<TIMSS National Research Center Name>
<Address>

Identification Label

Student ID: _____

Student Name: _____

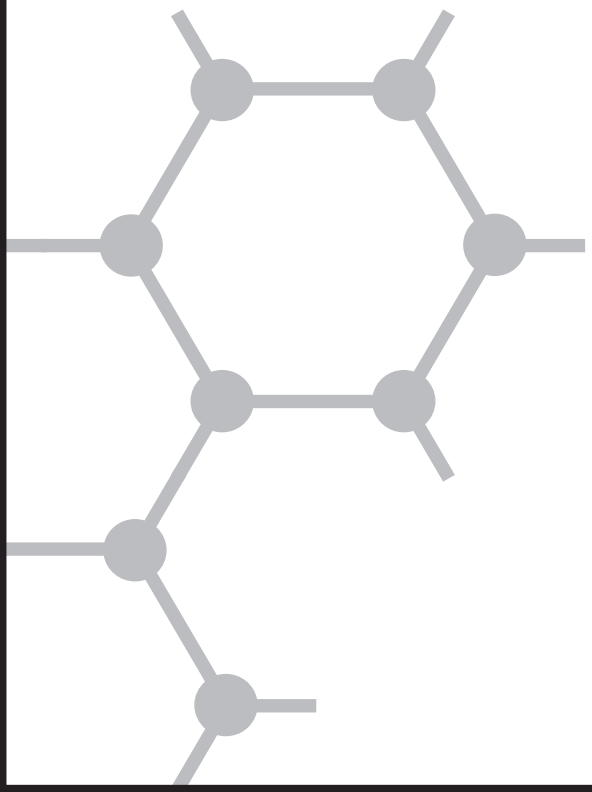
IEA Trends in International Mathematics and Science Study

TIMSS 2003

Main Survey

Student Questionnaire

<Grade 8>



General Directions

In this booklet, you will find questions about yourself. Some questions ask for facts while other questions ask for your opinions.

Read each question carefully and respond as accurately as possible. You may ask for help if you do not understand something or are not sure how to respond.

Some of the questions will be followed by a few possible choices indicated with a circle with a number in it. For these questions, shade in the circle with the response of your choice as shown in Examples 1, 2, and 3.

Example 1

Do you go to school?

*Fill in **one** circle only*

Yes ---------- ●

No ---------- ②

Example 2

How often do you do these things?

*Fill in **one** circle for each line*

		Every day	At least once a week	Once or twice a month	A few times a year	Never
a)	I listen to music	①	②	●	④	⑤
b)	I talk with my friends	●	②	③	④	⑤
c)	I play sports	①	●	③	④	⑤

Example 3

Indicate how much you agree with each of these statements.

*Fill in **one** circle for each line*

	Agree a lot	Agree a little	Disagree a little	Disagree a lot
a) Watching movies is fun	①	●	③	④
b) I like eating ice cream	●	②	③	④

Read each question carefully, and pick the answer you think is best. Fill in the circle next to or below your answer. If you decide to change your answer, erase your first answer and then fill in the circle next to or under your new answer. Ask for help if you do not understand something or are not sure how to answer.

Thank you for your time, effort, and thought in completing this questionnaire.

About You

1

When were you born?

A. Fill in the circle next to the year you were born

Year

① 1985
② 1986
③ 1987
④ 1988
⑤ 1989
⑥ 1990
⑦ 1991
⑧ 1992
⑨ Other

B. Fill in the circle next to the month you were born

Month

① January
② February
③ March
④ April
⑤ May
⑥ June
⑦ July
⑧ August
⑨ September
⑩ October
⑪ November
⑫ December

2

Are you a girl or a boy?

*Fill in **one** circle only*

Girl ---------- ①
Boy ---------- ②

3

How often do you speak <language of test> at home?

*Fill in **one** circle only*

Always ---------- ①

Almost always ---------- ②

Sometimes ---------- ③

Never ---------- ④

4

About how many books are there in your home? (Do not count magazines, newspapers, or your school books.)

*Fill in **one** circle only*

None or very few
(0-10 books) ---------- ①

Enough to fill one shelf
(11-25 books) ---------- ②

Enough to fill one bookcase
(26-100 books) ---------- ③

Enough to fill two bookcases
(101-200 books) ---------- ④

Enough to fill three or more bookcases
(more than 200 books) ---------- ⑤

5

Do you have any of these items at your home?

*Fill in **one** circle for each line*

		Yes	No
a)	Calculator	①	②
b)	Computer (do not include PlayStation®, GameCube®, XBox®, or other TV/video game computers)	①	②
c)	Study desk/table for your use	①	②
d)	Dictionary	①	②
e)	<country-specific>	①	②
f)	<country-specific>	①	②
g)	<country-specific>	①	②
h)	<country-specific>	①	②
i)	<country-specific>	①	②
j)	<country-specific>	①	②
k)	<country-specific>	①	②
l)	<country-specific>	①	②
m)	<country-specific>	①	②
n)	<country-specific>	①	②
o)	<country-specific>	①	②
p)	<country-specific>	①	②

6

A. What is the highest level of education completed by your mother (or stepmother or female guardian)?

*Fill in **one** circle only*

Did not finish <ISCED 1> or did not go to school ---------- ①

<ISCED 1> ---------- ②

<ISCED 2> ---------- ③

<ISCED 3> ---------- ④

<ISCED 4B> ---------- ⑤

<ISCED 5B> ---------- ⑥

<ISCED 5A, first degree> ---------- ⑦

Beyond <ISCED 5A, first degree> ---------- ⑧

I don't know ---------- ⑨

B. What is the highest level of education completed by your father (or stepfather or male guardian)?

*Fill in **one** circle only*

Did not finish <ISCED 1> or did not go to school ---------- ①

<ISCED 1> ---------- ②

<ISCED 2> ---------- ③

<ISCED 3> ---------- ④

<ISCED 4B> ---------- ⑤

<ISCED 5B> ---------- ⑥

<ISCED 5A, first degree> ---------- ⑦

Beyond <ISCED 5A, first degree> ---------- ⑧

I don't know ---------- ⑨

7

How far in school do you expect to go?

*Fill in **one** circle only*

Finish <ISCED 3> ---------- ①

Finish <ISCED 4B> ---------- ②

Finish <ISCED 5B> ---------- ③

Finish <ISCED 5A, first degree> ---------- ④

Beyond <ISCED 5A, first degree> ---------- ⑤

I don't know ---------- ⑥

Mathematics in School

8

How much do you agree with these statements about learning mathematics?

*Fill in **one** circle for each line*

		Agree a lot	Agree a little	Disagree a little	Disagree a lot
a)	I usually do well in mathematics	①	②	③	④
b)	I would like to take more mathematics in school	①	②	③	④
c)	Mathematics is more difficult for me than for many of my classmates	①	②	③	④
d)	I enjoy learning mathematics	①	②	③	④
e)	Sometimes, when I do not initially understand a new topic in mathematics, I know that I will never really understand it	①	②	③	④
f)	Mathematics is not one of my strengths	①	②	③	④
g)	I learn things quickly in mathematics	①	②	③	④

9

How much do you agree with these statements about mathematics?

*Fill in **one** circle for each line*

		Agree a lot	Agree a little	Disagree a little	Disagree a lot
a)	I think learning mathematics will help me in my daily life	①	②	③	④
b)	I need mathematics to learn other school subjects	①	②	③	④
c)	I need to do well in mathematics to get into the <university> of my choice	①	②	③	④
d)	I would like a job that involved using mathematics	①	②	③	④
e)	I need to do well in mathematics to get the job I want	①	②	③	④

10

How often do you do these things in your mathematics lessons?

*Fill in **one** circle for each line*

		Every or almost every lesson	About half the lessons	Some lessons	Never
a)	We practice adding, subtracting, multiplying, and dividing without using a calculator	①	②	③	④
b)	We work on fractions and decimals	①	②	③	④
c)	We interpret data in tables, charts, or graphs	①	②	③	④
d)	We write equations and functions to represent relationships	①	②	③	④
e)	We work together in small groups	①	②	③	④
f)	We relate what we are learning in mathematics to our daily lives	①	②	③	④
g)	We explain our answers	①	②	③	④
h)	We decide on our own procedures for solving complex problems	①	②	③	④
i)	We review our homework	①	②	③	④
j)	We listen to the teacher give a lecture-style presentation	①	②	③	④
k)	We work problems on our own	①	②	③	④
l)	We begin our homework in class	①	②	③	④
m)	We have a quiz or test	①	②	③	④
n)	We use calculators	①	②	③	④

Science in School

11

How much do you agree with these statements about learning science?

*Fill in **one** circle for each line*

		Agree a lot	Agree a little	Disagree a little	Disagree a lot
a)	I usually do well in science	①	②	③	④
b)	I would like to take more science in school	①	②	③	④
c)	Science is more difficult for me than for many of my classmates	①	②	③	④
d)	I enjoy learning science	①	②	③	④
e)	Sometimes, when I do not initially understand a new topic in science, I know that I will never really understand it	①	②	③	④
f)	Science is not one of my strengths	①	②	③	④
g)	I learn things quickly in science	①	②	③	④

12

How much do you agree with these statements about science?

*Fill in **one** circle for each line*

		Agree a lot	Agree a little	Disagree a little	Disagree a lot
a)	I think learning science will help me in my daily life	①	②	③	④
b)	I need science to learn other school subjects	①	②	③	④
c)	I need to do well in science to get into the <university> of my choice	①	②	③	④
d)	I would like a job that involved using science	①	②	③	④
e)	I need to do well in science to get the job I want	①	②	③	④

13

How often do you do these things in your science lessons?

*Fill in **one** circle for each line*

		Every or almost every lesson	About half the lessons	Some lessons	Never
a)	We watch the teacher demonstrate an experiment or investigation	①	②	③	④
b)	We formulate hypotheses or predictions to be tested	①	②	③	④
c)	We design or plan an experiment or investigation	①	②	③	④
d)	We conduct an experiment or investigation	①	②	③	④
e)	We work in small groups on an experiment or investigation	①	②	③	④
f)	We write explanations about what was observed and why it happened	①	②	③	④
g)	We study the impact of technology on society	①	②	③	④
h)	We relate what we are learning in science to our daily lives	①	②	③	④
i)	We present our work to the class	①	②	③	④
j)	We review our homework	①	②	③	④
k)	We listen to the teacher give a lecture-style presentation	①	②	③	④
l)	We work problems on our own	①	②	③	④
m)	We begin our homework in class	①	②	③	④
n)	We have a quiz or test	①	②	③	④

Computers

14

A. Do you ever use a computer? (Do not include PlayStation®, GameCube®, XBox®, or other TV/video game computers).

	Yes	No
*Fill in **one** circle only*	①	②

*If **No**, please go to question* **15** →

B. Where do you use a computer?

*Fill in **one** circle for each line*

		Yes	No
a)	At home	①	②
b)	At school	①	②
c)	At a library	①	②
d)	At a friend's home	①	②
e)	At an Internet café	①	②
f)	Elsewhere	①	②

C. How often do you do these things with a computer?

*Fill in **one** circle for each line*

		Every day	At least once a week	Once or twice a month	A few times a year	Never
a)	I look up ideas and information for mathematics	①	②	③	④	⑤
b)	I look up ideas and information for science	①	②	③	④	⑤
c)	I write reports for school	①	②	③	④	⑤
d)	I process and analyze data	①	②	③	④	⑤

Your School

15

How much do you agree with these statements about your school?

*Fill in **one** circle for each line*

		Agree a lot	Agree a little	Disagree a little	Disagree a lot
a)	I like being in school	①	②	③	④
b)	I think that students in my school try to do their best	①	②	③	④
c)	I think that teachers in my school care about the students	①	②	③	④
d)	I think that teachers in my school want students to do their best	①	②	③	④

16

<u>In school</u>, did any of these things happen during the <u>last month</u>?

*Fill in **one** circle for each line*

		Yes	No
a)	Something of mine was stolen	①	②
b)	I was hit or hurt by other student(s) (e.g., shoving, hitting, kicking)	①	②
c)	I was made to do things I didn't want to do by other students	①	②
d)	I was made fun of or called names	①	②
e)	I was left out of activities by other students	①	②

Things You Do Outside of School

17

On a normal school day, how much time do you spend before or after school doing each of these things?

*Fill in **one** circle for each line*

		No time	Less than 1 hour	1-2 hours	More than 2 but less than 4 hours	4 or more hours
a)	I watch television and videos	①	②	③	④	⑤
b)	I play computer games	①	②	③	④	⑤
c)	I play or talk with friends	①	②	③	④	⑤
d)	I do jobs at home	①	②	③	④	⑤
e)	I work at a paid job	①	②	③	④	⑤
f)	I play sports	①	②	③	④	⑤
g)	I read a book for enjoyment	①	②	③	④	⑤
h)	I use the internet	①	②	③	④	⑤
i)	I do homework	①	②	③	④	⑤

18

A. During this school year, how often have you had extra lessons or tutoring in mathematics that is not part of your regular class?

*Fill in **one** circle only*

Every or almost every day ---------- ①

Once or twice a week ---------- ②

Sometimes ---------- ③

Never or almost never ---------- ④

B. During this school year, how often have you had extra lessons or tutoring in science that is not part of your regular class?

*Fill in **one** circle only*

Every or almost every day ---------- ①

Once or twice a week ---------- ②

Sometimes ---------- ③

Never or almost never ---------- ④

19

A. How often does your teacher give you homework in mathematics?

*Fill in **one** circle only*

Every day ---------- ①

3 or 4 times a week ---------- ②

1 or 2 times a week ---------- ③

Less than once a week ---------- ④

Never ---------- ⑤

*If **Never**, please go to question* **20** →

B. When your teacher gives you mathematics homework, about how many minutes are you usually given?

*Fill in **one** circle only*

Fewer than 15 minutes ---------- ①

15–30 minutes ---------- ②

31–60 minutes ---------- ③

61–90 minutes ---------- ④

More than 90 minutes ---------- ⑤

20

A. How often does your teacher give you homework in science?

*Fill in **one** circle only*

Every day ---------- ①

3 or 4 times a week ---------- ②

1 or 2 times a week ---------- ③

Less than once a week ---------- ④

Never ---------- ⑤

*If **Never**, please go to question* **21**

B. When your teacher gives you science homework, about how many minutes are you usually given?

*Fill in **one** circle only*

Fewer than 15 minutes ---------- ①

15–30 minutes ---------- ②

31–60 minutes ---------- ③

61–90 minutes ---------- ④

More than 90 minutes ---------- ⑤

More About You

21

Including yourself, how many people live in your home?

