
 Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.  
 Because of missing gender information, some totals may appear inconsistent

Science: Scientific Inquiry and the Nature of Science  
 Label: Freezing salt water experiment ( S022268 - Y03 )  
 Item Type = SA Key = X

| COUNTRY            | N    | NOT REACH |      |      |      |      |      |      |      | 1.GIRL |      | 2.BOY   |         |
|--------------------|------|-----------|------|------|------|------|------|------|------|--------|------|---------|---------|
|                    |      | 10        | 11   | 19   | 70   | 71   | 79   | 99   | V1   | ED     | OMIT | % Right | % Right |
| Australia          | 994  | 41.5      | 16.3 | 1.1  | 8.0  | 2.1  | 19.8 | 11.2 | 58.9 | 3.1    | 8.1  | 64.6    | 52.4    |
| Belgium (Flemish)  | 1321 | 13.1      | 41.7 | 1.4  | 4.7  | 25.2 | 11.6 | 2.2  | 56.3 | 0.3    | 1.9  | 53.8    | 58.8    |
| Bulgaria           | 811  | 5.4       | 26.9 | 2.3  | 2.7  | 20.9 | 8.5  | 33.3 | 34.6 | 13.0   | 20.3 | 30.8    | 38.7    |
| Canada             | 2191 | 23.0      | 30.2 | 5.6  | 7.3  | 8.8  | 18.8 | 6.3  | 58.8 | 1.6    | 4.6  | 57.3    | 60.4    |
| Chile              | 1471 | 5.6       | 16.6 | 0.5  | 13.1 | 3.2  | 21.7 | 39.5 | 22.6 | 21.1   | 18.4 | 24.6    | 20.6    |
| Chinese Taipei     | 1456 | 4.3       | 13.3 | 1.0  | 53.9 | 0.3  | 22.1 | 5.1  | 18.6 | 1.3    | 3.8  | 20.0    | 17.2    |
| Cyprus             | 765  | 12.4      | 18.4 | 0.6  | 15.2 | 10.3 | 20.4 | 22.7 | 31.4 | 6.8    | 15.9 | 30.9    | 31.9    |
| Czech Republic     | 863  | 5.2       | 46.7 | 2.2  | 5.5  | 8.4  | 20.0 | 12.0 | 54.1 | 4.9    | 7.1  | 53.1    | 55.1    |
| England            | 728  | 28.0      | 30.7 | 2.5  | 4.0  | 3.2  | 19.4 | 12.1 | 61.2 | 3.5    | 8.7  | 61.2    | 61.2    |
| Finland            | 729  | 14.6      | 49.9 | 3.2  | 9.9  | 2.3  | 15.4 | 4.8  | 67.6 | 1.0    | 3.7  | 70.7    | 64.3    |
| Hong Kong, SAR     | 1295 | 5.1       | 14.1 | 1.4  | 33.3 | 3.7  | 29.3 | 13.1 | 20.6 | 2.5    | 10.6 | 23.2    | 18.1    |
| Hungary            | 792  | 9.8       | 41.3 | 3.7  | 6.6  | 6.7  | 16.9 | 15.0 | 54.7 | 6.8    | 8.2  | 50.6    | 58.6    |
| Indonesia          | 1448 | 12.2      | 6.2  | 0.7  | 13.8 | 6.5  | 49.7 | 10.9 | 19.1 | 5.3    | 5.6  | 17.2    | 20.8    |
| Iran, Islamic Rep. | 1323 | 2.5       | 29.3 | 2.0  | 12.0 | 12.5 | 18.6 | 23.1 | 33.8 | 8.6    | 14.6 | 34.5    | 33.2    |
| Israel             | 1048 | 15.5      | 11.0 | 4.3  | 16.3 | 3.7  | 20.7 | 28.6 | 30.8 | 12.1   | 16.5 | 31.1    | 30.5    |
| Italy              | 819  | 15.4      | 17.2 | 4.3  | 6.5  | 15.9 | 22.6 | 18.2 | 36.9 | 7.1    | 11.1 | 35.4    | 38.4    |
| Japan              | 1192 | 17.7      | 11.0 | 0.3  | 42.3 | 3.2  | 18.6 | 6.9  | 29.0 | 1.1    | 5.8  | 26.8    | 30.9    |
| Jordan             | 1241 | 5.4       | 17.4 | 2.3  | 11.9 | 6.3  | 39.7 | 17.0 | 25.2 | 6.6    | 10.4 | 26.3    | 24.2    |
| Korea, Rep. of     | 1522 | 7.5       | 38.6 | 1.1  | 15.4 | 10.5 | 17.4 | 9.5  | 47.3 | 2.2    | 7.3  | 42.9    | 51.5    |
| Latvia (LSS)       | 727  | 21.4      | 31.9 | 2.4  | 9.4  | 5.8  | 12.1 | 17.0 | 55.6 | 6.0    | 11.0 | 54.5    | 56.8    |
| Lithuania          | 597  | 19.5      | 19.7 | 4.5  | 3.4  | 13.6 | 13.8 | 25.5 | 43.8 | 6.9    | 18.6 | 41.1    | 46.7    |
| Macedonia, Rep. of | 1012 | 13.4      | 16.9 | 6.6  | 4.8  | 8.1  | 12.7 | 37.5 | 36.8 | 22.0   | 15.5 | 36.7    | 37.0    |
| Malaysia           | 1396 | 6.3       | 17.2 | 3.7  | 22.0 | 3.7  | 28.9 | 18.3 | 27.2 | 4.8    | 13.5 | 27.2    | 27.2    |
| Moldova            | 929  | 16.2      | 30.9 | 3.0  | 3.0  | 6.5  | 11.5 | 28.9 | 50.1 | 14.1   | 14.8 | 50.0    | 50.2    |
| Morocco            | 1339 | 5.4       | 7.7  | 1.9  | 2.8  | 3.9  | 41.3 | 37.1 | 14.9 | 19.7   | 17.3 | 17.0    | 13.5    |
| Netherlands        | 737  | 27.6      | 38.1 | 1.6  | 2.2  | 12.3 | 14.7 | 3.5  | 67.4 | 0.8    | 2.6  | 69.1    | 65.5    |
| New Zealand        | 910  | 31.8      | 19.5 | 1.0  | 8.3  | 3.6  | 23.2 | 12.6 | 52.3 | 4.6    | 7.9  | 58.1    | 46.9    |
| Philippines        | 1639 | 2.8       | 7.5  | 2.5  | 4.7  | 0.7  | 43.3 | 38.5 | 12.8 | 17.4   | 21.2 | 16.1    | 9.1     |
| Romania            | 846  | 9.7       | 29.2 | 3.4  | 5.7  | 16.9 | 11.1 | 24.0 | 42.3 | 9.7    | 14.3 | 40.9    | 43.7    |
| Russian Federation | 1094 | 27.9      | 28.2 | 3.4  | 6.6  | 2.7  | 8.6  | 22.6 | 59.6 | 10.3   | 12.3 | 61.1    | 57.9    |
| Singapore          | 1227 | 18.3      | 19.5 | 2.6  | 38.6 | 2.1  | 15.6 | 3.4  | 40.3 | 0.5    | 2.9  | 41.7    | 38.9    |
| Slovak Republic    | 875  | 56.5      | 14.3 | 2.2  | 0.9  | 2.6  | 7.3  | 16.3 | 72.9 | 5.6    | 10.7 | 74.1    | 71.8    |
| Slovenia           | 783  | 7.7       | 47.1 | 3.7  | 4.5  | 17.1 | 9.7  | 10.1 | 58.5 | 2.0    | 8.1  | 56.9    | 60.3    |
| South Africa       | 2049 | 1.4       | 6.2  | 0.6  | 4.0  | 1.3  | 40.2 | 46.4 | 8.1  | 16.7   | 29.7 | 9.8     | 6.2     |
| Thailand           | 1437 | 7.3       | 4.7  | 0.9  | 17.9 | 1.7  | 57.6 | 9.8  | 12.8 | 3.4    | 6.5  | 13.1    | 12.5    |
| Tunisia            | 1261 | 1.9       | 1.7  | 10.0 | 16.3 | 10.9 | 36.4 | 22.8 | 13.6 | 11.7   | 11.0 | 14.6    | 12.5    |
| Turkey             | 1956 | 6.2       | 7.1  | 5.5  | 3.3  | 4.4  | 39.6 | 34.0 | 18.8 | 14.7   | 19.3 | 21.7    | 16.7    |
| United States      | 2254 | 33.6      | 24.2 | 0.6  | 7.1  | 6.5  | 20.2 | 7.7  | 58.4 | 3.5    | 4.2  | 58.3    | 58.5    |
| International Avg. | .    | 14.7      | 22.3 | 2.6  | 11.8 | 7.3  | 22.6 | 18.6 | 39.7 | 7.5    | 11.2 | 39.9    | 39.4    |

