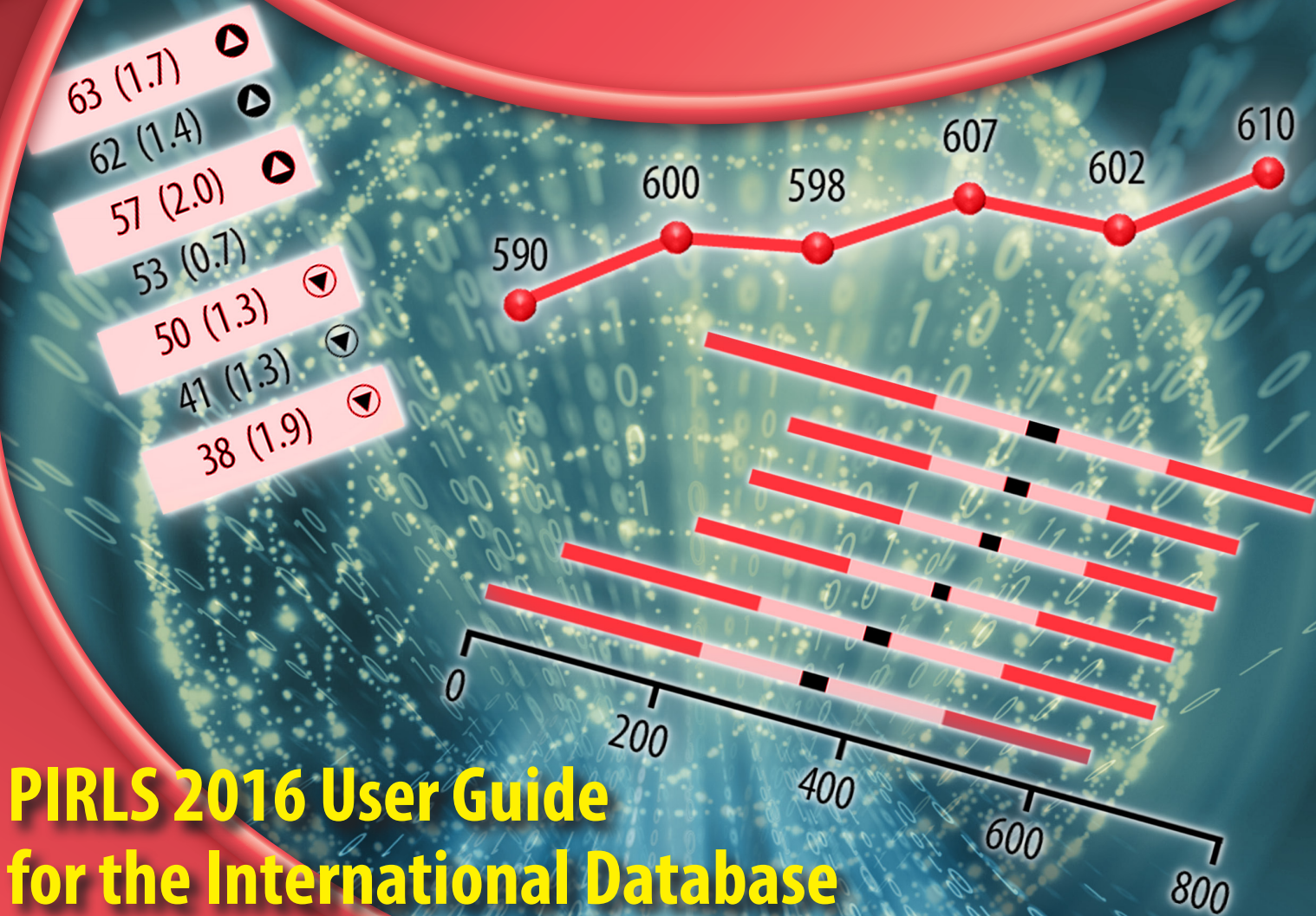


PIRLS



PIRLS 2016 User Guide for the International Database

SUPPLEMENT 3

Variables Derived from the Student, Home, Teacher, and School Questionnaire Data

Supplement 3

Variables Derived from the Student, Home, Teacher, and School Questionnaire Data

Overview

The PIRLS 2016 International Database includes data for derived variables used to report background data in the [*PIRLS 2016 International Results in Reading*](#) and [*ePIRLS 2016 International Results in Online Informational Reading*](#) reports. This supplement contains information about each derived variable in the following four sections corresponding to the PIRLS 2016 context questionnaires administered to collect the data:

- | | |
|------------|----------------------------------------------|
| Section 1: | Student Questionnaire |
| Section 2: | Home Questionnaire (Learning to Read Survey) |
| Section 3: | Teacher Questionnaire |
| Section 4: | School Questionnaire |

The following information is provided for each derived variable:

- Derived variable name
- Variable label
- Title and location of international report exhibit(s) where variable is reported
- Procedures for computing the derived variable, including descriptions of source variables and missing data rules
- Information about whether a comparable variable was available in PIRLS 2011

Derived Variable Naming Convention

The derived variables are named according to the background variable naming convention described in Chapter 4. Exhibit S3.1 displays the naming convention and data sources for the derived variables.

Exhibit S3.1: Variable Naming Convention for Variables Derived from the PIRLS 2016 Background Data

Variable Naming Convention	Data Source
ASDG****	Variables derived from student background data
ASDH****	Variables derived from home background data
ATDG****	Variables derived from general teacher background data
ACDG****	Variables derived from school background data

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Section 1: **Student Questionnaire**

Derived Variable Name:

ASDG05S

Variable Label:

Number of Home Study Supports

Title of International Report Exhibits

Home Resources for Learning

Report Locations

[PIRLS Exhibit 4.1](#)
[ePIRLS Exhibit 3.1](#)

Procedure

Based on responses to the following questions in the Student Questionnaire:

SQG-05c,d: Do you have any of these things in your home?

"Your own room" (ASBG05C)

"Internet connection" (ASBG05D)

Response options: 1 = "Yes"

2 = "No"

Derive ASDG05S:

0 = "Neither Own Room nor Internet Connection" = IF (ASBG05C = 2 AND ASBG05D = 2)

1 = "Either Own Room or Internet Connection" = IF ((ASBG05C = 1 AND ASBG05D = 2) OR (ASBG05C = 2 AND ASBG05D = 1))

2 = "Both Own Room and Internet Connection" = IF (ASBG05C = 1 AND ASBG05D = 1)

Set ASDG05S to missing if either source variable is missing.

0 = "Neither Own Room nor Internet Connection"

1 = "Either Own Room or Internet Connection"

2 = "Both Own Room and Internet Connection"

Trend Comments

See ASDG05S in PIRLS 2011.

Derived Variable Name:

ASDG05D

Variable Label:

Number of Home Digital Supports

Title of International Report Exhibits

Digital Devices in the Home

Report Locations

[PIRLS Exhibit 4.2](#)
[ePIRLS Exhibit 3.2](#)

Procedure

Based on responses to the following question in the Student Questionnaire:

SQG-05a,d: Do you have any of these things in your home?

"A computer or tablet" (ASBG05A)

"Internet connection" (ASBG05D)

Response options: 1 = "Yes"

2 = "No"

Derive ASDG05D:

0 = "Neither Computer/Tablet nor Internet Connection" = IF (ASBG05A = 2 AND ASBG05D = 2)

1 = "Either Computer/Tablet or Internet Connection" = IF ((ASBG05A = 1 AND ASBG05D = 2) OR (ASBG05A = 2 AND ASBG05D = 1))

2 = "Both Computer/Tablet and Internet Connection" = IF (ASBG05A = 1 AND ASBG05D = 1)

Set ASDG05D to missing if either source variable is missing.

0 = "Neither Computer/Tablet nor Internet Connection"

1 = "Either Computer/Tablet or Internet Connection"

2 = "Both Computer/Tablet and Internet Connection"

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Section 2:
Home
Questionnaire
(Learning to Read Survey)

Derived Variable Name:

ASDHAPS

Variable Label:

Student Attended Preschool

Title of International Report ExhibitsStudents Attended Preprimary Education
Early Preparation for School**Report Locations**[PIRLS Exhibit 4.6](#)[PIRLS Exhibit 4.7](#)**Procedure**

Based on responses to the following questions in the Home Questionnaire:

HQ-05Aa,b: Did your child attend the following before <first grade>?