*Fill in **one** circle only*

2 ---------- ②

3 ---------- ③

4 ---------- ④

5 ---------- ⑤

6 ---------- ⑥

7 ---------- ⑦

8 or more ---------- ⑧

22

A. Was your mother (or stepmother or female guardian) born in <country>?

	Yes	No
*Fill in **one** circle only*	①	②

B. Was your father (or stepfather or male guardian) born in <country>?

	Yes	No
*Fill in **one** circle only*	①	②

23

A. Were you born in <country>?

	Yes	No
*Fill in **one** circle only*	①	②

*If **Yes**, you have completed the questionnaire*

B. If you were not born in <country>, how old were you when you came to <country>?

*Fill in **one** circle only*

Older than 10 years old ---------- ①

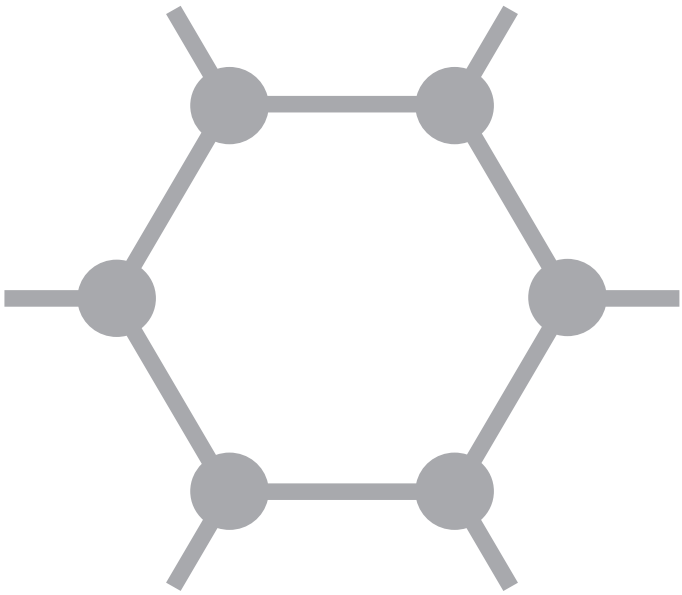
5 to 10 years old ---------- ②

Younger than 5 years old ---------- ③

Thank You

for completing this questionnaire

TIMSS International Study Center
Boston College
Chestnut Hill, MA 02467



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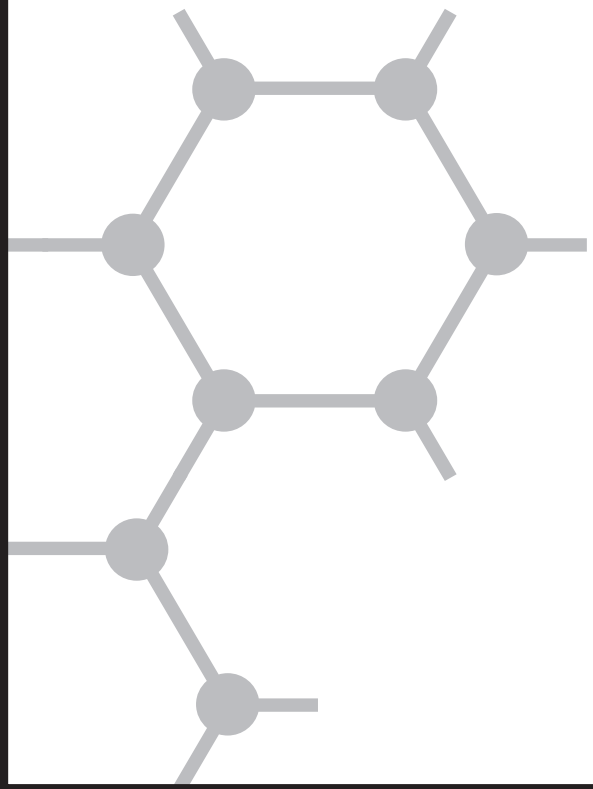
(Separate Science Subjects)

<Grade 8>



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Read each question carefully and respond as accurately as possible. You may ask for help if you do not understand something or are not sure how to respond.

Some of the questions will be followed by a few possible choices indicated with a circle with a number in it. For these questions, shade in the circle with the response of your choice as shown in Examples 1, 2, and 3.

Example 1

Do you go to school?

*Fill in **one** circle only*

Yes ---------- ●

No ---------- ②

Example 2

How often do you do these things?

*Fill in **one** circle for each line*

		Every day	At least once a week	Once or twice a month	A few times a year	Never
a)	I listen to music	①	②	●	④	⑤
b)	I talk with my friends	●	②	③	④	⑤
c)	I play sports	①	●	③	④	⑤

Example 3

Indicate how much you agree with each of these statements.

*Fill in **one** circle for each line*

	Agree a lot	Agree a little	Disagree a little	Disagree a lot
a) Watching movies is fun	①	●	③	④
b) I like eating ice cream	●	②	③	④

Read each question carefully, and pick the answer you think is best. Fill in the circle next to or below your answer. If you decide to change your answer, erase your first answer and then fill in the circle next to or under your new answer. Ask for help if you do not understand something or are not sure how to answer.

Thank you for your time, effort, and thought in completing this questionnaire.

About You

1

When were you born?

A. Fill in the circle next to the year you were born

Year

① 1985
② 1986
③ 1987
④ 1988
⑤ 1989
⑥ 1990
⑦ 1991
⑧ 1992
⑨ Other

B. Fill in the circle next to the month you were born

Month

① January
② February
③ March
④ April
⑤ May
⑥ June
⑦ July
⑧ August
⑨ September
⑩ October
⑪ November
⑫ December

2

Are you a girl or a boy?

*Fill in **one** circle only*

Girl ---------- ①
Boy ---------- ②

3

How often do you speak <language of test> at home?

*Fill in **one** circle only*

Always ---------- ①

Almost always ---------- ②

Sometimes ---------- ③

Never ---------- ④

4

About how many books are there in your home? (Do not count magazines, newspapers, or your school books.)

*Fill in **one** circle only*

None or very few
(0-10 books) ---------- ①

Enough to fill one shelf
(11-25 books) ---------- ②

Enough to fill one bookcase
(26-100 books) ---------- ③

Enough to fill two bookcases
(101-200 books) ---------- ④

Enough to fill three or more bookcases
(more than 200 books) ---------- ⑤

5

Do you have any of these items at your home?

*Fill in **one** circle for each line*

		Yes	No
a)	Calculator	①	②
b)	Computer (do not include PlayStation®, GameCube®, XBox®, or other TV/video game computers)	①	②
c)	Study desk/table for your use	①	②
d)	Dictionary	①	②
e)	<country-specific>	①	②
f)	<country-specific>	①	②
g)	<country-specific>	①	②
h)	<country-specific>	①	②
i)	<country-specific>	①	②
j)	<country-specific>	①	②
k)	<country-specific>	①	②
l)	<country-specific>	①	②
m)	<country-specific>	①	②
n)	<country-specific>	①	②
o)	<country-specific>	①	②
p)	<country-specific>	①	②

6

A. What is the highest level of education completed by your mother (or stepmother or female guardian)?

*Fill in **one** circle only*

Did not finish <ISCED 1> or did not go to school ---------- ①

<ISCED 1> ---------- ②

<ISCED 2> ---------- ③

<ISCED 3> ---------- ④

<ISCED 4B> ---------- ⑤

<ISCED 5B> ---------- ⑥

<ISCED 5A, first degree> ---------- ⑦

Beyond <ISCED 5A, first degree> ---------- ⑧

I don't know ---------- ⑨

B. What is the highest level of education completed by your father (or stepfather or male guardian)?

*Fill in **one** circle only*

Did not finish <ISCED 1> or did not go to school ---------- ①

<ISCED 1> ---------- ②

<ISCED 2> ---------- ③

<ISCED 3> ---------- ④

<ISCED 4B> ---------- ⑤

<ISCED 5B> ---------- ⑥

<ISCED 5A, first degree> ---------- ⑦

Beyond <ISCED 5A, first degree> ---------- ⑧

I don't know ---------- ⑨

7

How far in school do you expect to go?

*Fill in **one** circle only*

Finish <ISCED 3> ---------- ①

Finish <ISCED 4B> ---------- ②

Finish <ISCED 5B> ---------- ③

Finish <ISCED 5A, first degree> ---------- ④

Beyond <ISCED 5A, first degree> ---------- ⑤

I don't know ---------- ⑥

Mathematics in School

8

How much do you agree with these statements about learning mathematics?

*Fill in **one** circle for each line*

		Agree a lot	Agree a little	Disagree a little	Disagree a lot
a)	I usually do well in mathematics	①	②	③	④
b)	I would like to take more mathematics in school	①	②	③	④
c)	Mathematics is more difficult for me than for many of my classmates	①	②	③	④
d)	I enjoy learning mathematics	①	②	③	④
e)	Sometimes, when I do not initially understand a new topic in mathematics, I know that I will never really understand it	①	②	③	④
f)	Mathematics is not one of my strengths	①	②	③	④
g)	I learn things quickly in mathematics	①	②	③	④

9

How much do you agree with these statements about mathematics?

*Fill in **one** circle for each line*

	Agree a lot	Agree a little	Disagree a little	Disagree a lot
a) I think learning mathematics will help me in my daily life	①	②	③	④
b) I need mathematics to learn other school subjects	①	②	③	④
c) I need to do well in mathematics to get into the <university> of my choice	①	②	③	④
d) I would like a job that involved using mathematics	①	②	③	④
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10

How often do you do these things in your mathematics lessons?

*Fill in **one** circle for each line*

		Every or almost every lesson	About half the lessons	Some lessons	Never
a)	We practice adding, subtracting, multiplying, and dividing without using a calculator	①	②	③	④
b)	We work on fractions and decimals	①	②	③	④
c)	We interpret data in tables, charts, or graphs	①	②	③	④
d)	We write equations and functions to represent relationships	①	②	③	④
e)	We work together in small groups	①	②	③	④
f)	We relate what we are learning in mathematics to our daily lives	①	②	③	④
g)	We explain our answers	①	②	③	④
h)	We decide on our own procedures for solving complex problems	①	②	③	④
i)	We review our homework	①	②	③	④
j)	We listen to the teacher give a lecture-style presentation	①	②	③	④
k)	We work problems on our own	①	②	③	④
l)	We begin our homework in class	①	②	③	④
m)	We have a quiz or test	①	②	③	④
n)	We use calculators	①	②	③	④

Biology in School

11

Are you studying biology in school this year?

	Yes	No
*Fill in **one** circle only*	①	②

*If **No**, please go to question* **15**

12

How much do you agree with these statements about learning biology?

*Fill in **one** circle for each line*

		Agree a lot	Agree a little	Disagree a little	Disagree a lot
a)	I usually do well in biology	①	②	③	④
b)	I would like to take more biology in school	①	②	③	④
c)	Biology is more difficult for me than for many of my classmates	①	②	③	④
d)	I enjoy learning biology	①	②	③	④
e)	Sometimes, when I do not initially understand a new topic in biology, I know that I will never really understand it	①	②	③	④
f)	Biology is not one of my strengths	①	②	③	④
g)	I learn things quickly in biology	①	②	③	④

13

How much do you agree with these statements about biology?

*Fill in **one** circle for each line*

	Agree a lot	Agree a little	Disagree a little	Disagree a lot
a) I think learning biology will help me in my daily life	①	②	③	④
b) I need biology to learn other school subjects	①	②	③	④
c) I need to do well in biology to get into the <university> of my choice	①	②	③	④
d) I would like a job that involved using biology	①	②	③	④
e) I need to do well in biology to get the job I want	①	②	③	④

14

How often do you do these things in your biology lessons?

*Fill in **one** circle for each line*

		Every or almost every lesson	About half the lessons	Some lessons	Never
a)	We watch the teacher demonstrate an experiment or investigation	①	②	③	④
b)	We formulate hypotheses or predictions to be tested	①	②	③	④
c)	We design or plan an experiment or investigation	①	②	③	④
d)	We conduct an experiment or investigation	①	②	③	④
e)	We work in small groups on an experiment or investigation	①	②	③	④
f)	We write explanations about what was observed and why it happened	①	②	③	④
g)	We study the impact of technology on society	①	②	③	④
h)	We relate what we are learning in biology to our daily lives	①	②	③	④
i)	We present our work to the class	①	②	③	④
j)	We review our homework	①	②	③	④
k)	We listen to the teacher give a lecture-style presentation	①	②	③	④
l)	We work problems on our own	①	②	③	④
m)	We begin our homework in class	①	②	③	④
n)	We have a quiz or test	①	②	③	④

Earth Science in School

15

Are you studying earth science in school this year?

	Yes	No
*Fill in **one** circle only*	①	②

*If **No**, please go to question* **19**

16

How much do you agree with these statements about learning earth science?

*Fill in **one** circle for each line*

		Agree a lot	Agree a little	Disagree a little	Disagree a lot
a)	I usually do well in earth science	①	②	③	④
b)	I would like to take more earth science in school	①	②	③	④
c)	Earth science is more difficult for me than for many of my classmates	①	②	③	④
d)	I enjoy learning earth science	①	②	③	④
e)	Sometimes, when I do not initially understand a new topic in earth science, I know that I will never really understand it	①	②	③	④
f)	Earth science is not one of my strengths	①	②	③	④
g)	I learn things quickly in earth science	①	②	③	④

17

How much do you agree with these statements about earth science?

*Fill in **one** circle for each line*

	Agree a lot	Agree a little	Disagree a little	Disagree a lot
a) I think learning earth science will help me in my daily life	①	②	③	④
b) I need earth science to learn other school subjects	①	②	③	④
c) I need to do well in earth science to get into the <university> of my choice	①	②	③	④
d) I would like a job that involved using earth science	①	②	③	④
e) I need to do well in earth science to get the job I want	①	②	③	④

18

How often do you do these things in your earth science lessons?

*Fill in **one** circle for each line*

		Every or almost every lesson	About half the lessons	Some lessons	Never
a)	We watch the teacher demonstrate an experiment or investigation	①	②	③	④
b)	We formulate hypotheses or predictions to be tested	①	②	③	④
c)	We design or plan an experiment or investigation	①	②	③	④
d)	We conduct an experiment or investigation	①	②	③	④
e)	We work in small groups on an experiment or investigation	①	②	③	④
f)	We write explanations about what was observed and why it happened	①	②	③	④
g)	We study the impact of technology on society	①	②	③	④
h)	We relate what we are learning in earth science to our daily lives	①	②	③	④
i)	We present our work to the class	①	②	③	④
j)	We review our homework	①	②	③	④
k)	We listen to the teacher give a lecture-style presentation	①	②	③	④
l)	We work problems on our own	①	②	③	④
m)	We begin our homework in class	①	②	③	④
n)	We have a quiz or test	①	②	③	④

Chemistry in School

19

Are you studying chemistry in school this year?

	Yes	No
*Fill in **one** circle only*	①	②

*If **No**, please go to question* **23**

20

How much do you agree with these statements about learning chemistry?

*Fill in **one** circle for each line*

		Agree a lot	Agree a little	Disagree a little	Disagree a lot
a)	I usually do well in chemistry	①	②	③	④
b)	I would like to take more chemistry in school	①	②	③	④
c)	Chemistry is more difficult for me than for many of my classmates	①	②	③	④
d)	I enjoy learning chemistry	①	②	③	④
e)	Sometimes, when I do not initially understand a new topic in chemistry, I know that I will never really understand it	①	②	③	④
f)	Chemistry is not one of my strengths	①	②	③	④
g)	I learn things quickly in chemistry	①	②	③	④

21

How much do you agree with these statements about chemistry?

*Fill in **one** circle for each line*

		Agree a lot	Agree a little	Disagree a little	Disagree a lot
a)	I think learning chemistry will help me in my daily life	①	②	③	④
b)	I need chemistry to learn other school subjects	①	②	③	④
c)	I need to do well in chemistry to get into the <university> of my choice	①	②	③	④
d)	I would like a job that involved using chemistry	①	②	③	④
e)	I need to do well in chemistry to get the job I want	①	②	③	④

22

How often do you do these things in your chemistry lessons?

*Fill in **one** circle for each line*

		Every or almost every lesson	About half the lessons	Some lessons	Never
a)	We watch the teacher demonstrate an experiment or investigation	①	②	③	④
b)	We formulate hypotheses or predictions to be tested	①	②	③	④
c)	We design or plan an experiment or investigation	①	②	③	④
d)	We conduct an experiment or investigation	①	②	③	④
e)	We work in small groups on an experiment or investigation	①	②	③	④
f)	We write explanations about what was observed and why it happened	①	②	③	④
g)	We study the impact of technology on society	①	②	③	④
h)	We relate what we are learning in chemistry to our daily lives	①	②	③	④
i)	We present our work to the class	①	②	③	④
j)	We review our homework	①	②	③	④
k)	We listen to the teacher give a lecture-style presentation	①	②	③	④
l)	We work problems on our own	①	②	③	④
m)	We begin our homework in class	①	②	③	④
n)	We have a quiz or test	①	②	③	④

Physics in School

23

Are you studying physics in school this year?

	Yes	No
*Fill in **one** circle only*	①	②

*If **No**, please go to question* **27**

24

How much do you agree with these statements about learning physics?