V1 = % Scoring 1 or better V2 = % Scoring 2 or better V3 = % Scoring 3 or better  
 Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.  
 Because of missing gender information, some totals may appear inconsistent

Science: Chemistry  
 Label: Galvanization of steel ( S022217A - Z01A )  
 Item Type = EX Key = X

| COUNTRY            | N    | 10   | 70   | 71  | 72   | 79   | 99   | V1   | NOT   | 1.GIRL | 2.BOY |         |
|--------------------|------|------|------|-----|------|------|------|------|-------|--------|-------|---------|
|                    |      |      |      |     |      |      |      |      | REACH |        |       | % Right |
| Australia          | 491  | 56.2 | 15.7 | 3.4 | 3.2  | 10.4 | 11.1 | 56.2 | 0.8   | 10.3   | 50.0  | 63.7    |
| Belgium (Flemish)  | 663  | 53.6 | 9.2  | 3.9 | 5.2  | 19.4 | 8.8  | 53.6 | 0.0   | 8.8    | 46.7  | 60.6    |
| Bulgaria           | 404  | 35.5 | 4.9  | 1.6 | 1.3  | 7.3  | 49.5 | 35.5 | 9.6   | 39.9   | 26.2  | 44.8    |
| Canada             | 1094 | 56.0 | 10.6 | 3.7 | 3.9  | 14.8 | 11.0 | 56.0 | 0.3   | 10.7   | 52.4  | 60.3    |
| Chile              | 750  | 16.2 | 8.6  | 1.2 | 3.7  | 18.2 | 52.0 | 16.2 | 9.2   | 42.8   | 13.5  | 19.1    |
| Chinese Taipei     | 724  | 77.0 | 3.4  | 0.9 | 3.0  | 6.4  | 9.2  | 77.0 | 0.6   | 8.6    | 75.2  | 79.0    |
| Cyprus             | 384  | 19.8 | 8.9  | 3.3 | 6.0  | 19.9 | 42.1 | 19.8 | 1.3   | 40.8   | 16.5  | 22.5    |
| Czech Republic     | 425  | 38.2 | 9.3  | 1.3 | 1.5  | 14.2 | 35.5 | 38.2 | 2.4   | 33.1   | 23.8  | 51.2    |
| England            | 363  | 56.6 | 12.1 | 5.8 | 2.4  | 8.4  | 14.7 | 56.6 | 2.4   | 12.3   | 50.2  | 62.6    |
| Finland            | 368  | 56.5 | 16.3 | 2.9 | 0.7  | 13.7 | 9.9  | 56.5 | 0.6   | 9.3    | 41.2  | 71.0    |
| Hong Kong, SAR     | 646  | 55.5 | 13.6 | 1.9 | 2.7  | 12.5 | 13.8 | 55.5 | 1.0   | 12.8   | 54.6  | 56.4    |
| Hungary            | 392  | 54.0 | 4.9  | 3.0 | 6.2  | 5.5  | 26.5 | 54.0 | 2.0   | 24.5   | 49.6  | 57.9    |
| Indonesia          | 724  | 27.9 | 30.1 | 1.2 | 3.0  | 30.6 | 7.1  | 27.9 | 1.0   | 6.1    | 22.1  | 33.3    |
| Iran, Islamic Rep. | 664  | 26.8 | 1.9  | 0.1 | 0.0  | 30.4 | 40.8 | 26.8 | 2.3   | 38.5   | 19.4  | 31.7    |
| Israel             | 524  | 22.6 | 14.6 | 1.4 | 4.9  | 15.6 | 40.9 | 22.6 | 6.3   | 34.6   | 25.1  | 20.4    |
| Italy              | 412  | 31.4 | 9.5  | 4.4 | 1.8  | 16.7 | 36.3 | 31.4 | 2.4   | 33.9   | 28.2  | 34.3    |
| Japan              | 590  | 38.0 | 27.8 | 0.0 | 1.1  | 16.6 | 16.5 | 38.0 | 2.0   | 14.5   | 26.9  | 48.7    |
| Jordan             | 624  | 44.5 | 3.4  | 0.5 | 0.7  | 22.9 | 28.0 | 44.5 | 2.7   | 25.3   | 47.3  | 41.9    |
| Korea, Rep. of     | 763  | 63.1 | 16.3 | 0.5 | 1.9  | 8.7  | 9.6  | 63.1 | 0.5   | 9.1    | 62.7  | 63.5    |
| Latvia (LSS)       | 361  | 28.6 | 13.0 | 1.1 | 4.2  | 10.8 | 42.3 | 28.6 | 5.6   | 36.7   | 17.5  | 39.4    |
| Lithuania          | 293  | 16.1 | 11.9 | 1.6 | 2.4  | 20.2 | 47.8 | 16.1 | 4.7   | 43.1   | 5.8   | 27.5    |
| Macedonia, Rep. of | 503  | 31.9 | 1.9  | 1.6 | 0.3  | 11.9 | 52.4 | 31.9 | 10.9  | 41.5   | 33.1  | 30.6    |
| Malaysia           | 699  | 45.9 | 16.2 | 2.2 | 3.9  | 13.3 | 18.6 | 45.9 | 1.3   | 17.3   | 44.6  | 47.5    |
| Moldova            | 461  | 11.1 | 10.6 | 2.5 | 6.9  | 14.5 | 54.4 | 11.1 | 9.5   | 44.9   | 8.9   | 13.9    |
| Morocco            | 674  | 2.6  | 1.1  | 0.7 | 1.1  | 25.6 | 68.8 | 2.6  | 13.6  | 55.2   | 1.5   | 3.3     |
| Netherlands        | 362  | 31.2 | 18.7 | 2.6 | 15.7 | 26.3 | 5.5  | 31.2 | 0.5   | 5.0    | 27.2  | 35.6    |
| New Zealand        | 454  | 48.4 | 16.9 | 4.0 | 2.6  | 13.8 | 14.2 | 48.4 | 1.8   | 12.4   | 44.7  | 52.1    |
| Philippines        | 836  | 10.5 | 5.6  | 1.2 | 8.4  | 32.0 | 42.3 | 10.5 | 7.3   | 35.1   | 11.2  | 9.7     |
| Romania            | 430  | 32.1 | 3.6  | 0.5 | 0.9  | 13.8 | 49.1 | 32.1 | 9.1   | 40.0   | 29.6  | 34.5    |
| Russian Federation | 549  | 28.2 | 4.0  | 4.8 | 1.0  | 10.9 | 51.2 | 28.2 | 5.2   | 46.0   | 26.5  | 30.3    |
| Singapore          | 620  | 66.0 | 11.3 | 1.8 | 0.7  | 13.4 | 6.8  | 66.0 | 0.3   | 6.5    | 72.0  | 60.4    |
| Slovak Republic    | 442  | 48.5 | 7.9  | 1.1 | 3.2  | 6.6  | 32.7 | 48.5 | 3.1   | 29.7   | 42.2  | 54.7    |
| Slovenia           | 390  | 39.8 | 7.2  | 2.9 | 2.8  | 20.9 | 26.4 | 39.8 | 0.7   | 25.6   | 30.9  | 49.1    |
| South Africa       | 1023 | 5.5  | 3.7  | 0.5 | 9.3  | 34.6 | 46.3 | 5.5  | 8.4   | 37.9   | 4.7   | 6.5     |
| Thailand           | 722  | 43.0 | 17.3 | 1.7 | 8.2  | 19.9 | 9.9  | 43.0 | 1.5   | 8.4    | 38.1  | 48.6    |
| Tunisia            | 637  | 24.2 | 3.4  | 2.5 | 4.9  | 27.5 | 37.5 | 24.2 | 4.6   | 32.9   | 20.9  | 28.0    |
| Turkey             | 980  | 21.5 | 4.1  | 3.8 | 10.3 | 20.7 | 39.6 | 21.5 | 3.5   | 36.1   | 20.4  | 22.2    |
| United States      | 1112 | 46.5 | 13.7 | 5.4 | 1.4  | 20.0 | 13.0 | 46.5 | 0.9   | 12.1   | 40.4  | 52.7    |
| International Avg. | .    | 37.1 | 10.3 | 2.2 | 3.7  | 17.1 | 29.5 | 37.1 | 3.7   | 25.8   | 32.9  | 41.3    |