"Early childhood educational program or center for children under age 3" (ASBH05AA)

"Pre-primary educational program for children age 3 or older, including <Kindergarten>" (ASBH05AB)

Response options: 1 = "Yes"

2 = "No"

HQ-05B: Approximately, how long was your child in these programs altogether? (ASBH05B)

Response options: 1 = "Did not attend"

2 = "Less than 1 year"

3 = "1 year"

4 = "2 years"

5 = "3 years"

6 = "4 years or more"

Derive ASDHAPS:

0 = "Did Not Attend" = IF ((ASBH05AA = 2 AND ASBH05AB = 2) OR ASBH05B = 1)

1 = "1 Year or Less" = IF (ASBH05B = 2 OR 3)

2 = "2 Years" = IF (ASBH05B = 4)

3 = "3 Years or More" = IF (ASBH05B = 5 OR 6)

Set ASDHAPS to missing if any source variable is missing.

0 = "Did Not Attend"

1 = "1 Year or Less"

2 = "2 Years"

3 = "3 Years or More"

Derived Variable Name:

ASDHEDUP

Variable Label:

Parents' Highest Education Level

Title of International Report Exhibits

Home Resources for Learning

Report Locations

[PIRLS Exhibit 4.1](#)
[ePIRLS Exhibit 3.1](#)

Procedure

Based on responses to the following questions in the Home Questionnaire:

HQ-18: What is the highest level of education completed by the child's father (or stepfather or male guardian) and mother (or stepmother or female guardian)?

"Child's father" (ASBH18A)

"Child's mother" (ASBH18B)

Response options: 1 = "Did not go to school"

2 = "Some <Primary education—ISCED Level 1 or Lower secondary education—ISCED Level 2>"

3 = "<Lower secondary education—ISCED Level 2>"

4 = "<Upper secondary education—ISCED Level 3>"

5 = "<Post-secondary, non-tertiary education—ISCED Level 4>"

6 = "<Short-cycle tertiary education—ISCED Level 5>"

7 = "<Bachelor's or equivalent level—ISCED Level 6>"

8 = "<Master's or equivalent level—ISCED Level 7>"

9 = "<Doctor or equivalent level—ISCED Level 8>"

10 = "Not applicable"

Recode ASBH18A as follows:

IF ASBH18A = 7, 8, OR 9: Recode to 1 ("University or Higher")

IF ASBH18A = 5 or 6: Recode to 2 ("Post-Secondary Education but not University")

IF ASBH18A = 4: Recode to 3 ("Upper Secondary")

IF ASBH18A = 3: Recode to 4 ("Lower Secondary")

IF ASBH18A = 1 OR 2: Recode to 5 ("Some Primary, Lower Secondary or No School")

IF ASBH18A = 10: Recode to 6 ("Not Applicable")

Recode ASBH18B in the same way.

Derive ASDHEDUP:

Using these categories, the smaller value of the recoded variables ASBH18A and ASBH18B becomes ASDHEDUP.

Set ASDHEDUP to missing if both source variables are missing.

1 = "University or Higher"

2 = "Post-Secondary Education"

3 = "Upper Secondary"

4 = "Lower Secondary"

5 = "Some Primary, Lower Secondary or No School"

6 = "Not Applicable"

Trend Comments

See ASDHEDUP in PIRLS 2011. Modifications made to source variables ASBH18A, ASBH18B.

Derived Variable Name:

ASDHOCCP

Variable Label:

Parents' Highest Occupation Level

Title of International Report Exhibits

Home Resources for Learning

Report Locations[PIRLS Exhibit 4.1](#)[ePIRLS Exhibit 3.1](#)**Procedure**

Based on responses to the following question in the Home Questionnaire:

HQ-20: What kind of work do the child's father (or stepfather or male guardian) and mother (or stepmother or female guardian) do for their main jobs?