*Fill in **one** circle for each line*

		Agree a lot	Agree a little	Disagree a little	Disagree a lot
a)	I usually do well in physics	①	②	③	④
b)	I would like to take more physics in school	①	②	③	④
c)	Physics is more difficult for me than for many of my classmates	①	②	③	④
d)	I enjoy learning physics	①	②	③	④
e)	Sometimes, when I do not initially understand a new topic in physics, I know that I will never really understand it	①	②	③	④
f)	Physics is not one of my strengths	①	②	③	④
g)	I learn things quickly in physics	①	②	③	④

25

How much do you agree with these statements about physics?

*Fill in **one** circle for each line*

	Agree a lot	Agree a little	Disagree a little	Disagree a lot
a) I think learning physics will help me in my daily life	①	②	③	④
b) I need physics to learn other school subjects	①	②	③	④
c) I need to do well in physics to get into the <university> of my choice	①	②	③	④
d) I would like a job that involved using physics	①	②	③	④
e) I need to do well in physics to get the job I want	①	②	③	④

26

How often do you do these things in your physics lessons?

*Fill in **one** circle for each line*

		Every or almost every lesson	About half the lessons	Some lessons	Never
a)	We watch the teacher demonstrate an experiment or investigation	①	②	③	④
b)	We formulate hypotheses or predictions to be tested	①	②	③	④
c)	We design or plan an experiment or investigation	①	②	③	④
d)	We conduct an experiment or investigation	①	②	③	④
e)	We work in small groups on an experiment or investigation	①	②	③	④
f)	We write explanations about what was observed and why it happened	①	②	③	④
g)	We study the impact of technology on society	①	②	③	④
h)	We relate what we are learning in physics to our daily lives	①	②	③	④
i)	We present our work to the class	①	②	③	④
j)	We review our homework	①	②	③	④
k)	We listen to the teacher give a lecture-style presentation	①	②	③	④
l)	We work problems on our own	①	②	③	④
m)	We begin our homework in class	①	②	③	④
n)	We have a quiz or test	①	②	③	④

Computers

27

A. Do you ever use a computer? (Do not include PlayStation®, GameCube®, XBox®, or other TV/video game computers).

	Yes	No
*Fill in **one** circle only*	①	②

*If **No**, please go to question* **28**

B. Where do you use a computer?

*Fill in **one** circle for each line*

		Yes	No
a)	At home	①	②
b)	At school	①	②
c)	At a library	①	②
d)	At a friend's home	①	②
e)	At an Internet café	①	②
f)	Elsewhere	①	②

27 continued

C. How often do you do these things with a computer?

*Fill in **one** circle for each line*

	Every day	At least once a week	Once or twice a month	A few times a year	Never
a) I look up ideas and information for mathematics	①	②	③	④	⑤
b) I look up ideas and information for biology	①	②	③	④	⑤
c) I look up ideas and information for earth science	①	②	③	④	⑤
d) I look up ideas and information for chemistry	①	②	③	④	⑤
e) I look up ideas and information for physics	①	②	③	④	⑤
f) I write reports for school	①	②	③	④	⑤
g) I process and analyze data	①	②	③	④	⑤

Your School

28

How much do you agree with these statements about your school?

*Fill in **one** circle for each line*

		Agree a lot	Agree a little	Disagree a little	Disagree a lot
a)	I like being in school	①	②	③	④
b)	I think that students in my school try to do their best	①	②	③	④
c)	I think that teachers in my school care about the students	①	②	③	④
d)	I think that teachers in my school want students to do their best	①	②	③	④

29

<u>In school</u>, did any of these things happen during the <u>last month</u>?

*Fill in **one** circle for each line*

		Yes	No
a)	Something of mine was stolen	①	②
b)	I was hit or hurt by other student(s) (e.g., shoving, hitting, kicking)	①	②
c)	I was made to do things I didn't want to do by other students	①	②
d)	I was made fun of or called names	①	②
e)	I was left out of activities by other students	①	②

Things You Do Outside of School

30

On a normal school day, how much time do you spend before or after school doing each of these things?

*Fill in **one** circle for each line*

	No time	Less than 1 hour	1-2 hours	More than 2 but less than 4 hours	4 or more hours
a) I watch television and videos	①	②	③	④	⑤
b) I play computer games	①	②	③	④	⑤
c) I play or talk with friends	①	②	③	④	⑤
d) I do jobs at home	①	②	③	④	⑤
e) I work at a paid job	①	②	③	④	⑤
f) I play sports	①	②	③	④	⑤
g) I read a book for enjoyment	①	②	③	④	⑤
h) I use the internet	①	②	③	④	⑤
i) I do homework	①	②	③	④	⑤

31

During this school year, how often have you had extra lessons or tutoring that is not part of your regular class in each of the following subjects?

*Fill in **one** circle for each line*

	Every or almost every day	Once or twice a week	Some-times	Never or almost never
a) Mathematics	①	②	③	④
b) Biology	①	②	③	④
c) Earth science	①	②	③	④
d) Chemistry	①	②	③	④
e) Physics	①	②	③	④

32

A. How often does your teacher give you homework in each of the following subjects?

*Fill in **one** circle for each line*

	Every day	3 or 4 times a week	1 or 2 times a week	Less than once a week	Never
a) Mathematics	①	②	③	④	⑤
b) Biology	①	②	③	④	⑤
c) Earth science	①	②	③	④	⑤
d) Chemistry	①	②	③	④	⑤
e) Physics	①	②	③	④	⑤

B. When your teacher gives you homework in each of the following subjects, about how many minutes are you usually given?

*Fill in **one** circle for each line*

	Fewer than 15 minutes	15–30 minutes	31–60 minutes	61–90 minutes	More than 90 minutes
a) Mathematics	①	②	③	④	⑤
b) Biology	①	②	③	④	⑤
c) Earth science	①	②	③	④	⑤
d) Chemistry	①	②	③	④	⑤
e) Physics	①	②	③	④	⑤

More About You

33

Including yourself, how many people live in your home?

*Fill in **one** circle only*

2 ---------- ②

3 ---------- ③

4 ---------- ④

5 ---------- ⑤

6 ---------- ⑥

7 ---------- ⑦

8 or more ---------- ⑧

34

A. Was your mother (or stepmother or female guardian) born in <country>?

	Yes	No
*Fill in **one** circle only*	①	②

B. Was your father (or stepfather or male guardian) born in <country>?

	Yes	No
*Fill in **one** circle only*	①	②

35

A. Were you born in <country>?

	Yes	No
*Fill in **one** circle only*	①	②

*If **Yes**, you have completed the questionnaire*

B. If you were not born in <country>, how old were you when you came to <country>?

*Fill in **one** circle only*

Older than 10 years old ①

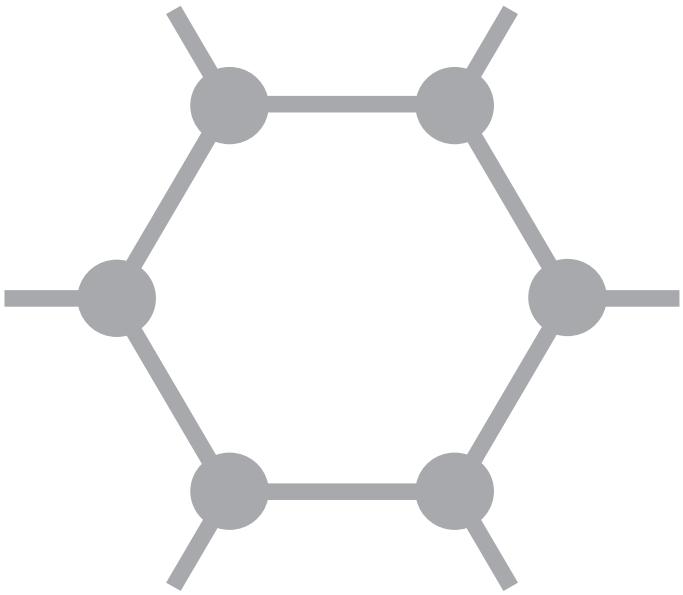
5 to 10 years old ②

Younger than 5 years old ③

Thank You

for completing this questionnaire

TIMSS International Study Center
Boston College
Chestnut Hill, MA 02467



<TIMSS National Research Center Name>
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Identification Label

Student ID: _____

Student Name: _____

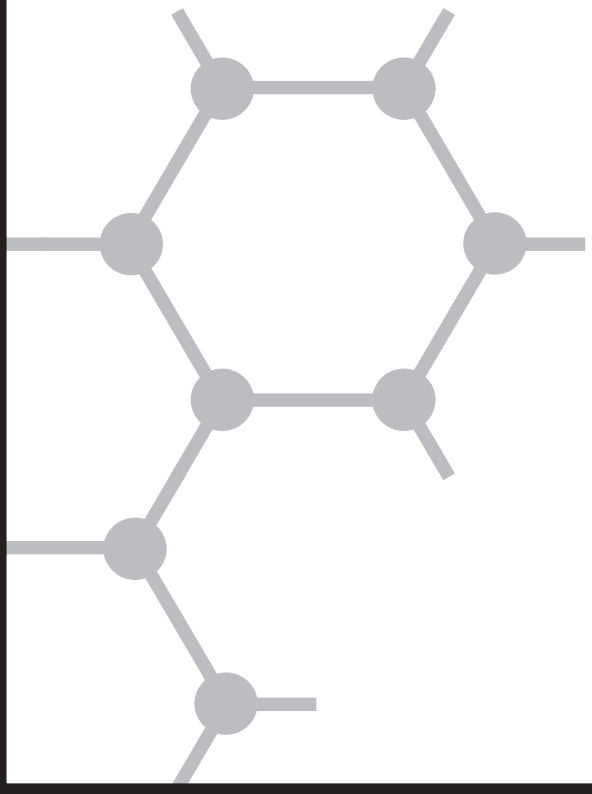
IEA Trends in International Mathematics and Science Study

TIMSS 2003

Main Survey

Student Questionnaire

<Grade 4>



General Directions

In this booklet, you will find questions about yourself. Some questions ask for facts while other questions ask for your opinions.

Read each question carefully and answer as accurately as possible. You may ask for help if you do not understand something or are not sure how to answer.

Some of the questions will be followed by a few possible choices indicated with a circle with a number in it. For these questions, shade in the circle with the answer of your choice as shown in Examples 1, 2, and 3.

Example 1

Do you go to school?

*Fill in **one** circle only*

Yes ---------- ●

No ---------- ②

Example 2

How often do you do these things?

*Fill in **one** circle for each line*

		Every day	At least once a week	Once or twice a month	A few times a year	Never
a)	I listen to music	①	②	●	④	⑤
b)	I talk with my friends	●	②	③	④	⑤
c)	I play sports	①	●	③	④	⑤

Example 3

Indicate how much you agree with each of these statements.

*Fill in **one** circle for each line*

	Agree a lot	Agree a little	Disagree a little	Disagree a lot
a) Watching movies is fun	①	●	③	④
b) I like eating ice cream	●	②	③	④

Read each question carefully, and pick the answer you think is best. Fill in the circle next to or below your answer. If you decide to change your answer, erase your first answer and then fill in the circle next to or under your new answer. Ask for help if you do not understand something or are not sure how to answer.

Thank you for your time, effort, and thought in completing this questionnaire.

About You

1

When were you born?

A. Fill in the circle next to the year you were born

Year

① 1990
② 1991
③ 1992
④ 1993
⑤ 1994
⑥ 1995
⑦ 1996
⑧ Other

B. Fill in the circle next to the month you were born

Month

① January
② February
③ March
④ April
⑤ May
⑥ June
⑦ July
⑧ August
⑨ September
⑩ October
⑪ November
⑫ December

2

Are you a girl or a boy?

*Fill in **one** circle only*

Girl ---------- ①

Boy ---------- ②

3

How often do you speak <language of test> at home?

*Fill in **one** circle only*

Always ---------- ①

Almost always ---------- ②

Sometimes ---------- ③

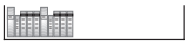
Never ---------- ④

4

About how many books are there in your home? (Do not count magazines, newspapers, or your school books.)

*Fill in **one** circle only*

None or very few
(0-10 books) ---------- ① This shows 10 books

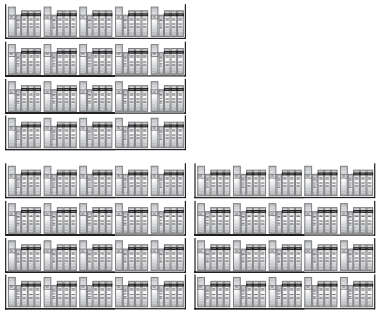


Enough to fill one shelf
(11-25 books) ---------- ② This shows 25 books

Enough to fill one bookcase
(26-100 books) ---------- ③ This shows 100 books

Enough to fill two bookcases
(101-200 books) ---------- ④ This shows 200 books

Enough to fill three or more bookcases
(more than 200 books) ---------- ⑤ This shows more than 200 books



5

Do you have any of these items at your home?

*Fill in **one** circle for each line*

		Yes	No
a)	Calculator	①	②
b)	Computer (do not include PlayStation®, GameCube®, XBox®, or other TV/video game computers)	①	②
c)	Study desk/table for your use	①	②
d)	Dictionary	①	②
e)	<country-specific>	①	②
f)	<country-specific>	①	②
g)	<country-specific>	①	②
h)	<country-specific>	①	②
i)	<country-specific>	①	②
j)	<country-specific>	①	②
k)	<country-specific>	①	②
l)	<country-specific>	①	②
m)	<country-specific>	①	②
n)	<country-specific>	①	②
o)	<country-specific>	①	②
p)	<country-specific>	①	②

Mathematics in School

6

How much do you agree with these statements about learning mathematics?

*Fill in **one** circle for each line*

		Agree a lot	Agree a little	Disagree a little	Disagree a lot
a)	I usually do well in mathematics	①	②	③	④
b)	I would like to do more mathematics in school	①	②	③	④
c)	Mathematics is harder for me than for many of my classmates	①	②	③	④
d)	I enjoy learning mathematics	①	②	③	④
e)	I am just not good at mathematics	①	②	③	④
f)	I learn things quickly in mathematics	①	②	③	④

7

How often do you do these things in your mathematics lessons?

*Fill in **one** circle for each line*

		Every or almost every lesson	About half the lessons	Some lessons	Never
a)	I practice adding, subtracting, multiplying, and dividing without using a calculator	①	②	③	④
b)	I work on fractions and decimals	①	②	③	④
c)	I measure things in the classroom and around the school	①	②	③	④
d)	I make tables, charts, or graphs	①	②	③	④
e)	I learn about shapes such as circles, triangles, and rectangles	①	②	③	④
f)	I work with other students in small groups	①	②	③	④
g)	I explain my answers	①	②	③	④
h)	I listen to the teacher talk	①	②	③	④
i)	I work problems on my own	①	②	③	④
j)	I use a calculator	①	②	③	④

Science in School

8

How much do you agree with these statements about learning science?

*Fill in **one** circle for each line*

		Agree a lot	Agree a little	Disagree a little	Disagree a lot
a)	I usually do well in science	①	②	③	④
b)	I would like to do more science in school	①	②	③	④
c)	Science is harder for me than for many of my classmates	①	②	③	④
d)	I enjoy learning science	①	②	③	④
e)	I am just not good at science	①	②	③	④
f)	I learn things quickly in science	①	②	③	④

9

In school, how often do you do these things?

*Fill in **one** circle for each line*

	At least once a week	Once or twice a month	A few times a year	Never
a) I watch the teacher do a science experiment	①	②	③	④
b) I design or plan a science experiment or investigation	①	②	③	④
c) I do a science experiment or investigation	①	②	③	④
d) I work with other students in a small group on a science experiment or investigation	①	②	③	④
e) I write or give an explanation for something I am studying in science	①	②	③	④
f) I look at something like the weather or a plant growing and write down what I see	①	②	③	④
g) I listen to the teacher talk	①	②	③	④
h) I work problems on my own	①	②	③	④

Computers

10

A. Do you ever use a computer? (Do not include PlayStation®, GameCube®, XBox®, or other TV/video game computers).

	Yes	No
*Fill in **one** circle only*	①	②

*If **No,** please go to question* **11**

B. Where do you use a computer?

*Fill in **one** circle for each line*

		Yes	No
a)	At home	①	②
b)	At school	①	②
c)	At a library	①	②
d)	At a friend's home	①	②
e)	At an Internet café	①	②
f)	Elsewhere	①	②

C. How often do you do these things with a computer?

*Fill in **one** circle for each line*

		Every day	At least once a week	Once or twice a month	A few times a year	Never
a)	I look up ideas and information for mathematics	①	②	③	④	⑤
b)	I look up ideas and information for science	①	②	③	④	⑤
c)	I write reports for school	①	②	③	④	⑤

Your School

11

How much do you agree with these statements about your school?