V1 = % Scoring 1 or better V2 = % Scoring 2 or better V3 = % Scoring 3 or better  
 Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.  
 Because of missing gender information, some totals may appear inconsistent

Science: Chemistry  
 Label: Galvanization of steel ( S022217B - Z01B )  
 Item Type = EX Key = X

| COUNTRY            | N    | NOT REACHED |      |     |      |      |     |      |      |      |      | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |      |
|--------------------|------|-------------|------|-----|------|------|-----|------|------|------|------|------|-------------------|------------------|------|
|                    |      | 10          | 11   | 12  | 13   | 14   | 19  | 70   | 79   | 99   | V1   |      |                   |                  |      |
| Australia          | 491  | 2.0         | 12.2 | 6.5 | 3.6  | 33.3 | 1.0 | 1.3  | 19.5 | 20.6 | 58.5 | 4.5  | 16.1              | 60.4             | 56.3 |
| Belgium (Flemish)  | 663  | 5.8         | 25.0 | 8.0 | 5.0  | 8.9  | 0.7 | 2.7  | 26.1 | 17.7 | 53.4 | 0.7  | 17.0              | 53.6             | 53.3 |
| Bulgaria           | 404  | 3.3         | 16.4 | 0.0 | 1.0  | 0.9  | 5.1 | 0.5  | 7.8  | 65.1 | 26.6 | 20.4 | 44.7              | 18.3             | 34.8 |
| Canada             | 1094 | 4.5         | 13.4 | 5.4 | 5.7  | 30.6 | 2.2 | 1.0  | 19.0 | 18.1 | 61.9 | 1.6  | 16.6              | 62.6             | 60.9 |
| Chile              | 750  | 0.2         | 2.4  | 0.5 | 2.9  | 14.9 | 0.3 | 1.8  | 13.8 | 63.1 | 21.3 | 20.5 | 42.6              | 20.3             | 22.4 |
| Chinese Taipei     | 724  | 1.6         | 22.2 | 2.7 | 2.9  | 28.5 | 1.0 | 1.4  | 22.8 | 16.9 | 58.9 | 2.2  | 14.7              | 61.5             | 56.0 |
| Cyprus             | 383  | 1.6         | 6.5  | 2.6 | 4.5  | 2.6  | 3.6 | 13.6 | 21.1 | 43.8 | 21.4 | 6.3  | 37.6              | 17.8             | 24.5 |
| Czech Republic     | 425  | 4.3         | 17.9 | 1.7 | 2.3  | 1.2  | 0.0 | 7.0  | 16.0 | 49.6 | 27.4 | 4.3  | 45.3              | 22.7             | 31.6 |
| England            | 363  | 2.7         | 21.7 | 2.5 | 0.9  | 26.0 | 0.3 | 1.6  | 16.4 | 27.9 | 54.1 | 4.8  | 23.1              | 47.9             | 59.9 |
| Finland            | 368  | 2.8         | 9.2  | 3.5 | 9.6  | 28.6 | 3.0 | 2.8  | 19.0 | 21.4 | 56.7 | 1.9  | 19.5              | 51.8             | 61.4 |
| Hong Kong, SAR     | 645  | 0.5         | 9.6  | 3.9 | 4.1  | 25.2 | 0.9 | 8.5  | 17.9 | 29.5 | 44.1 | 3.5  | 26.0              | 46.4             | 41.9 |
| Hungary            | 392  | 2.5         | 37.0 | 3.1 | 2.9  | 4.8  | 0.9 | 1.4  | 10.0 | 37.4 | 51.2 | 6.4  | 31.0              | 46.2             | 55.0 |
| Indonesia          | 724  | 1.1         | 12.8 | 0.9 | 1.5  | 24.5 | 0.3 | 3.2  | 34.6 | 21.0 | 41.1 | 2.9  | 18.1              | 41.6             | 40.7 |
| Iran, Islamic Rep. | 664  | 5.2         | 2.2  | 0.3 | 1.2  | 0.0  | 0.0 | 3.7  | 21.5 | 65.9 | 8.9  | 10.9 | 55.0              | 7.2              | 10.0 |
| Israel             | 524  | 3.1         | 12.3 | 1.6 | 1.7  | 4.8  | 1.4 | 1.3  | 16.7 | 57.2 | 24.8 | 16.2 | 41.0              | 21.7             | 27.7 |
| Italy              | 412  | 3.8         | 9.3  | 1.0 | 1.8  | 3.8  | 1.7 | 7.1  | 16.9 | 54.7 | 21.3 | 6.8  | 47.9              | 17.0             | 25.3 |
| Japan              | 590  | 2.3         | 43.2 | 0.9 | 12.3 | 1.3  | 0.0 | 0.5  | 16.6 | 22.9 | 60.1 | 3.7  | 19.2              | 59.6             | 60.5 |
| Jordan             | 624  | 4.3         | 17.3 | 1.3 | 1.7  | 0.6  | 0.3 | 3.2  | 43.7 | 27.5 | 25.6 | 7.0  | 20.5              | 25.3             | 25.9 |
| Korea, Rep. of     | 763  | 4.7         | 32.3 | 4.4 | 4.5  | 10.6 | 4.4 | 13.5 | 10.7 | 15.0 | 60.8 | 2.7  | 12.3              | 62.8             | 59.0 |
| Latvia (LSS)       | 361  | 1.1         | 11.0 | 1.3 | 5.0  | 10.3 | 0.9 | 0.0  | 12.8 | 57.5 | 29.7 | 13.6 | 44.0              | 24.5             | 34.8 |
| Lithuania          | 293  | 4.8         | 25.3 | 0.0 | 1.2  | 0.0  | 1.0 | 11.4 | 8.0  | 48.3 | 32.3 | 12.2 | 36.0              | 28.4             | 36.6 |
| Macedonia, Rep. of | 503  | 10.1        | 3.7  | 0.9 | 0.4  | 0.6  | 0.6 | 2.1  | 8.2  | 73.4 | 16.3 | 22.8 | 50.7              | 17.1             | 15.6 |
| Malaysia           | 699  | 2.8         | 15.2 | 1.5 | 2.4  | 15.6 | 5.0 | 7.1  | 17.2 | 33.2 | 42.5 | 5.6  | 27.6              | 44.0             | 40.7 |
| Moldova            | 462  | 0.9         | 10.2 | 1.2 | 1.4  | 0.2  | 0.8 | 5.1  | 17.8 | 62.4 | 14.6 | 17.2 | 45.2              | 13.3             | 16.3 |
| Morocco            | 674  | 0.5         | 0.5  | 0.0 | 0.0  | 0.2  | 0.4 | 2.3  | 20.8 | 75.3 | 1.5  | 27.2 | 48.2              | 1.5              | 1.6  |
| Netherlands        | 362  | 8.7         | 32.2 | 6.0 | 9.1  | 9.1  | 0.8 | 0.6  | 21.9 | 11.7 | 65.9 | 2.4  | 9.3               | 64.1             | 67.9 |
| New Zealand        | 454  | 5.6         | 24.6 | 2.7 | 4.6  | 7.4  | 0.2 | 9.9  | 20.0 | 25.1 | 45.0 | 4.8  | 20.3              | 50.0             | 40.1 |
| Philippines        | 836  | 0.4         | 2.3  | 0.1 | 1.8  | 1.3  | 0.8 | 1.4  | 41.3 | 50.6 | 6.6  | 13.9 | 36.8              | 7.7              | 5.6  |
| Romania            | 430  | 1.6         | 11.2 | 0.0 | 0.5  | 1.8  | 1.3 | 1.3  | 16.9 | 65.3 | 16.4 | 18.5 | 46.9              | 15.4             | 17.4 |
| Russian Federation | 549  | 0.1         | 14.9 | 1.2 | 0.8  | 2.1  | 0.0 | 0.3  | 16.4 | 64.1 | 19.1 | 10.3 | 53.8              | 18.7             | 19.6 |
| Singapore          | 620  | 1.4         | 22.1 | 1.4 | 10.9 | 19.7 | 8.7 | 3.8  | 16.1 | 16.0 | 64.1 | 1.3  | 14.7              | 65.9             | 62.4 |
| Slovak Republic    | 442  | 1.7         | 33.2 | 1.2 | 2.5  | 3.3  | 0.6 | 1.7  | 9.8  | 46.0 | 42.5 | 6.7  | 39.3              | 40.0             | 44.9 |
| Slovenia           | 390  | 1.5         | 14.1 | 3.3 | 4.1  | 3.9  | 1.7 | 3.8  | 19.0 | 48.6 | 28.6 | 3.5  | 45.0              | 26.6             | 30.7 |
| South Africa       | 1023 | 0.1         | 3.5  | 0.4 | 0.4  | 1.6  | 0.4 | 5.6  | 44.2 | 44.0 | 6.2  | 15.0 | 28.9              | 7.6              | 4.6  |
| Thailand           | 722  | 4.0         | 50.4 | 0.7 | 0.8  | 0.3  | 0.5 | 0.0  | 28.0 | 15.2 | 56.8 | 4.8  | 10.5              | 58.4             | 54.9 |
| Tunisia            | 634  | 5.7         | 11.4 | 0.5 | 6.1  | 0.0  | 2.1 | 23.6 | 17.6 | 33.1 | 25.7 | 9.2  | 23.9              | 23.0             | 28.9 |
| Turkey             | 980  | 3.3         | 8.0  | 1.0 | 0.8  | 8.8  | 0.4 | 6.7  | 14.4 | 56.5 | 22.4 | 14.0 | 42.5              | 23.9             | 21.4 |
| United States      | 1112 | 1.8         | 8.1  | 5.3 | 3.9  | 25.3 | 1.8 | 1.8  | 33.2 | 18.8 | 46.1 | 3.9  | 14.9              | 48.7             | 43.5 |
| International Avg. | .    | 3.0         | 16.4 | 2.1 | 3.3  | 9.5  | 1.4 | 4.3  | 19.8 | 40.0 | 35.8 | 8.8  | 31.2              | 34.8             | 36.7 |