"Child's father" (ASBH20A)

"Child's mother" (ASBH20B)

Response options: 1 = "Has never worked for pay"

2 = "Small Business Owner"

3 = "Clerical Worker"

4 = "Service or Sales Worker"

5 = "Skilled Agricultural or Fishery Worker"

6 = "Craft or Trade Worker"

7 = "Plant or Machine Operator"

8 = "General Laborers"

9 = "Corporate Manager or Senior Official"

10 = "Professional"

11 = "Technician or Associate Professional"

12 = "Not applicable"

Recode ASBH20A as follows:

IF ASBH20A = 9, 10, or 11: Recode to 1 ("Professional")

IF ASBH20A = 2: Recode to 2 ("Small Business Owner")

IF ASBH20A = 3 or 4: Recode to 3 ("Clerical")

IF ASBH20A = 5, 6, or 7: Recode to 4 ("Skilled Worker")

IF ASBH20A = 8: Recode to 5 ("General Laborer")

IF ASBH20A = 1: Recode to 6 ("Never Worked for Pay")

IF ASBH20A = 12: Recode to 7 ("Not Applicable")

Recode ASBH20B in the same way.

Derive ASDHOCCP:

Using these categories, the smaller value of the recoded variables ASBH20A and ASBH20B becomes ASDHOCCP.

Set ASDHOCCP to missing if both source variables are missing.

1 = "Professional"

2 = "Small Business Owner"

3 = "Clerical"

4 = "Skilled Worker"

5 = "General Laborer"

6 = "Never Worked for Pay"

7 = "Not Applicable"

Trend Comments

See ASDHOCCP in PIRLS 2011. Modifications made to source variables ASBH20A, ASBH20B.

Derived Variable Name:

ASDH15

Variable Label:

Devices Used for Reading eBooks

Title of International Report Exhibits

Digital Devices in the Home

Report Locations

[PIRLS Exhibit 4.2](#)
[ePIRLS Exhibit 3.2](#)

Procedure

Based on responses to the following questions in the Home Questionnaire:

HQ-15A: Do you have a device that you use for reading ebooks (e.g., an e-reader, a tablet, a computer)? (ASBH15A)

HQ-15B: Do you have a device that your child can use for reading ebooks? (ASBH15B)

Response options: 1 = "Yes"

2 = "No"

Derive ASDH15:

0 = "Neither Parents nor Child" = IF (ASBH15A = 2 AND ASBH15B = 2)

1 = "Either Parents or Child" = IF (ASBH15A = 1 AND ASBH15B = 2) OR (ASBH15A = 2 AND ASBH15B = 1)

2 = "Both Parents and Child" = IF (ASBH15A = 1 AND ASBH15B = 1)

Set ASDH15 to missing if either source variable is missing.

0 = "Neither Parents nor Child"

1 = "Either Parents or Child"

2 = "Both Parents and Child"

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Section 3: **Teacher** **Questionnaire**

Derived Variable Name:

ATDG01

Variable Label:

Teachers' Years of Experience

Title of International Report Exhibit

Teachers' Years of Experience

Report Location[PIRLS Exhibit 8.3](#)**Procedure**

Based on responses to the following question in the Teacher Questionnaire:

TQG-01: By the end of this school year, how many years will you have been teaching altogether? (ATBG01)
(Open-response item)

Derive ATDG01:

1 = "20 years or More" = IF (ATBG01 >= 20)

2 = "At Least 10 but Less than 20 Years" = IF (ATBG01 >= 10 AND ATBG01 < 20)

3 = "At Least 5 but Less than 10 Years" = IF (ATBG01 >= 5 AND ATBG01 < 10)

4 = "Less than 5 years" = IF (ATBG01 < 5)

Set ATDG01 to missing if the source variable is missing.

1 = "20 Years or More"

2 = "At Least 10 but Less than 20 Years"

3 = "At Least 5 but Less than 10 Years"

4 = "Less than 5 Years"

Trend Comments

See ATDG01 in PIRLS 2011.