*Fill in **one** circle for each line*

		Agree a lot	Agree a little	Disagree a little	Disagree a lot
a)	I like being in school	①	②	③	④
b)	I think that students in my school try to do their best	①	②	③	④
c)	I think that teachers in my school care about the students	①	②	③	④
d)	I think that teachers in my school want students to do their best	①	②	③	④

12

<u>In school</u>, did any of these things happen during the <u>last month</u>?

*Fill in **one** circle for each line*

		Yes	No
a)	Something of mine was stolen	①	②
b)	I was hit or hurt by other student(s) (for example, shoving, hitting, kicking)	①	②
c)	I was made to do things I didn't want to do by other students	①	②
d)	I was made fun of or called names	①	②
e)	I was left out of activities by other students	①	②

Things You Do Outside of School

13

On a normal school day, how much time do you spend before or after school doing each of these things?

*Fill in **one** circle for each line*

		No time	Less than 1 hour	1-2 hours	More than 2 but less than 4 hours	4 or more hours
a)	I watch television and videos	①	②	③	④	⑤
b)	I play computer games	①	②	③	④	⑤
c)	I play or talk with friends	①	②	③	④	⑤
d)	I do jobs at home	①	②	③	④	⑤
e)	I play sports	①	②	③	④	⑤
f)	I read a book for enjoyment	①	②	③	④	⑤
g)	I use the Internet	①	②	③	④	⑤
h)	I do homework	①	②	③	④	⑤

14

A. During this school year, how often have you had extra lessons or tutoring in mathematics that is not part of your regular class?

*Fill in **one** circle only*

Every or almost every day ---------- ①

Once or twice a week ---------- ②

Sometimes ---------- ③

Never or almost never ---------- ④

B. During this school year, how often have you had extra lessons or tutoring in science that is not part of your regular class?

*Fill in **one** circle only*

Every or almost every day ---------- ①

Once or twice a week ---------- ②

Sometimes ---------- ③

Never or almost never ---------- ④

15

A. How often does your teacher give you homework in mathematics?

*Fill in **one** circle only*

Every day ---------- ①

3 or 4 times a week ---------- ②

1 or 2 times a week ---------- ③

Less than once a week ---------- ④

Never ---------- ⑤

*If **Never**, please go to question* **16**

B. When your teacher gives you mathematics homework, about how many minutes are you usually given?

*Fill in **one** circle only*

Fewer than 15 minutes ---------- ①

15–30 minutes ---------- ②

31–60 minutes ---------- ③

61–90 minutes ---------- ④

More than 90 minutes ---------- ⑤

16

A. How often does your teacher give you homework in science?

*Fill in **one** circle only*

Every day ---------- ①

3 or 4 times a week ---------- ②

1 or 2 times a week ---------- ③

Less than once a week ---------- ④

Never ---------- ⑤

*If **Never**, please go to question **17***

B. When your teacher gives you science homework, about how many minutes are you usually given?

*Fill in **one** circle only*

Fewer than 15 minutes ---------- ①

15–30 minutes ---------- ②

31–60 minutes ---------- ③

61–90 minutes ---------- ④

More than 90 minutes ---------- ⑤

More About You

17

Including yourself, how many people live in your home?

*Fill in **one** circle only*

2 ---------- ②

3 ---------- ③

4 ---------- ④

5 ---------- ⑤

6 ---------- ⑥

7 ---------- ⑦

8 or more ---------- ⑧

18

A. Was your mother (or stepmother or female guardian) born in <country>?

	Yes	No
*Fill in **one** circle only*	①	②

B. Was your father (or stepfather or male guardian) born in <country>?

	Yes	No
*Fill in **one** circle only*	①	②

19

A. Were you born in <country>?

	Yes	No
*Fill in **one** circle only*	①	②

*If **Yes**, you have completed the questionnaire*

B. If you were not born in <country>, how old were you when you came to <country>?

*Fill in **one** circle only*

Older than 5 years old ---------- ①

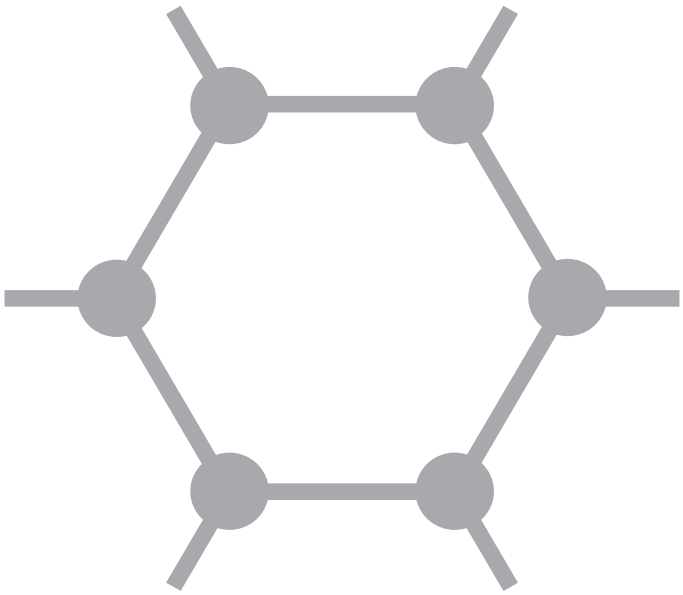
1 to 5 years old ---------- ②

Younger than 1 year old ---------- ③

Thank You

for completing this questionnaire

TIMSS International Study Center
Boston College
Chestnut Hill, MA 02467



<TIMSS National Research Center Name>
<Address>

Identification Label

Teacher Name: _____

Class Name: _____

Teacher ID: _____ Teacher Link # _____

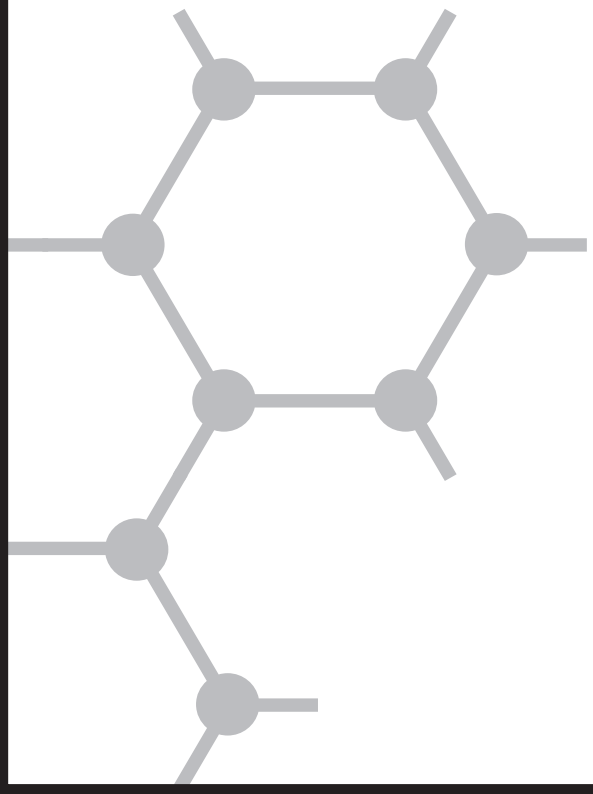
IEA Trends in International Mathematics and Science Study

TIMSS 2003

Main Survey

Teacher Questionnaire

Mathematics
<Grade 8>



General Directions

Your school has agreed to participate in TIMSS 2003, a large international study of student learning in mathematics and science in more than 50 countries around the world. Sponsored by the International Association for the Evaluation of Educational Achievement (IEA), TIMSS (for Trends in International Mathematics and Science Study) is measuring trends in student achievement and studying differences in national education systems in order to help improve the teaching and learning of mathematics and science worldwide.

As part of the study, students in a nationwide sample of <eighth-grade> classes in <country> will complete the TIMSS mathematics and science tests. This questionnaire is addressed to teachers who teach mathematics to these students, and seeks information about teachers' academic and professional background, instructional practices, and attitudes toward teaching mathematics. As a teacher of mathematics to students in one of these sampled classes, your responses to these questions are very important in helping to describe mathematics education in <country>.

Some of the questions in this questionnaire refer specifically to students in the "TIMSS class." This is the class that is identified on the cover of this questionnaire, and that will be tested as part of TIMSS 2003 in your school. It is important that you answer each question carefully so that the information that you provide reflects your situation as accurately as possible.

Please identify a time and place where you will be able to complete this questionnaire without being interrupted. This should require no more than 45 minutes. To make it as easy as possible for you to respond, most questions may be answered simply by checking or filling the appropriate circle.

Once you have completed the questionnaire, place it in the return envelope provided and return it to: <Country Specific Information>

Thank you very much for the time and effort you have put into responding to this questionnaire.

Background Information

1

How old are you?

*Fill in **one** circle only*

- Under 25 ○
- 25–29 ○
- 30–39 ○
- 40–49 ○
- 50–59 ○
- 60 or older ○

2

Are you female or male?

*Fill in **one** circle only*

- Female ○
- Male ○

3

By the end of this school year, how many years will you have been teaching altogether?

_____

Number of years you have taught

Preparation to Teach

4

What is the highest level of formal education you have completed?

*Fill in **one** circle only*

- Did not complete <ISCED 3> ○
- Finished <ISCED 3> ○
- Finished <ISCED 4B> ○
- Finished <ISCED 5B> ○
- Finished <ISCED 5A, first degree> ○
- Finished <ISCED 5A, second degree> or higher ○

5

How many years of <pre-service teacher training> did you have? Please round to the nearest whole number.

*Fill in **one** circle only*

- 0 years ○
- 1 year ○
- 2 years ○
- 3 years ○
- 4 years ○
- 5 years ○
- More than 5 years ○

6

During your <post-secondary> education, what was your major or main area(s) of study?

*Fill in **one** circle for each row*

		No	Yes
a)	Mathematics	○	○
b)	Education - Mathematics	○	○
c)	Science	○	○
d)	Education - Science	○	○
e)	Education - General	○	○
f)	Other	○	○

7

What requirements did you have to satisfy in order to become a mathematics teacher at <grade 8>?

*Fill in **one** circle for each row*

		No	Yes
a)	Complete <ISCED 5A, first degree>	○	○
b)	Complete a probationary period	○	○
c)	Complete a minimum number of education courses	○	○
d)	Complete a minimum number of mathematics courses	○	○
e)	Pass a licensing examination	○	○

8

A. Do you have a teaching license or certificate?

	No	Yes
*Fill in **one** circle only*	○	○

*If **No**, please go to question* **9**

B. What type of license or certificate do you hold?

*Fill in **one** circle only*

- <Full certificate> ○
- <Provisional certificate> ○
- <Emergency certificate> ○
- Other ○

(Please specify:_____)

9

Considering your training and experience in both mathematics content and instruction, how ready do you feel you are to teach these topics at the <eighth> grade?

*Fill in **one** circle for each row*

	Very ready	Ready	Not ready
A. Number			
a) Representing decimals and fractions using words, numbers, or models (including number lines)	○	○	○
b) Integers including words, numbers, or models (including number lines); ordering integers; and addition, subtraction, multiplication, and division with integers	○	○	○
B. Algebra			
a) Numeric, algebraic, and geometric patterns or sequences (extension, missing terms, generalization of patterns)	○	○	○
b) Simple linear equations and inequalities, and simultaneous (two variables) equations	○	○	○
c) Equivalent representations of functions as ordered pairs, tables, graphs, words, or equations	○	○	○
d) Attributes of a graph such as intercepts on axes, and intervals where the function increases, decreases, or is constant	○	○	○
C. Measurement			
a) Estimations of length, circumference, area, volume, weight, time, angle, and speed in problem situations (e.g., circumference of a wheel, speed of a runner)	○	○	○
b) Computations with measurements in problem situations (e.g., add measures, find average speed on a trip, find population density)	○	○	○
c) Measures of irregular or compound areas (e.g., by using grids or dissecting and rearranging pieces)	○	○	○
d) Precision of measurements (e.g., upper and lower bounds of a length reported as 8 centimeters to the nearest centimeter)	○	○	○
D. Geometry			
a) Pythagorean theorem (not proof) to find length of a side	○	○	○
b) Congruent figures (triangles, quadrilaterals) and their corresponding measures	○	○	○
c) Cartesian plane - ordered pairs, equations, intercepts, intersections, and gradient	○	○	○
d) Translation, reflection, rotation, and enlargement	○	○	○
E. Data			
a) Sources of error in collecting and organizing data (e.g., bias, inappropriate grouping)	○	○	○
b) Data collection methods (e.g., survey, experiment, questionnaire)	○	○	○
c) Characteristics of data sets including mean, median, range, and shape of distribution (in general terms)	○	○	○
d) Simple probability including using data from experiments to estimate probabilities for favorable outcomes	○	○	○

Teaching Time

10

A. In one typical calendar week from Monday to Sunday, what is the total number of single periods for which you are formally <scheduled/time-tabled/assigned>? Count a double period as two periods.

_____

Write in the number of periods

B. Of these formally <scheduled/time-tabled/assigned> periods, how many are you assigned to do each of the following?

Write in the number of periods

a) Teach mathematics ---------- _____

b) Teach science ---------- _____

c) Teach other subjects ---------- _____

d) Perform other duties ---------- _____

Total ---------- _____

Should match number in 10A

C. How many minutes are in a typical single period?

_____

Write in the number of minutes

11

Outside the formal school day, approximately how many hours per week do you normally spend on each of these activities? Do not include the time already accounted for in Question 10. Please round to the nearest whole number.

Write in the number of hours per week

a) Grading student tests, exams, or other student work ---------- _____

b) Planning lessons ---------- _____

c) Administrative and record-keeping tasks including staff meetings ----- _____

d) Other ---------- _____

Professional Development

12

How often do you have the following types of interactions with other teachers?

*Fill in **one** circle for each row*

	Daily or almost daily	1-3 times per week	2 or 3 times per month	Never or almost never
a) Discussions about how to teach a particular concept	○	○	○	○
b) Working on preparing instructional materials	○	○	○	○
c) Visits to another teacher's classroom to observe his/her teaching	○	○	○	○
d) Informal observations of **my** classroom by another teacher	○	○	○	○

13

In the past two years, have you participated in professional development in any of the following?

*Fill in **one** circle for each row*

	No	Yes
a) Mathematics content	○	○
b) Mathematics pedagogy/instruction	○	○
c) Mathematics curriculum	○	○
d) Integrating information technology into mathematics	○	○
e) Improving students' critical thinking or problem solving skills	○	○
f) Mathematics assessment	○	○

Attitudes Toward Mathematics

14

To what extent do you agree or disagree with each of the following statements?

*Fill in **one** circle for each row*

	Disagree a lot	Disagree	Agree	Agree a lot
a) More than one representation (picture, concrete material, symbols, etc.) should be used in teaching a mathematics topic	○	○	○	○
b) Mathematics should be learned as sets of algorithms or rules that cover all possibilities	○	○	○	○
c) Solving mathematics problems often involves hypothesizing, estimating, testing, and modifying findings	○	○	○	○
d) Learning mathematics mainly involves memorizing	○	○	○	○
e) There are different ways to solve most mathematical problems	○	○	○	○
f) Few new discoveries in mathematics are being made	○	○	○	○
g) Modeling real-world problems is essential to teaching mathematics	○	○	○	○

Your School

15

Thinking about your CURRENT school, indicate the extent to which you agree or disagree with each of the following statements.