V1 = % Scoring 1 or better V2 = % Scoring 2 or better V3 = % Scoring 3 or better  
 Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.  
 Because of missing gender information, some totals may appear inconsistent

Science: Chemistry  
 Label: Galvanization of steel ( S022217C - Z01C )  
 Item Type = EX Key = X

| COUNTRY            | N    | NOT REACHED |      |     |      |      |      |     |      |      |      | OMIT | 1.GIRL<br>% Right | 2.BOY<br>% Right |      |
|--------------------|------|-------------|------|-----|------|------|------|-----|------|------|------|------|-------------------|------------------|------|
|                    |      | 10          | 11   | 12  | 13   | 14   | 19   | 70  | 79   | 99   | V1   |      |                   |                  |      |
| Australia          | 491  | 4.1         | 5.3  | 7.5 | 4.5  | 11.7 | 2.9  | 0.2 | 35.8 | 28.0 | 35.9 | 4.5  | 23.6              | 36.3             | 35.4 |
| Belgium (Flemish)  | 663  | 9.7         | 9.0  | 7.6 | 4.7  | 7.0  | 1.2  | 2.3 | 32.5 | 26.0 | 39.2 | 0.7  | 25.2              | 35.1             | 43.3 |
| Bulgaria           | 404  | 7.2         | 6.2  | 0.9 | 1.2  | 1.2  | 4.1  | 0.2 | 5.1  | 73.9 | 20.8 | 20.4 | 53.6              | 15.6             | 26.0 |
| Canada             | 1094 | 7.4         | 6.3  | 6.1 | 6.0  | 12.9 | 4.1  | 1.0 | 29.7 | 26.5 | 42.8 | 1.6  | 24.9              | 41.1             | 44.9 |
| Chile              | 750  | 1.1         | 0.8  | 1.2 | 2.5  | 3.7  | 1.3  | 1.9 | 16.9 | 70.6 | 10.6 | 20.5 | 50.1              | 10.3             | 10.8 |
| Chinese Taipei     | 724  | 3.6         | 6.9  | 4.8 | 3.5  | 8.3  | 1.0  | 0.9 | 48.1 | 22.9 | 28.1 | 2.2  | 20.7              | 28.1             | 28.1 |
| Cyprus             | 384  | 3.8         | 5.3  | 4.6 | 4.9  | 1.3  | 3.0  | 2.6 | 20.8 | 53.7 | 22.9 | 6.2  | 47.5              | 18.4             | 26.6 |
| Czech Republic     | 425  | 9.5         | 9.5  | 2.3 | 2.2  | 0.6  | 0.6  | 1.1 | 13.9 | 60.3 | 24.7 | 4.3  | 56.0              | 21.2             | 27.8 |
| England            | 363  | 10.3        | 5.6  | 5.7 | 2.0  | 6.3  | 1.3  | 1.1 | 32.9 | 34.8 | 31.3 | 4.8  | 30.0              | 22.4             | 39.6 |
| Finland            | 368  | 5.1         | 8.1  | 5.7 | 6.1  | 8.6  | 4.8  | 0.2 | 29.8 | 31.6 | 38.4 | 1.9  | 29.7              | 36.3             | 40.3 |
| Hong Kong, SAR     | 644  | 3.0         | 7.1  | 4.2 | 3.6  | 14.2 | 1.3  | 2.7 | 26.5 | 37.4 | 33.4 | 3.5  | 33.9              | 32.6             | 34.1 |
| Hungary            | 392  | 5.1         | 11.3 | 3.2 | 4.9  | 2.7  | 1.7  | 0.0 | 23.0 | 48.0 | 29.0 | 6.4  | 41.5              | 25.3             | 32.0 |
| Indonesia          | 724  | 0.7         | 6.0  | 1.5 | 3.1  | 6.7  | 0.6  | 1.6 | 50.3 | 29.5 | 18.6 | 2.9  | 26.6              | 18.5             | 18.8 |
| Iran, Islamic Rep. | 664  | 1.2         | 1.8  | 0.0 | 0.8  | 0.0  | 0.2  | 1.6 | 20.3 | 74.2 | 4.0  | 10.9 | 63.3              | 1.8              | 5.5  |
| Israel             | 524  | 3.6         | 6.2  | 1.1 | 1.2  | 1.9  | 1.2  | 0.9 | 18.3 | 65.5 | 15.3 | 16.2 | 49.3              | 10.1             | 20.0 |
| Italy              | 412  | 5.5         | 4.3  | 1.9 | 1.4  | 1.6  | 2.6  | 2.0 | 19.5 | 61.3 | 17.2 | 6.8  | 54.4              | 14.1             | 20.1 |
| Japan              | 590  | 3.1         | 16.7 | 2.6 | 17.8 | 1.3  | 0.0  | 0.8 | 25.9 | 31.8 | 41.5 | 3.7  | 28.1              | 39.6             | 43.3 |
| Jordan             | 624  | 4.6         | 10.7 | 2.8 | 2.1  | 0.6  | 1.5  | 2.1 | 38.3 | 37.3 | 22.3 | 7.0  | 30.3              | 23.3             | 21.4 |
| Korea, Rep. of     | 763  | 9.6         | 10.7 | 6.9 | 7.1  | 15.7 | 9.8  | 1.4 | 18.4 | 20.3 | 59.8 | 2.7  | 17.7              | 57.7             | 61.8 |
| Latvia (LSS)       | 361  | 2.0         | 5.1  | 0.9 | 4.9  | 5.3  | 2.7  | 0.0 | 14.8 | 64.3 | 20.9 | 13.6 | 50.7              | 18.8             | 22.9 |
| Lithuania          | 293  | 0.3         | 9.1  | 0.0 | 1.4  | 0.0  | 1.2  | 1.4 | 8.5  | 78.1 | 12.0 | 12.2 | 65.8              | 11.9             | 12.2 |
| Macedonia, Rep. of | 503  | 7.8         | 1.3  | 0.7 | 0.4  | 0.4  | 0.7  | 1.4 | 7.5  | 79.7 | 11.4 | 22.8 | 56.9              | 11.5             | 11.4 |
| Malaysia           | 699  | 3.9         | 9.7  | 1.8 | 3.7  | 5.7  | 4.5  | 1.8 | 28.0 | 40.9 | 29.3 | 5.6  | 35.3              | 32.7             | 25.3 |
| Moldova            | 462  | 0.7         | 7.4  | 0.6 | 2.0  | 0.9  | 1.7  | 3.0 | 13.6 | 70.2 | 13.3 | 17.2 | 52.9              | 11.1             | 16.0 |
| Morocco            | 674  | 1.0         | 0.9  | 2.5 | 0.2  | 0.0  | 1.5  | 1.3 | 20.7 | 72.0 | 6.0  | 27.2 | 44.8              | 4.6              | 7.0  |
| Netherlands        | 362  | 12.6        | 16.3 | 1.4 | 6.8  | 5.0  | 4.0  | 0.0 | 35.2 | 18.7 | 46.1 | 2.4  | 16.3              | 45.3             | 47.1 |
| New Zealand        | 454  | 8.7         | 9.5  | 5.0 | 7.7  | 7.5  | 2.5  | 2.1 | 25.0 | 32.1 | 40.9 | 4.8  | 27.3              | 48.2             | 33.7 |
| Philippines        | 836  | 0.6         | 1.8  | 0.0 | 1.6  | 0.8  | 0.6  | 1.9 | 34.8 | 57.9 | 5.4  | 13.9 | 44.0              | 5.7              | 5.2  |
| Romania            | 430  | 1.5         | 5.5  | 1.9 | 0.5  | 0.2  | 1.0  | 2.1 | 15.9 | 71.4 | 10.5 | 18.5 | 53.0              | 13.5             | 7.6  |
| Russian Federation | 549  | 0.0         | 3.8  | 1.2 | 1.4  | 0.6  | 0.1  | 0.2 | 18.7 | 74.0 | 7.1  | 10.3 | 63.7              | 7.0              | 7.1  |
| Singapore          | 620  | 5.6         | 12.0 | 2.6 | 11.3 | 6.7  | 12.0 | 1.6 | 26.1 | 22.0 | 50.3 | 1.3  | 20.7              | 51.5             | 49.1 |
| Slovak Republic    | 442  | 5.6         | 10.6 | 5.4 | 1.5  | 2.9  | 5.3  | 0.0 | 12.1 | 56.6 | 31.3 | 6.7  | 49.8              | 25.3             | 37.3 |
| Slovenia           | 390  | 5.4         | 10.3 | 2.4 | 3.3  | 2.5  | 0.8  | 0.5 | 17.1 | 57.7 | 24.8 | 3.5  | 54.2              | 18.9             | 30.8 |
| South Africa       | 1023 | 0.3         | 2.3  | 0.3 | 1.5  | 0.9  | 0.5  | 4.9 | 39.8 | 49.5 | 5.8  | 15.0 | 34.5              | 5.5              | 6.2  |
| Thailand           | 722  | 9.2         | 22.9 | 3.5 | 3.2  | 1.0  | 2.5  | 0.0 | 39.7 | 18.0 | 42.3 | 4.8  | 13.2              | 46.4             | 37.6 |
| Tunisia            | 636  | 5.2         | 11.3 | 0.3 | 4.3  | 0.0  | 2.4  | 6.6 | 22.3 | 47.6 | 23.4 | 9.1  | 38.5              | 18.7             | 28.9 |
| Turkey             | 980  | 2.6         | 5.4  | 0.8 | 0.6  | 2.8  | 0.2  | 1.9 | 8.9  | 76.7 | 12.5 | 14.0 | 62.7              | 13.6             | 11.8 |
| United States      | 1112 | 2.1         | 4.6  | 5.3 | 4.7  | 12.2 | 5.4  | 0.8 | 41.3 | 23.6 | 34.3 | 3.9  | 19.7              | 31.3             | 37.5 |
| International Avg. | .    | 4.6         | 7.6  | 2.8 | 3.7  | 4.3  | 2.4  | 1.5 | 24.6 | 48.5 | 25.4 | 8.8  | 39.8              | 23.9             | 26.7 |