Derived Variable Name:

ATDGLIHY

Variable Label:

Language Instructional Hours per Year

Title of International Report Exhibit

Instruction Time Spent on Language and Reading

Report Location[PIRLS Exhibit 9.1](#)**Procedure**

Based on responses to the following questions in the Teacher Questionnaire (TQR) and the School Questionnaire (SCQ), as well as a variable derived from the School Questionnaire data:
TQR-06: In a typical week, how much time do you spend on <language of test> language instruction and/or activities with the students? (ATBR06)
(Open-response item; response in terms of minutes)
SCQ-07A: For the <fourth grade> students in your school: How many days per year is your school open for instruction? (ACBG07A)
(Open-response item; response in terms of days)
ACDGDAYS: Days per Week the School is Open for Instruction (Derived variable from School Questionnaire)

Derive ATDGLIHY:

- Step 1: Compute language instructional hours per week:
Divide ATBR06 by 60.
- Step 2: Compute language instructional hours per day:
Divide results of step 1 by ACDGDAYS.
- Step 3: Compute language instructional hours per year:
Multiply results from step 2 by ACBG07A.

Set ATDGLIHY to missing if any source variable is missing.

Derived Variable Name:

ATDGRIHY

Variable Label:

Reading Instructional Hours per Year

Title of International Report Exhibit

Instruction Time Spent on Language and Reading

Report Location[PIRLS Exhibit 9.1](#)**Procedure**

Based on responses to the following questions in the Teacher Questionnaire (TQR) and the School Questionnaire (SCQ), as well as a variable derived from the School Questionnaire data:

TQR-07: Regardless of whether or not you have formally scheduled time for reading instruction, in a typical week about how much time do you spend on reading instruction and/or activities with the students? (ATBR07)
(Open-response item; response in terms of minutes)

SCQ-07A: For the <fourth grade> students in your school: How many days per year is your school open for instruction? (ACBG07A)
(Open-response item)

ACDGDAYS: Days per Week the School is Open for Instruction (Derived variable from School Questionnaire)

Derive ATDGLIHY:

Step 1: Compute reading instructional hours per week:
Divide ATBR07 by 60.

Step 2: Compute reading instructional hours per day:
Divide results of Step 1 by ACDGDAYS.

Step 3: Compute reading instructional hours per year:
Multiply results from Step 2 by ACBG07A.

Set ATDGRIHY to missing if any source variable is missing.

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Section 4: **School Questionnaire**

Derived Variable Name:

ACDG03

Variable Label:

School Composition by Student Background

Title of International Report Exhibit

School Composition by Socioeconomic Background of the Student Body

Report Location[PIRLS Exhibit 5.1](#)**Procedure**

Based on responses to the following questions in the School Questionnaire:

SCQ-03: Approximately what percentage of students in your school have the following backgrounds?

"Come from economically disadvantaged homes" (ACBG03A)

"Come from economically affluent homes" (ACBG03B)

Response options: 1 = "0 to 10%"

2 = "11 to 25%"

3 = "26 to 50%"

4 = "More than 50%"

Derive ACDG03:

1 = "More Affluent" = IF (ACBG03A <=2 AND ACBG03B >= 3)

3 = "Disadvantaged" = IF (ACBG03A >=3 AND ACBG03B <= 2)

2 = "Neither More Affluent nor More Disadvantaged" = IF (All other combinations of ACBG03A and ACBG03B)

Set ACDG03 to missing if either source variable is missing.

1 = "More Affluent"

2 = "Neither More Affluent nor More Disadvantaged"

3 = "More Disadvantaged"

Trend Comments

See ACDG03 in PIRLS 2011.