*Fill in **one** circle for each row*

	Disagree a lot	Disagree	Agree	Agree a lot
a) This school facility (building and grounds) is in need of significant repair	○	○	○	○
b) This school is located in a safe neighborhood	○	○	○	○
c) I feel safe at this school	○	○	○	○
d) This school's security policies and practices are sufficient	○	○	○	○

16

How would you characterize each of the following within your school?

*Fill in **one** circle for each row*

	Very low	Low	Medium	High	Very high
a) Teachers' job satisfaction	○	○	○	○	○
b) Teachers' understanding of the school's curricular goals	○	○	○	○	○
c) Teachers' degree of success in implementing the school's curriculum	○	○	○	○	○
d) Teachers' expectations for student achievement	○	○	○	○	○
e) Parental support for student achievement	○	○	○	○	○
f) Parental involvement in school activities	○	○	○	○	○
g) Students' regard for school property	○	○	○	○	○
h) Students' desire to do well in school	○	○	○	○	○

The TIMSS Class

The remaining questions refer to the TIMSS class. Remember, "the TIMSS class" is the class which is identified on the cover of this questionnaire, and which will be tested as part of TIMSS 2003 in your school.

17

How many students are in the TIMSS class?

_____

Write in the number of students

18

How many minutes per week do you teach mathematics to the TIMSS class?

_____

Write in the number of minutes per week

19

A. Do you use a textbook(s) in teaching mathematics to the TIMSS class?

	No	Yes
*Fill in **one** circle only*	○	○

*If **No**, please go to question* **20**

B. How do you use a textbook(s) in teaching mathematics to the TIMSS class?

*Fill in **one** circle only*

As the primary basis for my lessons ○

As a supplementary resource ○

20

In a typical week of mathematics lessons for the TIMSS class, what percentage of time do students spend on each of the following activities?

Write in the percent
The total should add to 100%

a) Reviewing homework _____%

b) Listening to lecture-style presentations _____%

c) Working problems with your guidance _____%

d) Working problems on their own without your guidance _____%

e) Listening to you re-teach and clarify content/procedures _____%

f) Taking tests or quizzes _____%

g) Participating in classroom management tasks not related to the lesson's content/purpose (e.g., interruptions and keeping order) _____%

h) Other student activities _____%

Total 100%

21

In teaching mathematics to the students in the TIMSS class, how often do you usually ask them to do the following?

*Fill in **one** circle for each row*

	Never	Some lessons	About half the lessons	Every or almost every lesson
a) Practice adding, subtracting, multiplying, and dividing without using a calculator	○	○	○	○
b) Work on fractions and decimals	○	○	○	○
c) Work on problems for which there is no immediately obvious method of solution	○	○	○	○
d) Interpret data in tables, charts, or graphs	○	○	○	○
e) Write equations and functions to represent relationships	○	○	○	○
f) Work together in small groups	○	○	○	○
g) Relate what they are learning in mathematics to their daily lives	○	○	○	○
h) Explain their answers	○	○	○	○
i) Decide on their own procedures for solving complex problems	○	○	○	○

22

In your view, to what extent do the following limit how you teach the TIMSS class?

*Fill in **one** circle for each row*

	A lot	Some	A little	Not at all	Not applicable
Students					
a) Students with different academic abilities	○	○	○	○	○
b) Students who come from a wide range of backgrounds (e.g., economic, language)	○	○	○	○	○
c) Students with special needs, (e.g., hearing, vision, speech impairment, physical disabilities, mental or emotional/psychological impairment)	○	○	○	○	○
d) Uninterested students	○	○	○	○	○
e) Low morale among students	○	○	○	○	○
f) Disruptive students	○	○	○	○	○
Resources					
g) Shortage of computer hardware	○	○	○	○	○
h) Shortage of computer software	○	○	○	○	○
i) Shortage of support for using computers	○	○	○	○	○
j) Shortage of textbooks for student use	○	○	○	○	○
k) Shortage of other instructional equipment for students' use	○	○	○	○	○
l) Shortage of equipment for your use in demonstrations and other exercises	○	○	○	○	○
m) Inadequate physical facilities	○	○	○	○	○
n) High student/teacher ratio	○	○	○	○	○

23

By the end of this school year, approximately what percentage of teaching time will you have spent during this school year on each of the following mathematics content areas for the TIMSS class?

Write in the percent
The total should add to 100%

a) Number (e.g., whole numbers, fractions, decimals, ratio, proportion, percent) ---------- _____%

b) Geometry (e.g., lines and angles, shapes, congruence and similarity, spatial relationships, symmetry and transformations) ----------_____%

c) Algebra (e.g., patterns, equations and formulas, relationships) ----------_____%

d) Data (e.g., data collection and organization, data representation, data interpretation, probability) --------_____%

e) Measurement (e.g., attributes and units, tools, techniques and formulas) _____%

f) Other, please specify:

_____ -----_____%

Total---------- 100%

24

The following list includes the main topics addressed by the TIMSS mathematics test. Choose the response that best describes when students in the TIMSS class have been taught each topic. If a topic was taught half this year and half before this year, please choose "Mostly taught this year."

*Fill in **one** circle for each row*

		Not yet taught or just introduced	Mostly taught this year	Mostly taught before this year
A. Number				
a)	Whole numbers including place value, factorization, and the four operations	○	○	○
b)	Computations, estimations, or approximations involving whole numbers	○	○	○
c)	Common fractions including equivalent fractions, and ordering of fractions	○	○	○
d)	Decimal fractions including place value, ordering, rounding, and converting to common fractions (and vice versa)	○	○	○
e)	Representing decimals and fractions using words, numbers, or models (including number lines)	○	○	○
f)	Computations with fractions	○	○	○
g)	Computations with decimals	○	○	○
h)	Integers including words, numbers, or models (including number lines), ordering integers, addition, subtraction, multiplication, and division with integers	○	○	○
i)	Ratios (equivalence, division of a quantity by a given ratio)	○	○	○
j)	Conversion of percents to fractions or decimals, and vice versa	○	○	○

24 continued

The following list includes the main topics addressed by the TIMSS mathematics test. Choose the response that best describes when students in the TIMSS class have been taught each topic. If a topic was taught half this year and half before this year, please choose "Mostly taught this year."

*Fill in **one** circle for each row*

	Not yet taught or just introduced	Mostly taught this year	Mostly taught before this year
B. Algebra			
a) Numeric, algebraic, and geometric patterns or sequences (extension, missing terms, generalization of patterns)	○	○	○
b) Sums, products, and powers of expressions containing variables	○	○	○
c) Simple linear equations and inequalities, and simultaneous (two variables) equations	○	○	○
d) Equivalent representations of functions as ordered pairs, tables, graphs, words, or equations	○	○	○
e) Proportional, linear, and nonlinear relationships (travel graphs and simple piecewise functions included)	○	○	○
f) Attributes of a graph such as intercepts on axes, and intervals where the function increases, decreases, or is constant	○	○	○
C. Measurement			
a) Standard units for measures of length, area, volume, perimeter, circumference, time, speed, density, angle, mass/weight	○	○	○
b) Relationships among units for conversions within systems of units, and for rates	○	○	○
c) Use standard tools to measure length, weight, time, speed, angle, and temperature	○	○	○
d) Estimations of length, circumference, area, volume, weight, time, angle, and speed in problem situations (e.g., circumference of a wheel, speed of a runner)	○	○	○
e) Computations with measurements in problem situations (e.g., add measures, find average speed on a trip, find population density)	○	○	○
f) Measurement formulas for perimeter of a rectangle, circumference of a circle, areas of plane figures (including circles), surface area and volume of rectangular solids, and rates	○	○	○
g) Measures of irregular or compound areas (e.g., by using grids or dissecting and rearranging pieces)	○	○	○
h) Precision of measurements (e.g., upper and lower bounds of a length reported as 8 centimeters to the nearest centimeter)	○	○	○

24 continued

The following list includes the main topics addressed by the TIMSS mathematics test. Choose the response that best describes when students in the TIMSS class have been taught each topic. If a topic was taught half this year and half before this year, please choose "Mostly taught this year."

*Fill in **one** circle for each row*

	Not yet taught or just introduced	Mostly taught this year	Mostly taught before this year
D. Geometry			
a) Angles - acute, right, straight, obtuse, reflex, complementary, and supplementary	○	○	○
b) Relationships for angles at a point, angles on a line, vertically opposite angles, angles associated with a transversal cutting parallel lines, and perpendicularity	○	○	○
c) Properties of angle bisectors and perpendicular bisectors of lines	○	○	○
d) Properties of geometric shapes: triangles and quadrilaterals	○	○	○
e) Properties of other polygons (regular pentagon, hexagon, octagon, decagon)	○	○	○
f) Construct or draw triangles and rectangles of given dimensions	○	○	○
g) Pythagorean theorem (not proof) to find length of a side	○	○	○
h) Congruent figures (triangles, quadrilaterals) and their corresponding measures	○	○	○
i) Similar triangles and recall their properties	○	○	○
j) Cartesian plane - ordered pairs, equations, intercepts, intersections, and gradient	○	○	○
k) Relationships between two-dimensional and three-dimensional shapes	○	○	○
l) Line and rotational symmetry for two-dimensional shapes	○	○	○
m) Translation, reflection, rotation, and enlargement	○	○	○
E. Data			
a) Organizing a set of data by one or more characteristics using a tally chart, table, or graph	○	○	○
b) Sources of error in collecting and organizing data (e.g., bias, inappropriate grouping)	○	○	○
c) Data collection methods (e.g., survey, experiment, questionnaire)	○	○	○
d) Drawing and interpreting graphs, tables, pictographs, bar graphs, pie charts, and line graphs	○	○	○
e) Characteristics of data sets including mean, median, range, and shape of distribution (in general terms)	○	○	○
f) Interpreting data sets (e.g., draw conclusions, make predictions, and estimate values between and beyond given data points)	○	○	○
g) Evaluating interpretations of data with respect to correctness and completeness of interpretation	○	○	○
h) Simple probability including using data from experiments to estimate probabilities for favorable outcomes	○	○	○

Calculators and Computers in the TIMSS Class

25

Are the students in the TIMSS class permitted to use calculators during mathematics lessons?

*Fill in **one** circle only*

Yes, with unrestricted use ---------- ○

Yes, with restricted use ---------- ○

No, calculators are not permitted ---------- ○

*If **No,** please go to question* **30**

26

How many students in the TIMSS class have calculators available to use during mathematics lessons?

*Fill in **one** circle only*

All ---------- ○

Most ---------- ○

About half ---------- ○

Some ---------- ○

None ---------- ○

27

How many students in the TIMSS class have graphing calculators available to use during mathematics lessons?

*Fill in **one** circle only*

All ---------- ○

Most ---------- ○

About half ---------- ○

Some ---------- ○

None ---------- ○

28

How often do students in the TIMSS class use calculators in their mathematics lessons for the following activities?

*Fill in **one** circle for each row*

		Never	Some lessons	About half the lessons	Every or almost every lesson
a)	Check answers	○	○	○	○
b)	Do routine computations	○	○	○	○
c)	Solve complex problems	○	○	○	○
d)	Explore number concepts	○	○	○	○

29

How often are students in the TIMSS class permitted to use calculators during tests or examinations?

*Fill in **one** circle only*

Always ---------- ○

Sometimes ---------- ○

Never ---------- ○

30

A. Do students in the TIMSS class have computers available to use during their mathematics lessons?

	No	Yes
*Fill in **one** circle only*	○	○

*If **No,** please go to question* **32**

B. Do any of the computers have access to the Internet?

	No	Yes
*Fill in **one** circle only*	○	○

31

In teaching mathematics to the TIMSS class, how often do you have students use a computer for the following activities?

*Fill in **one** circle for each row*

	Never	Some lessons	About half the lessons	Every or almost every lesson
a) Discover mathematics principles and concepts	○	○	○	○
b) Practice skills and procedures	○	○	○	○
c) Look up ideas and information	○	○	○	○
d) Process and analyze data	○	○	○	○

Homework

32

Do you assign mathematics homework to the TIMSS class?

	No	Yes
*Fill in **one** circle only*	○	○

*If **No,** please go to question* **37**

33

How often do you usually assign mathematics homework to the TIMSS class?

*Fill in **one** circle only*

- Every or almost every lesson ○
- About half the lessons ○
- Some lessons ○

34

When you assign mathematics homework to the TIMSS class, about how many minutes do you usually assign? (Consider the time it would take an average student in your class.)

*Fill in **one** circle only*

- Fewer than 15 minutes ○
- 15-30 minutes ○
- 31-60 minutes ○
- 61-90 minutes ○
- More than 90 minutes ○

35

How often do you assign the following kinds of mathematics homework to the TIMSS class?

*Fill in **one** circle for each row*

	Never or almost never	Sometimes	Always or almost always
a) Doing problem/question sets	○	○	○
b) Gathering data and reporting	○	○	○
c) Finding one or more applications of the content covered	○	○	○

36

How often do you do the following with the mathematics homework assignments?

*Fill in **one** circle for each row*

	Never or almost never	Sometimes	Always or almost always
a) Monitor whether or not the homework was completed	○	○	○
b) Correct assignments and then give feedback to students	○	○	○
c) Have students correct their own homework in class	○	○	○
d) Use the homework as a basis for class discussion	○	○	○
e) Use the homework to contribute towards students' grades or marks	○	○	○

37

How often do you give a mathematics test or examination to the TIMSS class?

*Fill in **one** circle only*

- About once a week ○
- About every two weeks ○
- About once a month ○
- A few times a year ○
- Never ○

*If **Never**, you have completed the questionnaire*

38

What item formats do you typically use in your mathematics tests or examinations?

*Fill in **one** circle only*

- Only constructed-response ○
- Mostly constructed-response ○
- About half constructed-response and half objective (e.g., multiple-choice) ○
- Mostly objective ○
- Only objective ○

39

How often do you include the following types of questions in your mathematics tests or examinations?

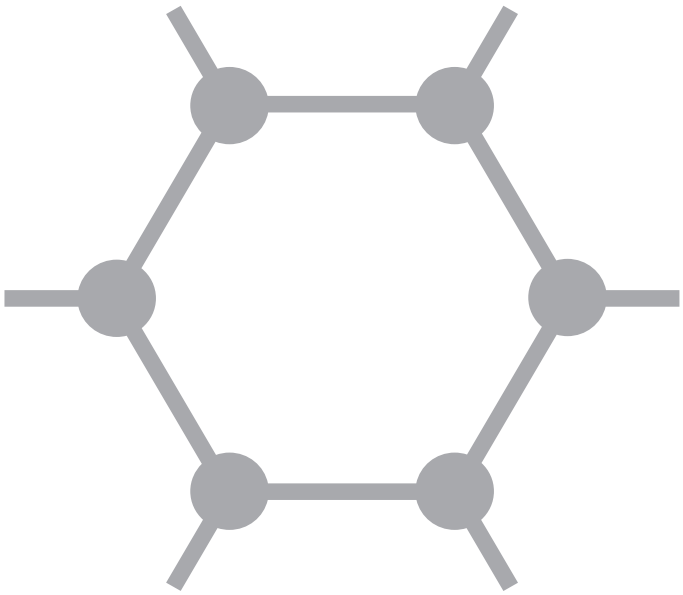
*Fill in **one** circle for each row*

		Never or almost never	**Sometimes**	**Always or almost always**
a)	Questions involving application of mathematical procedures	○	○	○
b)	Questions involving searching for patterns and relationships	○	○	○
c)	Questions requiring explanations or justifications	○	○	○

Thank You

for completing this questionnaire

TIMSS International Study Center
Boston College
Chestnut Hill, MA 02467



<TIMSS National Research Center Name>
<Address>

Identification Label

Teacher Name: _____

Class Name: _____

Teacher ID: _____ Teacher Link # _____

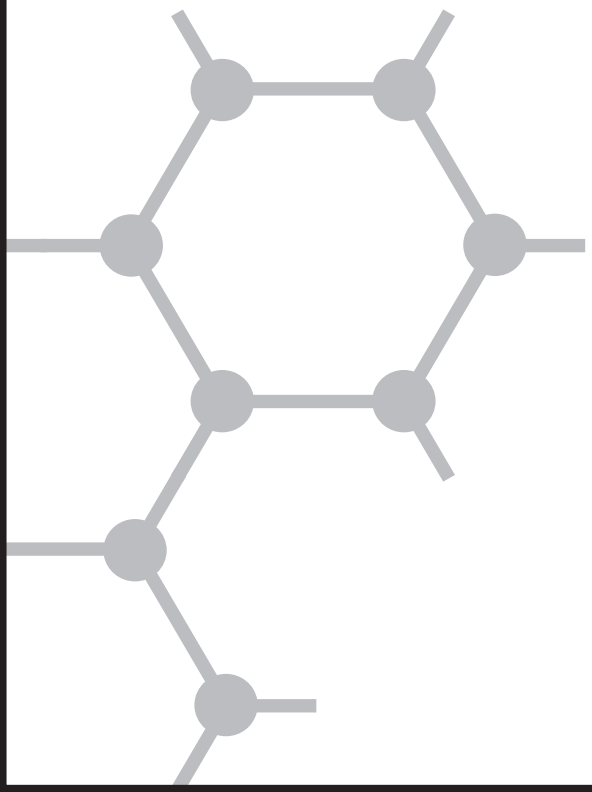
IEA Trends in International Mathematics and Science Study

TIMSS 2003

Main Survey

Teacher Questionnaire

Science
<Grade 8>



General Directions

Your school has agreed to participate in TIMSS 2003, a large international study of student learning in mathematics and science in more than 50 countries around the world. Sponsored by the International Association for the Evaluation of Educational Achievement (IEA), TIMSS (for Trends in International Mathematics and Science Study) is measuring trends in student achievement and studying differences in national education systems in order to help improve the teaching and learning of mathematics and science worldwide.