V1 = % Scoring 1 or better V2 = % Scoring 2 or better V3 = % Scoring 3 or better  
 Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.  
 Because of missing gender information, some totals may appear inconsistent



Science: Chemistry  
 Label: Galvanization of steel ( S022217D - Z01D )  
 Item Type = EX Key = X

| COUNTRY            | N    | 20   | 10   | 70   | 99   | V1   | V2   | NOT REACH |      | 1.GIRL  | 2.BOY   |
|--------------------|------|------|------|------|------|------|------|-----------|------|---------|---------|
|                    |      |      |      |      |      |      |      | ED        | OMIT | % Right | % Right |
| Australia          | 491  | 27.5 | 39.5 | 12.7 | 20.3 | 67.0 | 27.5 | 4.5       | 15.8 | 27.9    | 26.9    |
| Belgium (Flemish)  | 663  | 32.4 | 27.9 | 22.3 | 17.5 | 60.2 | 32.4 | 0.7       | 16.7 | 28.5    | 36.3    |
| Bulgaria           | 404  | 17.8 | 11.7 | 5.4  | 65.1 | 29.5 | 17.8 | 20.4      | 44.7 | 13.0    | 22.6    |
| Canada             | 1094 | 37.0 | 30.6 | 14.4 | 18.0 | 67.6 | 37.0 | 1.6       | 16.5 | 36.4    | 37.8    |
| Chile              | 750  | 7.1  | 17.6 | 12.8 | 62.5 | 24.7 | 7.1  | 20.5      | 42.0 | 7.4     | 6.9     |
| Chinese Taipei     | 724  | 20.6 | 45.7 | 16.9 | 16.8 | 66.4 | 20.6 | 2.2       | 14.6 | 20.1    | 21.2    |
| Cyprus             | 384  | 11.4 | 21.4 | 23.7 | 43.5 | 32.8 | 11.4 | 6.2       | 37.2 | 7.6     | 14.6    |
| Czech Republic     | 425  | 15.8 | 20.5 | 14.5 | 49.2 | 36.3 | 15.8 | 4.3       | 44.9 | 13.7    | 17.7    |
| England            | 363  | 26.5 | 32.4 | 13.2 | 27.9 | 58.9 | 26.5 | 4.8       | 23.1 | 16.8    | 35.6    |
| Finland            | 368  | 34.0 | 27.2 | 17.9 | 21.0 | 61.2 | 34.0 | 1.9       | 19.1 | 31.6    | 36.2    |
| Hong Kong, SAR     | 645  | 22.1 | 33.2 | 15.2 | 29.5 | 55.3 | 22.1 | 3.5       | 26.0 | 23.9    | 20.5    |
| Hungary            | 392  | 25.1 | 30.1 | 7.4  | 37.4 | 55.1 | 25.1 | 6.4       | 31.0 | 22.1    | 27.3    |
| Indonesia          | 724  | 9.3  | 41.2 | 28.7 | 20.9 | 50.5 | 9.3  | 2.9       | 18.0 | 9.0     | 9.6     |
| Iran, Islamic Rep. | 664  | 2.1  | 8.7  | 23.5 | 65.7 | 10.8 | 2.1  | 10.9      | 54.8 | 1.2     | 2.7     |
| Israel             | 524  | 12.9 | 14.3 | 16.4 | 56.4 | 27.2 | 12.9 | 16.2      | 40.1 | 8.6     | 16.8    |
| Italy              | 412  | 12.3 | 13.8 | 20.4 | 53.4 | 26.2 | 12.3 | 6.8       | 46.6 | 9.3     | 15.2    |
| Japan              | 590  | 36.2 | 29.2 | 11.9 | 22.7 | 65.3 | 36.2 | 3.7       | 19.1 | 35.4    | 36.9    |
| Jordan             | 624  | 15.4 | 17.1 | 40.0 | 27.5 | 32.5 | 15.4 | 7.0       | 20.5 | 16.1    | 14.8    |
| Korea, Rep. of     | 763  | 45.3 | 30.1 | 9.6  | 15.0 | 75.4 | 45.3 | 2.7       | 12.3 | 44.8    | 45.7    |
| Latvia (LSS)       | 361  | 17.5 | 15.6 | 9.6  | 57.3 | 33.1 | 17.5 | 13.6      | 43.8 | 14.9    | 20.0    |
| Lithuania          | 293  | 10.6 | 23.1 | 18.8 | 47.5 | 33.7 | 10.6 | 12.2      | 35.2 | 10.5    | 10.7    |
| Macedonia, Rep. of | 503  | 11.3 | 5.2  | 11.0 | 72.5 | 16.5 | 11.3 | 22.8      | 49.7 | 11.2    | 11.4    |
| Malaysia           | 699  | 20.3 | 31.3 | 15.6 | 32.9 | 51.5 | 20.3 | 5.6       | 27.3 | 23.1    | 16.9    |
| Moldova            | 462  | 8.4  | 11.1 | 20.0 | 60.5 | 19.5 | 8.4  | 17.2      | 43.3 | 6.7     | 10.6    |
| Morocco            | 674  | 0.6  | 6.4  | 27.1 | 65.9 | 7.0  | 0.6  | 27.2      | 38.7 | 1.1     | 0.2     |
| Netherlands        | 362  | 41.7 | 28.6 | 18.0 | 11.7 | 70.3 | 41.7 | 2.4       | 9.3  | 40.8    | 42.7    |
| New Zealand        | 454  | 31.5 | 22.9 | 21.0 | 24.6 | 54.4 | 31.5 | 4.8       | 19.9 | 37.3    | 25.8    |
| Philippines        | 836  | 2.9  | 6.3  | 40.7 | 50.1 | 9.2  | 2.9  | 13.9      | 36.2 | 3.0     | 2.8     |
| Romania            | 430  | 7.0  | 13.0 | 16.3 | 63.8 | 20.0 | 7.0  | 18.5      | 45.3 | 7.9     | 6.1     |
| Russian Federation | 549  | 4.5  | 17.1 | 14.3 | 64.0 | 21.7 | 4.5  | 10.3      | 53.7 | 4.5     | 4.6     |
| Singapore          | 620  | 41.5 | 31.4 | 11.1 | 16.0 | 72.9 | 41.5 | 1.3       | 14.7 | 42.9    | 40.2    |
| Slovak Republic    | 442  | 29.7 | 14.5 | 10.2 | 45.7 | 44.1 | 29.7 | 6.7       | 39.0 | 24.4    | 34.9    |
| Slovenia           | 390  | 20.6 | 12.2 | 19.0 | 48.3 | 32.8 | 20.6 | 3.5       | 44.8 | 16.8    | 24.6    |
| South Africa       | 1023 | 3.1  | 5.8  | 50.3 | 40.8 | 8.9  | 3.1  | 15.0      | 25.7 | 3.1     | 3.1     |
| Thailand           | 722  | 35.3 | 28.4 | 21.1 | 15.1 | 63.7 | 35.3 | 4.8       | 10.4 | 36.7    | 33.7    |
| Tunisia            | 638  | 12.6 | 23.9 | 30.5 | 33.1 | 36.4 | 12.6 | 9.1       | 24.0 | 10.4    | 15.0    |
| Turkey             | 980  | 9.6  | 15.8 | 18.4 | 56.3 | 25.4 | 9.6  | 14.0      | 42.3 | 11.1    | 8.6     |
| United States      | 1112 | 25.7 | 29.1 | 26.5 | 18.7 | 54.8 | 25.7 | 3.9       | 14.8 | 24.4    | 27.0    |
| International Avg. | .    | 19.6 | 21.9 | 19.1 | 39.3 | 41.5 | 19.6 | 8.8       | 30.6 | 18.5    | 20.6    |