Derived Variable Name:

ACDG09

Variable Label:

Size of School Library

Title of International Report Exhibit

Size of School Library

Report Location[PIRLS Exhibit 5.5](#)**Procedure**

Based on responses to the following questions in the School Questionnaire:

SCQ-09: Does your school have a school library? (ACBG09)

Response options: 1 = "Yes"

2 = "No"

SCQ-09A: Approximately how many books (print) with different titles does your school library have (exclude magazines and periodicals)? (ACBG09A)

Response options: 1 = "250 or fewer"

2 = "251–500"

3 = "501–2,000"

4 = "2,001–5,000"

5 = "5,001–10,000"

6 = "More than 10,000"

Derive ACDG09:

1 = "More than 5,000 Book Titles" = IF (ACBG09 = 1 AND ACBG09A > 4)

2 = "501–5,000 Book Titles" = IF (ACBG09 = 1 AND ACBG09A = 3 OR 4)

3 = "500 Book Titles or Fewer" = IF (ACBG09 = 1 AND ACBG09A = 1 OR 2)

4 = "No School Library" = IF (ACBG09 = 2)

Set ACDG09 to missing if ACBG09A is missing, except if ACBG09 = 2.

1 = "More than 5,000 Book Titles"

2 = "501–5,000 Book Titles"

3 = "500 Book Titles or Fewer"

4 = "No School Library"

Trend Comments

See ACDG09 in PIRLS 2011. Modifications made to source variable ACBG09A.

Derived Variable Name:

ACDGTIHY

Variable Label:

Instructional Hours per Year

Title of International Report Exhibit

Instruction Time Spent on Language and Reading

Report Location[PIRLS Exhibit 9.1](#)**Procedure**

Based on responses to the following questions in the School Questionnaire:

SCQ-07A: How many days per year is your school open for instruction? (ACBG07A)

(Open-response item)

SCQ-07B: What is the total instructional time, excluding breaks, in a typical day? (ACBG07B)

(Open-response item; response in terms of minutes)

Derive ACDGTIHY:

Step 1: Compute instructional hours per day:

Divide ACBG07B by 60.

Step 2: Compute hours of school per year:

Multiply the result of Step 1 by ACBG07A.

Set ACDGTIHY to missing if either source variable is missing.

Trend Comments

See ACDG06HY in PIRLS 2011. Modifications made to source variable ACBG08B.

Derived Variable Name:

ACDGDAYS

Variable Label:

Days per Week School Open for Instruction

Title of International Report Exhibit

Instruction Time Spent on Language and Reading

Report Location[PIRLS Exhibit 9.1](#)**Procedure**

Based on responses to the following question in the School Questionnaire:

SCQ-07C: In one calendar week, how many days is the school open for instruction? (ACBG07C)

Response Options: 1 = "6 Days"

2 = "5 1/2 Days"

3 = "5 Days"

4 = "4 1/2 Days"

5 = "4 Days"

6 = "Other"

Derive ACDGDAYS:

6 = IF (ACBG07C = 1)

5.5 = IF (ACBG07C = 2)

5 = IF (ACBG07C = 3)

4.5 = IF (ACBG07C = 4)

4 = IF (ACBG07C = 5)

3 = IF (ACBG07C = 6)

Set ACDGDAYS to missing if source variable is missing.

Trend Comments

See ACDG06 in PIRLS 2011.

Derived Variable Name:

ACDG11R

Variable Label:

Ratio of Students to Computers

Title of International Report Exhibit

Schools with Computers Available for Instruction

Report Location[PIRLS Exhibit 5.6](#)**Procedure**

Based on responses to the following questions in the School Questionnaire:

SCQ-02: What is the total enrollment of <fourth grade> students in your school as of <first day of month PIRLS testing begins, 2016>? (ACBG02)

(Open-response item)

SCQ-11: How many computers (including tablets) does your school have for use by <fourth grade> students? (ACBG11)

(Open-response item)

Derive ACDG11R:

Step 1: Compute number of students per computer:

Divide ACBG02 by ACBG11.

Step 2: Compute student to computer ratio:

Recode result of step 1 as follows:

1 = "1–2 Students per Computer" = IF (Number of students per computer < 2.5)

2 = "3–5 Students per Computer" = IF (Number of students per computer >= 2.5 AND Number of students per computer < 5.5)

3 = "6 or More Students per Computer" = IF (Number of students per computer >= 5.5)

4 = "No Computers Available" = IF (ACBG11 = 0)

Set ACDG11R to missing if either source variable is missing, except if ACBG11 = 0.

1 = "1–2 Students per Computer"

2 = "3–5 Students per Computer"

3 = "6 or More Students per Computer"

4 = "No Computers Available"



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