As part of the study, students in a nationwide sample of <eighth-grade> classes in <country> will complete the TIMSS mathematics and science tests. This questionnaire is addressed to teachers who teach science to these students, and seeks information about teachers' academic and professional background, instructional practices, and attitudes toward teaching science. As a teacher of science to students in one of these sampled classes, your responses to these questions are very important in helping to describe science education in <country>.

Some of the questions in this questionnaire refer specifically to students in the "TIMSS class." This is the class that is identified on the cover of this questionnaire, and that will be tested as part of TIMSS 2003 in your school. If you teach science to some but not all of the students in the TIMSS class, please think of teaching the science class these students are in when answering these class-specific questions. It is important that you answer each question carefully so that the information that you provide reflects your situation as accurately as possible.

Please identify a time and place where you will be able to complete this questionnaire without being interrupted. This should require no more than 45 minutes. To make it as easy as possible for you to respond, most questions may be answered simply by checking or filling the appropriate circle.

Once you have completed the questionnaire, place it in the return envelope provided and return it to: <Country Specific Information>

Thank you very much for the time and effort you have put into responding to this questionnaire.

Background Information

1

How old are you?

*Fill in **one** circle only*

- Under 25 ○
- 25–29 ○
- 30–39 ○
- 40–49 ○
- 50–59 ○
- 60 or older ○

2

Are you female or male?

*Fill in **one** circle only*

- Female ○
- Male ○

3

By the end of this school year, how many years will you have been teaching altogether?

_____

Number of years you have taught

Preparation to Teach

4

What is the highest level of formal education you have completed?

*Fill in **one** circle only*

- Did not complete <ISCED 3> ○
- Finished <ISCED 3> ○
- Finished <ISCED 4B> ○
- Finished <ISCED 5B> ○
- Finished < ISCED 5A, first degree> ○
- Finished <ISCED 5A, second degree> or higher ○

5

How many years of <pre-service teacher training> did you have? Please round to the nearest whole number.

*Fill in **one** circle only*

- 0 years ○
- 1 year ○
- 2 years ○
- 3 years ○
- 4 years ○
- 5 years ○
- More than 5 years ○

6

During your <post-secondary> education, what was your major or main area(s) of study?

*Fill in **one** circle for each row*

		No	Yes
a)	Biology	○	○
b)	Physics	○	○
c)	Chemistry	○	○
d)	<Earth Science>	○	○
e)	Education - Science	○	○
f)	Mathematics	○	○
g)	Education - Mathematics	○	○
h)	Education - General	○	○
i)	Other	○	○

7

What requirements did you have to satisfy in order to become a science teacher at <grade 8>?

*Fill in **one** circle for each row*

		No	Yes
a)	Complete <ISCED 5A, first degree>	○	○
b)	Complete a probationary period	○	○
c)	Complete a minimum number of education courses	○	○
d)	Complete a minimum number of science courses	○	○
e)	Pass a licensing examination	○	○

8

A. Do you have a teaching license or certificate?

	No	Yes
*Fill in **one** circle only*	○	○

*If **No**, please go to question* **9**

B. What type of license or certificate do you hold?

*Fill in **one** circle only*

- <Full certificate> ○
- <Provisional certificate> ○
- <Emergency certificate> ○
- Other ○

(Please specify:_____)

9

Considering your training and experience in both science content and instruction, how ready do you feel you are to teach these topics at the <eighth> grade?

*Fill in **one** circle for each row*

	Very ready	Ready	Not ready
A. Biology			
a) Major organs and organ systems in humans and other organisms (structure/function, life processes that maintain stable bodily conditions)	○	○	○
b) Cells and their functions, including respiration and photosynthesis as cellular processes	○	○	○
c) Reproduction (sexual and asexual) and heredity (passing on of traits, inherited versus acquired/learned characteristics)	○	○	○
d) Role of variation and adaptation in survival/extinction of species in a changing environment	○	○	○
e) Interaction of living organisms and the physical environment in an ecosystem (energy flow, food webs, effect of changes, cycling of materials)	○	○	○
B. Chemistry			
a) Classification and composition of matter (characteristics of elements, compounds, mixtures)	○	○	○
b) Particulate structure of matter (molecules, atoms, protons, neutrons, and electrons)	○	○	○
c) Properties of solutions (solvent, solute, concentration/dilution, effect of temperature on solubility)	○	○	○
d) Properties and uses of common acids and bases	○	○	○
e) Chemical change (transformation of reactants, evidence of chemical change, conservation of matter, common oxidation reactions - combustion and rusting)	○	○	○
C. Physics			
a) Physical states and changes in matter (explanations of properties in terms of movement/distance between particles; phase change by supplying/removing heat/energy, thermal expansion and changes in volume and/or pressure)	○	○	○
b) Energy types, sources, and conversions, including heat transfer	○	○	○
c) Basic properties/behaviors of light (reflection, refraction, light and color, simple ray diagrams) and sound (production by vibration, transmission through media, relative speed of light and sound)	○	○	○
d) Electric circuits (flow of current; types of circuits - opened/closed and parallel/series; current/voltage relationship)	○	○	○
e) Forces and motion (types of forces, basic description of motion, use of distance/time graphs, effects of density and pressure	○	○	○

9 continued

Considering your training and experience in both science content and instruction, how ready do you feel you are to teach these topics at the <eighth> grade?

*Fill in **one** circle for each row*

	Very ready	Ready	Not ready
D. Earth Science			
a) Earth's structure and physical features (Earth's crust, mantle and core; use of topographic maps)	○	○	○
b) Earth's processes, cycles and history (rock cycle; water cycle; weather patterns; major geological events; formation of fossils and fossil fuels)	○	○	○
c) Earth in the solar system and the universe (phenomena on Earth - day/night, tides, phases of moon, eclipses, seasons; physical features of Earth compared to other bodies; the Sun as a star)	○	○	○
E. Environmental Science			
a) Trends in human population and its effects on the environment	○	○	○
b) Use and conservation of Earth's natural resources (renewable/non-renewable resources, human use of land/soil and water resources)	○	○	○
c) Changes in environments (role of human activity, global environmental concerns, impact of natural hazards)	○	○	○

Teaching Time

10

A. In one typical calendar week from Monday to Sunday, what is the total number of single periods for which you are formally <scheduled/time-tabled/assigned>? Count a double period as two periods.

_____

Write in the number of periods

B. Of these formally <scheduled/time-tabled/assigned> periods, how many are you assigned to do each of the following?

Write in the number of periods

a) Teach <general> science ---------- _____

b) Teach physical science ---------- _____

c) Teach physics ---------- _____

d) Teach chemistry ---------- _____

e) Teach life science/biology ---------- _____

f) Teach Earth science ---------- _____

g) Teach mathematics ---------- _____

h) Teach other subjects ---------- _____

i) Perform other duties ---------- _____

Total ---------- _____

Should match number in 10A

C. How many minutes are in a typical single period?

_____

Write in the number of minutes

11

Outside the formal school day, approximately how many hours per week do you normally spend on each of these activities? Do not include the time already accounted for in Question 10. Please round to the nearest whole number.

Write in the number of hours per week

a) Grading student tests, exams, or other student work ---------- _____

b) Planning lessons ---------- _____

c) Administrative and record-keeping tasks including staff meetings ----- _____

d) Other ---------- _____

Professional Development

12

How often do you have the following types of interactions with other teachers?

*Fill in **one** circle for each row*

	Daily or almost daily	1-3 times per week	2 or 3 times per month	Never or almost never
a) Discussions about how to teach a particular concept	○	○	○	○
b) Working on preparing instructional materials	○	○	○	○
c) Visits to another teacher's classroom to observe his/her teaching	○	○	○	○
d) Informal observations of **my** classroom by another teacher	○	○	○	○

13

In the past two years, have you participated in professional development in any of the following?

*Fill in **one** circle for each row*

	No	Yes
a) Science content	○	○
b) Science pedagogy/instruction	○	○
c) Science curriculum	○	○
d) Integrating information technology into science	○	○
e) Improving students' critical thinking or inquiry skills	○	○
f) Science assessment	○	○

Attitudes Toward Science

14

To what extent do you agree or disagree with each of the following statements?

*Fill in **one** circle for each row*

	Disagree a lot	Disagree	Agree	Agree a lot
a) More than one representation (picture, concrete material, symbols, etc.) should be used in teaching a science topic	○	○	○	○
b) Solving science problems often involves hypothesizing, estimating, testing, and modifying findings	○	○	○	○
c) Learning science mainly involves memorizing	○	○	○	○
d) There are many ways to conduct scientific investigation	○	○	○	○
e) Getting the correct answer is the most important outcome of a student's scientific experiment	○	○	○	○
f) Scientific theories are subject to change	○	○	○	○
g) Science is taught primarily to give students the skills and knowledge to explain natural phenomena	○	○	○	○
h) Modeling natural phenomena is essential to teaching science	○	○	○	○
i) Most scientific discoveries have no practical value	○	○	○	○

Your School

15

Thinking about your CURRENT school, indicate the extent to which you agree or disagree with each of the following statements.

*Fill in **one** circle for each row*

	Disagree a lot	Disagree	Agree	Agree a lot
a) This school facility (building and grounds) is in need of significant repair	○	○	○	○
b) This school is located in a safe neighborhood	○	○	○	○
c) I feel safe at this school	○	○	○	○
d) This school's security policies and practices are sufficient	○	○	○	○

16

How would you characterize each of the following within your school?

*Fill in **one** circle for each row*

	Very low	Low	Medium	High	Very high
a) Teachers' job satisfaction	○	○	○	○	○
b) Teachers' understanding of the school's curricular goals	○	○	○	○	○
c) Teachers' degree of success in implementing the school's curriculum	○	○	○	○	○
d) Teachers' expectations for student achievement	○	○	○	○	○
e) Parental support for student achievement	○	○	○	○	○
f) Parental involvement in school activities	○	○	○	○	○
g) Students' regard for school property	○	○	○	○	○
h) Students' desire to do well in school	○	○	○	○	○

The TIMSS Class

The remaining questions refer to the <TIMSS class / class with the TIMSS students>. Remember, "the TIMSS class" is the class which is identified on the cover of this questionnaire, and which will be tested as part of TIMSS 2003 in your school.

17

How many students are in the <TIMSS class/ class with the TIMSS students>?

_____

Write in the number of students

18

How many minutes per week do you teach science to the <TIMSS class>?

_____

Write in the number of minutes per week

19

A. Do you use a textbook(s) in teaching science to the <TIMSS class>?

	No	Yes
*Fill in **one** circle only*	○	○

*If **No**, please go to question* **20**

B. How do you use a textbook(s) in teaching science to the <TIMSS class>?

*Fill in **one** circle only*

As the primary basis for my lessons ---------- ○

As a supplementary resource ---------- ○

20

In a typical week of science lessons for the <TIMSS class>, what percentage of time do students spend on each of the following activities?

Write in the percent
The total should add to 100%

a) Reviewing homework ---------- _____%

b) Listening to lecture-style presentations ---------- _____%

c) Working problems with your guidance ---------- _____%

d) Working problems on their own without your guidance ---------- _____%

e) Listening to you re-teach and clarify content/procedures --------- _____%

f) Taking tests or quizzes ---------- _____%

g) Participating in classroom management tasks not related to the lesson's content/purpose (e.g., interruptions and keeping order) ---------- _____%

h) Other student activities ---------- _____%

Total ---------- 100%

Teaching Science to the TIMSS Class

21

In teaching science to the students in the TIMSS class, how often do you usually ask them to do the following?

*Fill in **one** circle for each row*

	Never	Some lessons	About half the lessons	Every or almost every lesson
a) Watch me demonstrate an experiment or investigation	○	○	○	○
b) Formulate hypotheses or predictions to be tested	○	○	○	○
c) Design or plan experiments or investigations	○	○	○	○
d) Conduct experiments or investigations	○	○	○	○
e) Work together in small groups on experiments or investigations	○	○	○	○
f) Write explanations about what was observed and why it happened	○	○	○	○
g) Put events or objects in order and give a reason for the organization	○	○	○	○
h) Study the impact of technology on society	○	○	○	○
i) Learn about the nature of science and inquiry	○	○	○	○
j) Relate what they are learning in science to their daily lives	○	○	○	○
k) Present their work to the class	○	○	○	○

22

In your view, to what extent do the following limit how you teach the <TIMSS class>?

*Fill in **one** circle for each row*

	A lot	Some	A little	Not at all	Not applicable
Students					
a) Students with different academic abilities	○	○	○	○	○
b) Students who come from a wide range of backgrounds (e.g., economic, language)	○	○	○	○	○
c) Students with special needs (e.g., hearing, vision, speech impairment, physical disabilities, mental or emotional/psychological impairment)	○	○	○	○	○
d) Uninterested students	○	○	○	○	○
e) Low morale among students	○	○	○	○	○
f) Disruptive students	○	○	○	○	○
Resources					
g) Shortage of computer hardware	○	○	○	○	○
h) Shortage of computer software	○	○	○	○	○
i) Shortage of support for using computers	○	○	○	○	○
j) Shortage of textbooks for student use	○	○	○	○	○
k) Shortage of other instructional equipment for students' use	○	○	○	○	○
l) Shortage of equipment for your use in demonstrations and other exercises	○	○	○	○	○
m) Inadequate physical facilities	○	○	○	○	○
n) High student/teacher ratio	○	○	○	○	○

23

By the end of this school year, approximately what percentage of teaching time will you have spent during this school year on each of the following science content areas for the <TIMSS class>?

Write in the percent
The total should add to 100%

a) Life science (e.g., types, characteristics, and classification of living things; structure/function and life processes in organisms; cells and their functions; development, reproduction and heredity; diversity, adaptation and natural selection; ecosystems; and human health) ---------- _____%

b) Chemistry (e.g., classification, composition and particulate structure of matter; properties and uses of water; acids and bases; and chemical change) ---------- _____%

c) Physics (e.g., physical states and changes in matter; energy types, sources and conversions; heat and temperature; light; sound and vibration; electricity and magnetism; forces and motion) -------- _____%

d) Earth science (e.g., Earth's structure and physical features; Earth's processes, cycles and history; the solar system and universe) --------- _____%

e) Environmental science (e.g., changes in population; use and conservation of natural resources; and changes in environments) ---------- _____%

f) Other, please specify:

_____ ------- _____%

Total ---------- 100%

24

The following list includes the main topics addressed by the TIMSS science test. Choose the response that best describes when students in the TIMSS class have been taught each topic. If a topic was taught half this year and half before this year, please choose "Mostly taught this year."