V1 = % Scoring 1 or better V2 = % Scoring 2 or better V3 = % Scoring 3 or better  
 Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.  
 Because of missing gender information, some totals may appear inconsistent

Science: Earth Science  
 Label: Diagram of rain from sea ( S022090 - Z02 )  
 Item Type = EX Key = X

| COUNTRY            | N    | 20   | 21  | 29  | 10  | 11   | 12   | 13  | 19   | 70   | 71   | 79   | 99   | V1   | V2   | NOT   | OMIT | 1.GIRL  | 2.BOY   |   |
|--------------------|------|------|-----|-----|-----|------|------|-----|------|------|------|------|------|------|------|-------|------|---------|---------|---|
|                    |      |      |     |     |     |      |      |     |      |      |      |      |      |      |      | REACH |      | % Right | % Right |   |
|                    |      |      |     |     |     |      |      |     |      |      |      |      |      |      |      | ED    |      | % Right | % Right |   |
| Australia          | 491  | 65.9 | 0.2 | 0.0 | 0.8 | 0.8  | 6.7  | 0.3 | 4.3  | 2.6  | 1.9  | 7.3  | 9.2  | 79.0 | 66.1 | 5.2   | 4.0  | 66.8    | 65.2    |   |
| Belgium (Flemish)  | 663  | 75.7 | 1.3 | 0.2 | 0.9 | 0.6  | 6.5  | 1.0 | 2.1  | 0.5  | 4.9  | 4.6  | 1.6  | 88.3 | 77.3 | 1.0   | 0.6  | 69.9    | 84.8    |   |
| Bulgaria           | 404  | 10.9 | 0.3 | 0.0 | 6.9 | 20.0 | 4.7  | 0.7 | 2.6  | 2.0  | 0.7  | 7.3  | 43.8 | 46.2 | 11.2 | 22.9  | 20.9 | 11.3    | 11.1    |   |
| Canada             | 1094 | 57.6 | 0.1 | 0.2 | 0.6 | 0.8  | 21.8 | 0.9 | 0.6  | 1.8  | 2.4  | 8.1  | 5.1  | 82.5 | 57.9 | 2.1   | 3.0  | 53.3    | 63.3    |   |
| Chile              | 750  | 26.8 | 0.1 | 0.1 | 1.1 | 0.8  | 9.4  | 0.2 | 1.9  | 3.9  | 4.0  | 11.6 | 40.1 | 40.4 | 27.0 | 24.0  | 16.1 | 19.1    | 35.3    |   |
| Chinese Taipei     | 724  | 40.9 | 0.1 | 1.5 | 0.3 | 2.1  | 34.0 | 0.5 | 4.7  | 1.0  | 1.4  | 6.2  | 7.3  | 84.1 | 42.6 | 3.0   | 4.3  | 32.4    | 54.0    |   |
| Cyprus             | 385  | 34.9 | 0.0 | 0.4 | 1.2 | 4.4  | 8.0  | 5.4 | 10.4 | 0.9  | 2.5  | 14.4 | 17.6 | 64.6 | 35.3 | 7.6   | 10.0 | 28.8    | 40.7    |   |
| Czech Republic     | 425  | 47.4 | 0.0 | 0.1 | 0.0 | 1.2  | 24.1 | 0.0 | 0.3  | 4.9  | 3.6  | 7.4  | 11.1 | 73.0 | 47.4 | 5.2   | 5.9  | 34.9    | 58.8    |   |
| England            | 363  | 72.4 | 0.3 | 1.2 | 1.0 | 0.0  | 8.4  | 0.5 | 0.3  | 1.1  | 2.0  | 3.7  | 9.2  | 84.1 | 74.0 | 5.1   | 4.1  | 68.6    | 79.0    |   |
| Finland            | 368  | 51.8 | 0.0 | 0.0 | 0.8 | 0.4  | 7.8  | 0.2 | 23.7 | 2.9  | 1.7  | 5.3  | 5.5  | 84.6 | 51.8 | 2.3   | 3.2  | 54.0    | 49.7    |   |
| Hong Kong, SAR     | .    | .    | .   | .   | .   | .    | .    | .   | .    | .    | .    | .    | .    | .    | .    | .     | .    | .       | .       | . |
| Hungary            | 392  | 66.6 | 0.6 | 0.0 | 1.6 | 1.2  | 6.8  | 0.3 | 0.5  | 3.1  | 2.5  | 2.8  | 14.1 | 77.5 | 67.2 | 8.2   | 5.9  | 62.1    | 71.3    |   |
| Indonesia          | 724  | 14.4 | 2.4 | 0.0 | 3.2 | 3.5  | 11.4 | 0.2 | 0.0  | 1.4  | 2.2  | 22.9 | 38.4 | 35.1 | 16.8 | 6.1   | 32.2 | 13.2    | 20.1    |   |
| Iran, Islamic Rep. | 663  | 9.3  | 0.4 | 0.0 | 0.3 | 2.1  | 9.6  | 1.8 | 12.1 | 15.2 | 2.4  | 28.3 | 18.3 | 35.8 | 9.7  | 12.1  | 6.2  | 5.6     | 12.5    |   |
| Israel             | 524  | 13.6 | 0.0 | 0.2 | 0.4 | 1.7  | 22.5 | 0.0 | 2.0  | 4.0  | 3.4  | 20.3 | 32.0 | 40.3 | 13.8 | 19.6  | 12.4 | 12.1    | 15.2    |   |
| Italy              | 412  | 41.9 | 0.0 | 0.0 | 1.4 | 0.9  | 21.0 | 0.7 | 5.2  | 4.4  | 4.2  | 5.7  | 14.5 | 71.2 | 41.9 | 7.5   | 7.0  | 42.8    | 41.1    |   |
| Japan              | 590  | 48.3 | 6.1 | 0.0 | 0.4 | 2.0  | 22.3 | 0.0 | 0.3  | 5.9  | 1.3  | 3.9  | 9.3  | 79.4 | 54.4 | 4.5   | 4.8  | 54.9    | 53.9    |   |