*Fill in **one** circle for each row*

	Not yet taught or just introduced	Mostly taught this year	Mostly taught before this year
A. Biology			
a) Classification of organisms on the basis of a variety of physical and behavioral characteristics	○	○	○
b) The major organ systems in humans and other organisms	○	○	○
c) How the systems function to maintain stable bodily conditions	○	○	○
d) Cell structures and functions	○	○	○
e) Photosynthesis and respiration as processes of cells and organisms, including substances used and produced	○	○	○
f) Life cycles of organisms, including humans, plants, birds, insects	○	○	○
g) Reproduction (sexual and asexual), and heredity (passing on of traits), inherited verus acquired/learned characteristics	○	○	○
h) The role of variation and adaptation in survival/extinction of species in a changing environment	○	○	○
i) The interaction of living organisms in an ecosystem (energy flow, food chains and food webs, food pyramids, and the effects of change upon the system)	○	○	○
j) Cycling of materials in nature (water, carbon/oxygen cycle, decomposition of organisms)	○	○	○
k) Causes of common infectious diseases, methods of infection/transmission, prevention, and the body's natural resistance and healing capabilities	○	○	○
l) Preventive medicine methods (diet, hygiene, exercise and lifestyle)	○	○	○

24 continued

The following list includes the main topics addressed by the TIMSS science test. Choose the response that best describes when students in the TIMSS class have been taught each topic. If a topic was taught half this year and half before this year, please choose "Mostly taught this year."

*Fill in **one** circle for each row*

	Not yet taught or just introduced	Mostly taught this year	Mostly taught before this year
B. Chemistry			
a) Classification and composition of matter (physical and chemical characteristics, pure substances and mixtures, separation techniques)	○	○	○
b) Properties of solutions (solvents, solutes, effects of temperature on solubility)	○	○	○
c) Particulate structure of matter (molecules, atoms, protons, neutrons, and electrons)	○	○	○
d) Properties and uses of water (composition, melting/boiling points, changes in density/volume)	○	○	○
e) The properties and uses of common acids and bases	○	○	○
f) Chemical change (transformation of reactants, evidence of chemical change, conservation of matter)	○	○	○
g) The need for oxygen in common oxidation reactions (combustion, rusting) and the relative tendency of familiar substances to undergo these reactions	○	○	○
h) Classification of familiar chemical transformations as releasing or absorbing heat/energy	○	○	○

24 continued

The following list includes the main topics addressed by the TIMSS science test. Choose the response that best describes when students in the TIMSS class have been taught each topic. If a topic was taught half this year and half before this year, please choose "Mostly taught this year."

*Fill in **one** circle for each row*

	Not yet taught or just introduced	Mostly taught this year	Mostly taught before this year
C. Physics			
a) Physical states and changes in matter (explanations of properties including volume, shape, density and compressibility in terms of movement/distance between particles)	○	○	○
b) The processes of melting, freezing, evaporation, and condensation (phase change by supplying/removing heat; melting/boiling points; effects of pressure and purity of substances)	○	○	○
c) Energy types, sources, and conversions, including heat transfer	○	○	○
d) Thermal expansion and changes in volume and/or pressure	○	○	○
e) Basic properties/behavior of light (reflection, refraction, light and color, simple ray diagrams)	○	○	○
f) Properties of sound (production by vibration, transmission through media, ways of describing sound (intensity, pitch), relative speed)	○	○	○
g) Electric circuits (flow of current, types of circuits – open/closed, parallel/series) and relationship between voltage and current	○	○	○
h) Properties of permanent magnets and electromagnets	○	○	○
i) Forces and motion (types of forces, basic description of motion), use of distance/time graphs	○	○	○
j) Effects of density and pressure	○	○	○

24 continued

The following list includes the main topics addressed by the TIMSS science test. Choose the response that best describes when students in the TIMSS class have been taught each topic. If a topic was taught half this year and half before this year, please choose "Mostly taught this year."

*Fill in **one** circle for each row*

	Not yet taught or just introduced	Mostly taught this year	Mostly taught before this year
D. Earth Science			
a) Earth's structure and physical features (Earth's crust, mantle, and core; topographic maps)	○	○	○
b) The physical state, movement, composition, and relative distribution of water on the Earth	○	○	○
c) The Earth's atmosphere and the relative abundance of its main components	○	○	○
d) Earth's water cycle (steps, role of sun's energy, circulation/renewal of fresh water)	○	○	○
e) Processes in the rock cycle and the formation of igneous, metamorphic, and sedimentary rock	○	○	○
f) Weather data/maps, and changes in weather patterns (e.g., seasonal changes, effects of latitude, altitude and geography)	○	○	○
g) Geological processes occurring over billions of years (e.g., erosion, mountain building, plate movement)	○	○	○
h) Formation of fossils and fossil fuels	○	○	○
i) Explanation of phenomena on Earth based on position/movement of bodies in the solar sytem and universe (e.g., day/night, tides, year, phases of the moon, eclipses, seasons, appearance of sun, moon, planets, and constellations)	○	○	○
j) The physical features of Earth compared with the moon and other planets (e.g., atmosphere, temperature, water, distance from sun, period of revolution/rotation, ability to support life)	○	○	○
k) The sun as a star	○	○	○
E. Environmental Science			
a) Trends in human population and its effects on the environment	○	○	○
b) Use and conservation of natural resources (renewable/non-renewable resources, human use of land/soil and water resources)	○	○	○
c) Changes in environments (role of human activity, effects/prevention of pollution, global environmental concerns, impact of natural hazards)	○	○	○

Computers in the TIMSS Class

25

A. Do students in the TIMSS class have computers available to use during their science lessons?

	No	Yes
*Fill in **one** circle only*	○	○

*If **No**, please go to question* **27**

B. Do any of the computers have access to the Internet?

	No	Yes
*Fill in **one** circle only*	○	○

26

In teaching science to the <TIMSS class>, how often do you have students use a computer for the following activities?

*Fill in **one** circle for each row*

	Never	Some lessons	About half the lessons	Every or almost every lesson
a) Do scientific procedures or experiments	○	○	○	○
b) Study natural phenomena through simulations	○	○	○	○
c) Practice skills and procedures	○	○	○	○
d) Look up ideas and information	○	○	○	○
e) Process and analyze data	○	○	○	○

Homework

27

Do you assign science homework to the <TIMSS class>?

	No	Yes
*Fill in **one** circle only*	○	○

*If **No**, please go to question* **32**

28

How often do you usually assign science homework to the <TIMSS class>?

*Fill in **one** circle only*

- Every or almost every lesson ○
- About half the lessons ○
- Some lessons ○

29

When you assign science homework to the <TIMSS class>, about how many minutes do you usually assign? (Consider the time it would take an average student in your class.)

*Fill in **one** circle only*

- Fewer than 15 minutes ○
- 15-30 minutes ○
- 31-60 minutes ○
- 61-90 minutes ○
- More than 90 minutes ○

30

How often do you assign the following kinds of science homework to the <TIMSS class>?

*Fill in **one** circle for each row*

		Never or almost never	Sometimes	Always or almost always
a)	Doing problem/question sets	○	○	○
b)	Finding one or more applications of the content covered	○	○	○
c)	Reading from a textbook or supplementary materials	○	○	○
d)	Writing definitions or other short writing assignments	○	○	○
e)	Working on projects	○	○	○
f)	Working on small investigations or gathering data	○	○	○
g)	Preparing reports	○	○	○

31

How often do you do the following with the science homework assignments?

*Fill in **one** circle for each row*

		Never or almost never	Sometimes	Always or almost always
a)	Monitor whether or not the homework was completed	○	○	○
b)	Correct assignments and then give feedback to students	○	○	○
c)	Have students correct their own homework in class	○	○	○
d)	Use the homework as a basis for class discussion	○	○	○
e)	Use the homework to contribute towards students' grades or marks	○	○	○

32

How often do you give a science test or examination to the <TIMSS class>?

*Fill in **one** circle only*

- About once a week ○
- About every two weeks ○
- About once a month ○
- A few times a year ○
- Never ○

*If **Never**, you have completed the questionnaire*

33

What item formats do you typically use in your science tests or examinations?

*Fill in **one** circle only*

- Only constructed-response ○
- Mostly constructed-response ○
- About half constructed-response and half objective (e.g., multiple-choice) ○
- Mostly objective ○
- Only objective ○

34

How often do you include the following types of questions in your science tests or examinations?

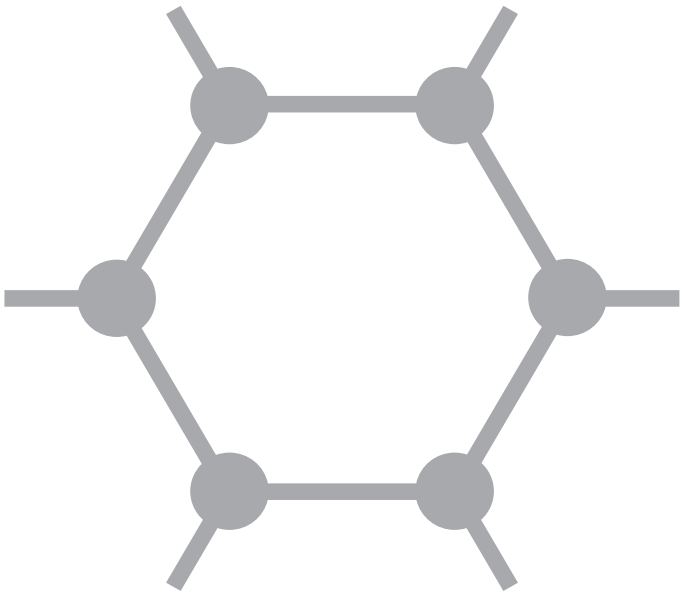
*Fill in **one** circle for each row*

		Never or almost never	**Sometimes**	**Always or almost always**
a)	Questions requiring understanding of concepts, relationships, and processes	○	○	○
b)	Questions involving hypotheses and conclusions	○	○	○
c)	Questions based on recall of facts or procedures	○	○	○

Thank You

for completing this questionnaire

TIMSS International Study Center
Boston College
Chestnut Hill, MA 02467



<TIMSS National Research Center Name>
<Address>

Identification Label

Teacher Name: _____

Class Name: _____

Teacher ID: _____ Teacher Link # _____

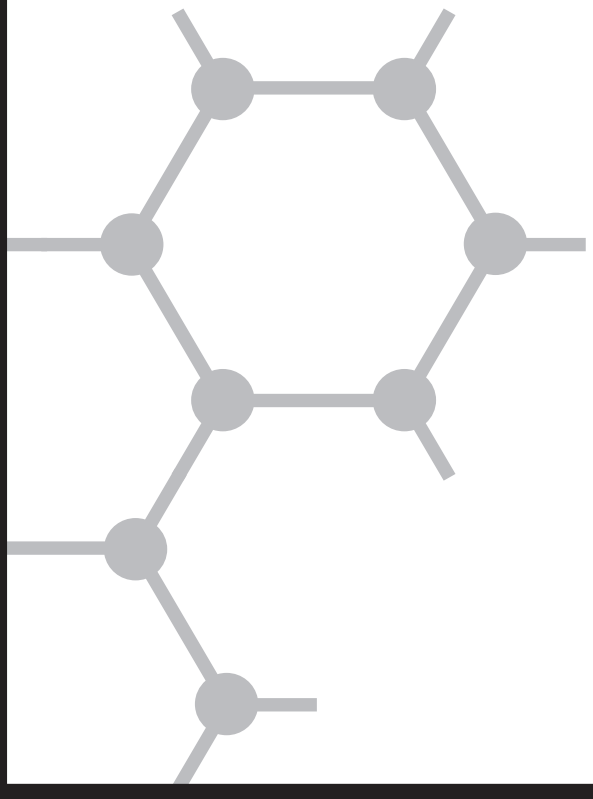
IEA Trends in International Mathematics and Science Study

TIMSS 2003

Main Survey

Teacher Questionnaire

<Grade 4>



General Directions

Your school has agreed to participate in TIMSS 2003, a large international study of student learning in mathematics and science in more than 50 countries around the world. Sponsored by the International Association for the Evaluation of Educational Achievement (IEA), TIMSS (for Trends in International Mathematics and Science Study) is measuring trends in student achievement and studying differences in national education systems in order to help improve the teaching and learning of mathematics and science worldwide.

As part of the study, students in a nationwide sample of <fourth-grade> classes in <country> will complete the TIMSS mathematics and science tests. This questionnaire is addressed to teachers who teach mathematics and science to these students, and seeks information about teachers' academic and professional background, instructional practices, and attitudes toward teaching mathematics and science. As a teacher of the students in one of these sampled classes, your responses to these questions are very important in helping to describe mathematics and science education in <country>.

Some of the questions in this questionnaire refer specifically to students in the "TIMSS class." This is the class that is identified on the cover of this questionnaire, and that will be tested as part of TIMSS 2003 in your school. If you teach some but not all of the students in the TIMSS class, please think only of the students that you teach when answering these class-specific questions. It is important that you answer each question carefully so that the information that you provide reflects your situation as accurately as possible.

Please identify a time and place where you will be able to complete this questionnaire without being interrupted. This should require no more than 45 minutes. To make it as easy as possible for you to respond, most questions may be answered simply by checking or filling the appropriate circle.

Once you have completed the questionnaire, place it in the return envelope provided and return it to: <Country Specific Information>

Thank you very much for the time and effort you have put into responding to this questionnaire.

Teacher Background Information

1

How old are you?

*Fill in **one** circle only*

- Under 25 ○
- 25–29 ○
- 30–39 ○
- 40–49 ○
- 50–59 ○
- 60 or older ○

2

Are you female or male?

*Fill in **one** circle only*

- Female ○
- Male ○

3

By the end of this school year, how many years will you have been teaching altogether?

_____

Number of years you have taught

4

What is the highest level of formal education you have completed?

*Fill in **one** circle only*

- Did not complete <ISCED 3> ○
- Finished <ISCED 3> ○
- Finished <ISCED 4B> ○
- Finished <ISCED 5B> ○
- Finished < ISCED 5A, first degree> ○
- Finished <ISCED 5A, second degree> or higher ○

5

How many years of <pre-service teacher training> did you have? Please round to the nearest whole number.

*Fill in **one** circle only*

- 0 years ○
- 1 year ○
- 2 years ○
- 3 years ○
- 4 years ○
- 5 years ○
- More than 5 years ○

6

A. During your <post-secondary> education, what was your major or main area(s) of study?

*Fill in **one** circle for each row*

		No	Yes
a)	Education - <Primary/Elementary>	○	○
b)	Education - Secondary	○	○
c)	Mathematics	○	○
d)	Science	○	○
e)	Other	○	○

B. If your major or main area of study was education, did you have a <specialization> in any of the following?

*Fill in **one** circle for each row*

		No	Yes
a)	Mathematics	○	○
b)	Science	○	○
c)	Language/reading	○	○
d)	Other subject	○	○

7

What requirements did you have to satisfy in order to become a teacher at <grade 4>?

*Fill in **one** circle for each row*

		No	Yes
a)	Complete <ISCED 5A, first degree>	○	○
b)	Complete a probationary period	○	○
c)	Complete a minimum number of education courses	○	○
d)	Complete a minimum number of mathematics courses	○	○
e)	Complete a minimum number of science courses	○	○
f)	Pass a licensing examination	○	○

8

A. Do you have a teaching license or certificate?

	No	Yes
*Fill in **one** circle only*	○	○

*If **No**, please go to question* **9**

B. What type of license or certificate do you hold?

*Fill in **one** circle only*

- <Full certificate> ○
- <Provisional certificate> ○
- <Emergency certificate> ○
- Other ○

(Please specify:_____)

About Your School

9

How would you characterize each of the following within your school?