| Jordan             | 624  | 39.8 | 0.1 | 1.0 | 2.3 | 1.9  | 9.1  | 1.7 | 1.0  | 9.3  | 6.0  | 14.6 | 13.2 | 56.9 | 40.9 | 8.4   | 4.8  | 47.0    | 35.3    |   |
| Korea, Rep. of     | 763  | 43.0 | 0.0 | 0.4 | 0.4 | 1.8  | 35.4 | 0.3 | 1.7  | 2.6  | 5.7  | 1.7  | 7.2  | 82.9 | 43.3 | 3.2   | 3.9  | 36.4    | 50.0    |   |
| Latvia (LSS)       | 361  | 40.3 | 0.6 | 0.0 | 0.0 | 1.1  | 12.9 | 0.0 | 1.2  | 1.7  | 3.5  | 8.5  | 30.2 | 56.1 | 40.9 | 16.6  | 13.6 | 35.5    | 46.2    |   |
| Lithuania          | 293  | 14.7 | 4.0 | 0.9 | 0.7 | 1.2  | 8.8  | 0.3 | 6.3  | 4.1  | 4.8  | 18.4 | 35.8 | 36.9 | 19.6 | 14.2  | 21.6 | 12.0    | 28.0    |   |
| Macedonia, Rep. of | 503  | 21.0 | 1.1 | 3.5 | 5.0 | 0.8  | 4.2  | 0.7 | 2.7  | 5.6  | 2.7  | 8.7  | 44.0 | 39.0 | 25.6 | 27.5  | 16.6 | 24.8    | 26.4    |   |
| Malaysia           | 699  | 65.7 | 0.5 | 0.1 | 1.0 | 0.7  | 9.3  | 1.0 | 0.3  | 0.8  | 4.2  | 5.1  | 11.2 | 78.6 | 66.3 | 7.2   | 4.0  | 66.6    | 66.1    |   |
| Moldova            | 462  | 13.0 | 1.3 | 0.0 | 0.7 | 1.4  | 11.1 | 1.5 | 11.3 | 1.2  | 2.5  | 21.8 | 34.1 | 40.3 | 14.3 | 19.8  | 14.4 | 13.5    | 15.4    |   |
| Morocco            | 674  | 4.6  | 0.3 | 0.5 | 1.2 | 0.9  | 11.3 | 0.7 | 7.4  | 6.4  | 6.4  | 20.7 | 39.5 | 27.0 | 5.4  | 29.2  | 10.3 | 2.9     | 7.1     |   |
| Netherlands        | 362  | 63.6 | 1.3 | 0.0 | 1.1 | 2.3  | 7.4  | 1.6 | 0.5  | 1.2  | 4.4  | 10.7 | 5.9  | 77.7 | 64.9 | 3.2   | 2.7  | 63.9    | 66.1    |   |
| New Zealand        | 454  | 59.3 | 0.0 | 0.5 | 0.0 | 1.0  | 9.0  | 0.2 | 0.4  | 3.0  | 5.8  | 10.3 | 10.5 | 70.5 | 59.8 | 5.9   | 4.6  | 57.8    | 61.8    |   |
| Philippines        | 836  | 18.9 | 0.0 | 0.1 | 0.6 | 0.0  | 13.8 | 1.3 | 4.7  | 4.3  | 4.9  | 25.1 | 26.3 | 39.3 | 19.0 | 17.1  | 9.2  | 18.3    | 19.7    |   |
| Romania            | 430  | 25.7 | 0.2 | 0.0 | 2.6 | 1.4  | 15.4 | 0.0 | 1.1  | 2.6  | 7.7  | 9.1  | 34.2 | 46.4 | 25.9 | 20.0  | 14.1 | 23.9    | 27.9    |   |
| Russian Federation | 549  | 64.2 | 0.0 | 0.0 | 0.4 | 1.2  | 10.3 | 1.7 | 0.1  | 0.4  | 1.8  | 4.0  | 16.0 | 77.8 | 64.2 | 11.8  | 4.2  | 58.3    | 71.1    |   |
| Singapore          | 620  | 76.2 | 0.0 | 0.2 | 0.3 | 0.0  | 10.0 | 0.2 | 1.8  | 0.6  | 4.4  | 2.3  | 4.0  | 88.7 | 76.4 | 1.7   | 2.3  | 71.3    | 81.1    |   |
| Slovak Republic    | 442  | 33.3 | 1.0 | 0.3 | 0.6 | 0.0  | 22.9 | 0.0 | 7.8  | 2.8  | 0.7  | 16.5 | 14.1 | 65.9 | 34.6 | 8.2   | 5.9  | 26.3    | 42.8    |   |
| Slovenia           | 390  | 55.8 | 0.5 | 0.0 | 1.9 | 4.3  | 11.0 | 1.5 | 0.4  | 3.8  | 2.8  | 10.6 | 7.6  | 75.3 | 56.3 | 3.6   | 4.0  | 54.6    | 58.0    |   |
| South Africa       | 1023 | 11.3 | 0.1 | 0.0 | 0.1 | 0.4  | 3.7  | 0.2 | 0.4  | 1.6  | 20.1 | 32.8 | 29.2 | 16.3 | 11.4 | 18.8  | 10.4 | 9.7     | 13.4    |   |
| Thailand           | 722  | 38.8 | 1.8 | 0.4 | 2.6 | 1.5  | 16.1 | 1.1 | 0.4  | 0.9  | 6.7  | 16.7 | 13.1 | 62.7 | 40.9 | 5.3   | 7.8  | 36.1    | 46.5    |   |
| Tunisia            | 638  | 24.3 | 0.4 | 0.4 | 1.3 | 3.4  | 26.4 | 1.3 | 19.9 | 1.9  | 2.4  | 5.6  | 12.8 | 77.3 | 25.1 | 10.0  | 2.8  | 23.1    | 27.5    |   |
| Turkey             | 980  | 21.0 | 1.3 | 2.5 | 4.9 | 2.2  | 15.9 | 1.0 | 4.5  | 6.1  | 4.4  | 5.7  | 30.5 | 53.2 | 24.7 | 16.8  | 13.7 | 22.1    | 26.6    |   |
| United States      | 1112 | 13.4 | 0.0 | 0.0 | 0.3 | 33.2 | 5.0  | 0.2 | 0.0  | 1.1  | 3.8  | 33.1 | 9.9  | 52.1 | 13.4 | 4.4   | 5.5  | 14.8    | 11.9    |   |
| International Avg. | .    | 38.5 | 0.7 | 0.4 | 1.3 | 2.8  | 13.3 | 0.8 | 3.9  | 3.2  | 4.0  | 11.9 | 19.1 | 61.8 | 39.7 | 10.5  | 8.6  | 36.5    | 42.8    |   |

V1 = % Scoring 1 or better V2 = % Scoring 2 or better V3 = % Scoring 3 or better  
 Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.  
 Because of missing gender information, some totals may appear inconsistent

Science: Physics  
 Label: Heat expansion of balloons ( S022048 - Z03 )  
 Item Type = SA Key = X

| COUNTRY            | N    | 10   | 11   | 19  | 70   | 71   | 72   | 73   | 79   | 99   | V1   | NOT   | OMIT | 1.GIRL  | 2.BOY   |
|--------------------|------|------|------|-----|------|------|------|------|------|------|------|-------|------|---------|---------|
|                    |      |      |      |     |      |      |      |      |      |      |      | REACH |      | % Right | % Right |
| Australia          | 491  | 7.9  | 27.8 | 0.3 | 11.5 | 1.1  | 5.1  | 2.1  | 29.0 | 15.2 | 36.0 | 5.6   | 9.6  | 35.1    | 37.0    |
| Belgium (Flemish)  | 663  | 1.1  | 24.4 | 0.4 | 20.4 | 3.6  | 2.2  | 10.0 | 31.0 | 6.9  | 25.9 | 1.0   | 6.0  | 20.7    | 31.1    |
| Bulgaria           | 402  | 8.8  | 14.1 | 2.1 | 22.8 | 3.6  | 4.0  | 1.0  | 11.0 | 32.7 | 24.9 | 23.3  | 9.4  | 23.5    | 26.3    |
| Canada             | 1094 | 9.8  | 16.8 | 1.0 | 16.9 | 3.1  | 6.2  | 4.0  | 33.0 | 9.1  | 27.6 | 2.1   | 7.0  | 26.7    | 28.6    |
| Chile              | 750  | 0.8  | 5.6  | 0.0 | 15.9 | 0.7  | 3.0  | 3.4  | 36.2 | 34.5 | 6.4  | 24.6  | 9.8  | 4.7     | 8.3     |
| Chinese Taipei     | 724  | 0.9  | 30.5 | 1.5 | 31.0 | 0.0  | 0.4  | 1.3  | 25.6 | 8.8  | 32.9 | 3.0   | 5.7  | 27.3    | 39.2    |
| Cyprus             | 383  | 1.5  | 3.2  | 1.4 | 18.2 | 1.2  | 8.2  | 2.7  | 41.1 | 22.5 | 6.1  | 8.4   | 14.1 | 5.1     | 6.9     |
| Czech Republic     | 425  | 0.5  | 32.4 | 0.0 | 19.9 | 2.3  | 4.8  | 1.1  | 22.0 | 16.9 | 32.9 | 5.2   | 11.7 | 24.4    | 40.5    |
| England            | 363  | 8.7  | 22.6 | 0.7 | 8.9  | 3.3  | 10.5 | 4.5  | 26.6 | 14.3 | 32.0 | 5.4   | 9.0  | 23.6    | 39.8    |
| Finland            | 368  | 0.6  | 48.1 | 0.0 | 8.5  | 3.3  | 1.8  | 0.6  | 29.1 | 7.9  | 48.7 | 2.3   | 5.6  | 40.8    | 56.3    |
| Hong Kong, SAR     | 646  | 5.3  | 12.7 | 1.2 | 18.5 | 1.1  | 2.8  | 8.6  | 37.4 | 12.4 | 19.2 | 4.0   | 8.4  | 17.6    | 20.7    |
| Hungary            | 392  | 4.6  | 28.4 | 1.0 | 10.0 | 1.2  | 5.0  | 2.9  | 23.3 | 23.5 | 34.0 | 9.1   | 14.4 | 25.3    | 40.8    |
| Indonesia          | 724  | 0.4  | 4.0  | 0.1 | 40.7 | 0.3  | 2.3  | 3.4  | 35.5 | 13.2 | 4.5  | 8.8   | 4.5  | 3.1     | 5.9     |
| Iran, Islamic Rep. | 661  | 5.0  | 8.2  | 0.4 | 8.6  | 1.5  | 1.5  | 2.0  | 46.9 | 25.9 | 13.5 | 12.5  | 13.4 | 10.5    | 15.6    |
| Israel             | 524  | 7.1  | 6.7  | 1.3 | 17.6 | 4.6  | 5.4  | 2.0  | 23.9 | 31.4 | 15.1 | 20.1  | 11.3 | 16.8    | 13.6    |
| Italy              | 412  | 4.9  | 18.0 | 0.7 | 18.6 | 3.0  | 4.5  | 2.2  | 24.4 | 23.7 | 23.6 | 7.5   | 16.2 | 22.0    | 25.1    |
| Japan              | 590  | 0.0  | 37.0 | 0.0 | 7.5  | 5.1  | 0.3  | 0.2  | 36.2 | 13.7 | 37.0 | 4.7   | 9.1  | 32.3    | 41.5    |
| Jordan             | 624  | 3.3  | 26.1 | 2.9 | 9.0  | 2.6  | 3.7  | 0.8  | 38.4 | 13.2 | 32.3 | 8.9   | 4.3  | 34.4    | 30.3    |
| Korea, Rep. of     | 762  | 21.9 | 28.2 | 0.0 | 6.6  | 9.9  | 1.5  | 1.6  | 18.5 | 11.9 | 50.1 | 3.8   | 8.1  | 47.9    | 52.1    |
| Latvia (LSS)       | 361  | 7.8  | 14.6 | 1.9 | 13.2 | 3.7  | 4.6  | 4.6  | 23.7 | 25.9 | 24.3 | 17.2  | 8.7  | 20.0    | 28.5    |
| Lithuania          | 293  | 6.1  | 34.2 | 0.9 | 15.8 | 0.3  | 2.8  | 0.0  | 17.1 | 22.7 | 41.3 | 14.6  | 8.1  | 34.3    | 49.0    |
| Macedonia, Rep. of | 503  | 9.1  | 7.7  | 6.7 | 11.6 | 1.1  | 1.1  | 1.5  | 17.0 | 44.2 | 23.5 | 30.0  | 14.2 | 25.6    | 21.5    |
| Malaysia           | 698  | 5.3  | 14.7 | 1.2 | 13.9 | 1.1  | 1.5  | 4.7  | 35.3 | 22.4 | 21.2 | 7.6   | 14.8 | 21.5    | 20.8    |
| Moldova            | 462  | 6.9  | 9.3  | 0.8 | 6.6  | 20.9 | 3.7  | 2.9  | 19.7 | 29.2 | 16.9 | 20.5  | 8.6  | 13.1    | 21.7    |
| Morocco            | 671  | 0.9  | 5.6  | 7.8 | 5.2  | 2.2  | 1.8  | 0.3  | 36.5 | 39.8 | 14.3 | 30.7  | 9.1  | 10.6    | 16.8    |
| Netherlands        | 362  | 6.4  | 39.9 | 0.0 | 5.8  | 0.8  | 1.4  | 0.7  | 38.8 | 6.2  | 46.3 | 3.4   | 2.9  | 39.9    | 53.4    |
| New Zealand        | 453  | 6.6  | 26.1 | 0.7 | 10.9 | 1.7  | 10.0 | 2.2  | 28.4 | 13.3 | 33.4 | 6.0   | 7.3  | 33.9    | 32.8    |
| Philippines        | 836  | 0.7  | 0.1  | 0.6 | 14.1 | 0.4  | 1.4  | 1.0  | 50.7 | 31.0 | 1.5  | 18.6  | 12.3 | 1.2     | 1.7     |
| Romania            | 427  | 1.3  | 15.1 | 0.8 | 16.3 | 6.8  | 2.8  | 1.6  | 22.6 | 32.8 | 17.1 | 20.9  | 11.9 | 14.5    | 19.7    |
| Russian Federation | 549  | 8.0  | 25.8 | 1.3 | 12.2 | 1.1  | 1.1  | 3.9  | 17.6 | 29.1 | 35.0 | 12.1  | 17.0 | 34.1    | 36.1    |
| Singapore          | 620  | 5.6  | 38.7 | 1.6 | 11.1 | 0.5  | 0.9  | 1.9  | 35.5 | 4.2  | 45.8 | 1.9   | 2.4  | 42.4    | 49.1    |
| Slovak Republic    | 440  | 2.8  | 27.1 | 0.3 | 2.5  | 1.8  | 8.5  | 1.8  | 31.2 | 23.9 | 30.2 | 9.4   | 14.6 | 22.9    | 37.5    |
| Slovenia           | 390  | 1.7  | 27.2 | 0.8 | 14.1 | 2.1  | 8.0  | 2.2  | 28.4 | 15.5 | 29.7 | 3.9   | 11.6 | 24.0    | 35.6    |
| South Africa       | 1023 | 0.5  | 2.0  | 0.4 | 10.5 | 0.4  | 2.0  | 0.3  | 50.4 | 33.4 | 2.9  | 23.1  | 10.3 | 2.5     | 3.4     |
| Thailand           | 722  | 0.0  | 33.3 | 0.0 | 10.7 | 1.8  | 14.6 | 1.0  | 24.6 | 13.9 | 33.3 | 6.3   | 7.7  | 30.5    | 36.6    |
| Tunisia            | 634  | 0.2  | 12.4 | 3.6 | 8.9  | 2.5  | 9.5  | 0.6  | 40.9 | 21.4 | 16.2 | 11.1  | 10.3 | 13.6    | 19.3    |
| Turkey             | 980  | 5.1  | 7.6  | 2.4 | 18.6 | 4.5  | 9.0  | 0.2  | 23.6 | 29.1 | 15.1 | 16.9  | 12.2 | 14.3    | 15.7    |
| United States      | 1112 | 8.0  | 22.9 | 0.1 | 19.9 | 1.6  | 2.2  | 3.3  | 32.5 | 9.4  | 31.0 | 4.6   | 4.9  | 27.4    | 34.8    |
| International Avg. | .    | 4.6  | 20.0 | 1.2 | 14.0 | 2.8  | 4.2  | 2.3  | 30.1 | 20.7 | 25.8 | 11.0  | 9.6  | 22.8    | 28.8    |

V1 = % Scoring 1 or better V2 = % Scoring 2 or better V3 = % Scoring 3 or better  
 Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.  
 Because of missing gender information, some totals may appear inconsistent