*Fill in **one** circle for each row*

	Very low	Low	Medium	High	Very high
a) Teachers' job satisfaction	○	○	○	○	○
b) Teachers' understanding of the school's curricular goals	○	○	○	○	○
c) Teachers' degree of success in implementing the school's curriculum	○	○	○	○	○
d) Teachers' expectations for student achievement	○	○	○	○	○
e) Parental support for student achievement	○	○	○	○	○
f) Parental involvement in school activities	○	○	○	○	○
g) Students' regard for school property	○	○	○	○	○
h) Students' desire to do well in school	○	○	○	○	○

10

Thinking about your CURRENT school, indicate the extent to which you agree or disagree with each of the following statements.

*Fill in **one** circle for each row*

	Disagree a lot	Disagree	Agree	Agree a lot
a) This school facility (building and grounds) is in need of significant repair	○	○	○	○
b) This school is located in a safe neighborhood	○	○	○	○
c) I feel safe at this school	○	○	○	○
d) This school's security policies and practices are sufficient	○	○	○	○

11

How often do you have the following types of interactions with other teachers?

*Fill in **one** circle for each row*

	Daily or almost daily	1-3 times per week	2 or 3 times per month	Never or almost never
a) Discussions about how to teach a particular concept	○	○	○	○
b) Working on preparing instructional materials	○	○	○	○
c) Visits to another teacher's classroom to observe his/her teaching	○	○	○	○
d) Informal observations of **my** classroom by another teacher	○	○	○	○

About Teaching Mathematics

12

Considering your training and experience in both mathematics content and instruction, how ready do you feel you are to teach these topics at the <fourth> grade?

*Fill in **one** circle for each row*

	Very ready	Ready	Not ready
A. Number			
a) Adding, subtracting, multiplying and/or dividing with whole numbers	○	○	○
b) Fractions (parts of a whole or a collection, location on a number line)	○	○	○
c) Fractions or decimals represented by words, numbers, or models	○	○	○
d) Adding and subtracting with decimals	○	○	○
B. Patterns, Equations, and Relationships			
a) Patterns of numbers or shapes (extending sequences and finding missing terms)	○	○	○
b) Simple equations	○	○	○
c) Finding a rule for a relationship given some pairs of numbers	○	○	○
C. Measurement			
a) Recognizing and selecting appropriate units to measure length, weight, time, and temperature	○	○	○
b) Estimating and measuring length, area, volume, weight, and time	○	○	○
D. Geometry			
a) Familiar two- and three-dimensional shapes and their properties	○	○	○
b) Congruent triangles (i.e., same shape and size)	○	○	○
c) Relationships between two-dimensional and three-dimensional shapes	○	○	○
d) Translation, reflection, and rotation (<shifts, flips, and turns> of shapes)	○	○	○
E. Data			
a) Recognizing what various numbers, symbols, and points mean in data displays	○	○	○
b) Displaying data using tables, pictographs, and bar graphs	○	○	○
c) Drawing conclusions from data displays	○	○	○

13

In the past two years, have you participated in professional development in any of the following?

*Fill in **one** circle for each row*

		Yes	No
a)	Mathematics content	○	○
b)	Mathematics pedagogy/instruction	○	○
c)	Mathematics curriculum	○	○
d)	Integrating information technology into mathematics	○	○
e)	Improving students' critical thinking or problem solving skills	○	○
f)	Mathematics assessment	○	○

Teaching Mathematics to the TIMSS Class

Questions 14–29 refer to the TIMSS class. Remember, "the TIMSS class" is the class which is identified on the cover of this questionnaire, and which will be tested as part of TIMSS 2003 in your school.

14

A. How many students are in the TIMSS class for mathematics?

_____

Write in the number of students

B. How many students in Question 14A are in the <fourth grade> ?

_____

Write in the number of <fourth grade> students

15

How many minutes per week do you teach mathematics to the <fourth-grade> students in the TIMSS class?

_____

Write in the number of minutes per week

16

A. Do you use a textbook(s) in teaching mathematics to the <fourth-grade> students in the TIMSS class?

	No	Yes
*Fill in **one** circle only*	○	○

*If **No**, please go to question* **17**

B. How do you use a textbook(s) in teaching mathematics to the <fourth-grade> students in the TIMSS class?

*Fill in **one** circle only*

As the primary basis for my lessons ○

As a supplementary resource ○

17

In a typical week of mathematics lessons for the <fourth grade> students in the TIMSS class, what percentage of time do students spend on each of the following activities?

Write in the percent
The total should add to 100%

a) Reviewing homework _____%

b) Listening to lecture-style presentations _____%

c) Working problems with your guidance _____%

d) Working problems on their own without your guidance _____%

e) Listening to you re-teach and clarify content/procedures _____%

f) Taking tests or quizzes _____%

g) Participating in classroom management tasks not related to the lesson's content/purpose (e.g., interruptions and keeping order) _____%

h) Other student activities _____%

Total 100%

18

Are the <fourth-grade> students in the TIMSS class permitted to use calculators during mathematics lessons?

*Fill in **one** circle only*

Yes, with unrestricted use ---------- ○

Yes, with restricted use ---------- ○

No, calculators are not permitted ---------- ○

*If **No,** please go to question* **22**

19

How many <fourth-grade> students in the TIMSS class have calculators available to use during mathematics lessons?

*Fill in **one** circle only*

All ---------- ○

Most ---------- ○

About half ---------- ○

Some ---------- ○

None ---------- ○

20

How often do the <fourth-grade> students in the TIMSS class use calculators in their mathematics lessons for the following activities?

*Fill in **one** circle for each row*

	Never	Some lessons	About half the lessons	Every or almost every lesson
a) Check answers	○	○	○	○
b) Do routine computations	○	○	○	○
c) Solve complex problems	○	○	○	○
d) Explore number concepts	○	○	○	○

21

How often are the <fourth grade> students in the TIMSS class permitted to use calculators during tests or examinations?

*Fill in **one** circle only*

Always ---------- ○

Sometimes ---------- ○

Never ---------- ○

22

A. Do the <fourth-grade> students in the TIMSS class have computers available to use during their mathematics lessons?

	No	Yes
*Fill in **one** circle only*	○	○

*If **No**, please go to question* **24**

B. Do any of the computers have access to the Internet?

	No	Yes
*Fill in **one** circle only*	○	○

23

In teaching mathematics to the <fourth-grade> students in the TIMSS class, how often do you have students use a computer for the following activities?

*Fill in **one** circle for each row*

	Never	Some lessons	About half the lessons	Every or almost every lesson
a) Discover mathematics principles and concepts	○	○	○	○
b) Practice skills and procedures	○	○	○	○
c) Look up ideas and information	○	○	○	○

24

In teaching mathematics to the <fourth-grade> students in the TIMSS class, how often do you usually ask them to do the following?

*Fill in **one** circle for each row*

	Never	Some lessons	About half the lessons	Every or almost every lesson
a) Practice adding, subtracting, multiplying, and dividing without using a calculator	○	○	○	○
b) Work on fractions and decimals	○	○	○	○
c) Measure things in the classroom and around the school	○	○	○	○
d) Make tables, charts, or graphs	○	○	○	○
e) Learn about shapes such as circles, triangles, rectangles, and cubes	○	○	○	○
f) Write equations for word problems	○	○	○	○
g) Work together in small groups	○	○	○	○
h) Explain their answers	○	○	○	○

25

By the end of this school year, approximately what percentage of teaching time will you have spent during this school year on each of the following mathematics content areas for the <fourth-grade> students in the TIMSS class?

Write in the percent
The total should add to 100%

a) Number (includes computation with whole numbers, fractions, and decimals) _____%

b) Patterns, Equations, and Relationships (includes sequences of numbers or shapes, simple equations, and finding rules) _____%

c) Measurement (includes recognizing units and using tools) _____%

d) Geometry (includes two- and three- dimensional shapes) _____%

e) Data (includes reading, making, and interpreting tables and graphs) _____%

f) Other, please specify:

_____ _____%

Total 100%

26

The following list includes the main topics addressed by the TIMSS mathematics test. Choose the response that best describes when the <fourth-grade> students in the TIMSS class have been taught each topic. If a topic was taught half this year and half before this year, please choose "Mostly taught this year."

*Fill in **one** circle for each row*

		Not yet taught or just introduced	Mostly taught this year	Mostly taught before this year
A. Number				
a)	Whole numbers including place value and ordering	○	○	○
b)	Represent whole numbers using words, diagrams, or symbols	○	○	○
c)	Properties of whole numbers such as odd and even, multiples, or factors	○	○	○
d)	Computation with whole numbers	○	○	○
e)	Estimation with whole numbers	○	○	○
f)	Fractions (parts of a whole or a collection, location on a number line)	○	○	○
g)	Equivalent fractions	○	○	○
h)	Compare and order fractions	○	○	○
i)	Fractions or decimals represented by words, numbers, or models	○	○	○
j)	Adding and subtracting fractions with the same denominator	○	○	○
k)	Adding and subtracting with decimals (tenths and/or hundredths)	○	○	○
l)	Simple proportional reasoning	○	○	○
B. Patterns, Equations, and Relationships				
a)	Patterns of numbers or shapes (extending sequences and finding missing terms)	○	○	○
b)	Equality using equations, areas, volumes, masses/weights	○	○	○
c)	Missing number in an equation (e.g., if 17 + ___ = 29, what number would go in the blank to make the equation true?)	○	○	○
d)	Simple equations	○	○	○
e)	Pairs of numbers following a given rule (e.g., multiply the first number by 3 and add 2 to get the second number)	○	○	○
f)	Finding a rule for a relationship given some pairs of numbers	○	○	○

26 continued

The following list includes the main topics addressed by the TIMSS mathematics test. Choose the response that best describes when the <fourth-grade> students in the TIMSS class have been taught each topic. If a topic was taught half this year and half before this year, please choose "Mostly taught this year."

*Fill in **one** circle for each row*

	Not yet taught or just introduced	Mostly taught this year	Mostly taught before this year
C. Measurement			
a) Non-standard units to measure length, area, volume, and time (e.g., paper clips for length, tiles for area, sugar cubes for volume)	○	○	○
b) Standard units to measure length, area, mass/weight, angle, and time (e.g., kilometers for car trips, centimeters for human height)	○	○	○
c) Conversion factors between standard units (e.g., hours to minutes, grams to kilograms)	○	○	○
d) Instruments to measure length, weight, time, and temperature in problem situations (e.g., rulers and scales)	○	○	○
e) Calculating areas and perimeters of squares	○	○	○
f) Estimating length, area, volume, weight, and time	○	○	○
D. Geometry			
a) Angles greater than, equal to, or less than a right angle (or 90º)	○	○	○
b) Parallel and perpendicular lines	○	○	○
c) Familiar two- and three-dimensional shapes and their properties	○	○	○
d) Congruent triangles (i.e., same shape and size)	○	○	○
e) Similar triangles (i.e., same shape and different size)	○	○	○
f) Points in a plane	○	○	○
g) Relationships between two-dimensional and three-dimensional shapes	○	○	○
h) Informal coordinate systems	○	○	○
i) Symmetry about a line	○	○	○
j) Two-dimensional symmetrical figures	○	○	○
k) Translation, reflection, and rotation (<shifts, flips, and turns> of shapes)	○	○	○

26 continued

The following list includes the main topics addressed by the TIMSS mathematics test. Choose the response that best describes when the <fourth-grade> students in the TIMSS class have been taught each topic. If a topic was taught half this year and half before this year, please choose "Mostly taught this year."

*Fill in **one** circle for each row*

	Not yet taught or just introduced	Mostly taught this year	Mostly taught before this year
E. Data			
a) Recognizing what various numbers, symbols, and points mean in data displays	○	○	○
b) Organizing a set of data by one characteristic (e.g., height, color, age, shape)	○	○	○
c) Reading data directly from tables, pictographs, bar graphs, and pie charts	○	○	○
d) Displaying data using tables, pictographs, and bar graphs	○	○	○
e) Comparing and matching different representations of the same data	○	○	○
f) Characteristics of related data sets (e.g., given data or representations of data on student heights in two classes, identify the class with the shortest/tallest person)	○	○	○
g) Drawing conclusions from data displays	○	○	○

27

Do you assign mathematics homework to the <fourth-grade> students in the TIMSS class?

	No	Yes
*Fill in **one** circle only*	○	○

*If **No**, please go to question* **30**

28

How often do you usually assign mathematics homework to the <fourth-grade> students in the TIMSS class?

*Fill in **one** circle only*

- Every or almost every lesson ○
- About half the lessons ○
- Some lessons ○

29

When you assign mathematics homework to the <fourth-grade> students in the TIMSS class, about how many minutes do you usually assign? (Consider the time it would take an average student in your class.)

*Fill in **one** circle only*

- Fewer than 15 minutes ○
- 15-30 minutes ○
- 31-60 minutes ○
- 61-90 minutes ○
- More than 90 minutes ○

30

Considering your training and experience in both science content and instruction, how ready do you feel you are to teach these topics at the <fourth> grade?

*Fill in **one** circle for each row*

	Very ready	Ready	Not ready
A. Life Science			
a) Major body structures and their functions in humans and other organisms (plant and animals)	○	○	○
b) Reproduction and development in plants and animals (passing on of general characteristics; life cycles of familiar organisms)	○	○	○
c) Physical features, behavior, and survival of organisms living in different environments	○	○	○
d) Relationships in a living community (e.g., simple food chains, predator/prey relationships)	○	○	○
e) Changes in environments (effects of human activity, pollution and its prevention)	○	○	○
f) Human health (e.g., transmission/prevention of communicable diseases, signs of health/illness, diet, exercise)	○	○	○
B. Physical Science			
a) Classification of objects/materials based on physical properties (e.g., mass, shape, volume, color, hardness, texture, heat/electrical conductivity, magnetic attraction)	○	○	○
b) Forming and separating mixtures	○	○	○
c) Chemical and physical changes (e.g., decaying of animal/plant matter, burning, rusting)	○	○	○
d) States of matter (solids, liquids, gases) and differences in their physical properties (shape, volume), including changes in state of water by heating and cooling (melting, freezing, boiling)	○	○	○
e) Common energy sources/forms and their practical uses (e.g., wind, sun, electricity, burning fuel, water wheel, food)	○	○	○
f) Common uses of electricity and electrical circuits	○	○	○
g) Forces that cause objects to move (e.g., gravity, push/pull forces)	○	○	○
C. Earth Science			
a) Features of Earth's landscape (e.g., mountains, plains, rivers, deserts)	○	○	○
b) Water on Earth (location, types, and movement)	○	○	○
c) Air (composition, proof of its existence, uses, and importance for supporting life)	○	○	○
d) Common features of the Earth's landscape (e.g., mountains, plains, rivers, deserts) and relationship to human use (e.g., farming, irrigation, land development)	○	○	○
e) Fossils of animals and plants (age, formation)	○	○	○
f) Earth's solar system (planets, sun, moon)	○	○	○

31

In the past two years, have you participated in professional development in any of the following?

*Fill in **one** circle for each row*

		Yes	No
a)	Science content	○	○
b)	Science pedagogy/instruction	○	○
c)	Science curriculum	○	○
d)	Integrating information technology into science	○	○
e)	Improving students' critical thinking or inquiry skills	○	○
f)	Science assessment	○	○

Teaching Science to the TIMSS Class

Questions 32 - 42 refer to the TIMSS class. Remember, "the TIMSS class" is the class which is identified on the cover of this questionnaire, and which will be tested as part of TIMSS 2003 in your school.

32

A. How many students are in the TIMSS class for science?

_____

Write in the number of students

B. How many students in Question 32A are in the <fourth grade> ?

_____

Write in the number of <fourth grade> students

33

Is science taught mainly as a separate subject (i.e., not integrated with other subjects) to the <fourth-grade> students in the TIMSS class?

	No	Yes
*Fill in **one** circle only*	○	○

A. If YES...

How many minutes per week do you teach science to the <fourth-grade> students in the TIMSS class?

_____

Write in the number of minutes per week

B. If NO...

Please estimate the number of minutes per week that you spend on science topics with the <fourth-grade> students in the TIMSS class.

_____

Write in the number of minutes per week

34

A. Do you use a textbook(s) in teaching science to the <fourth-grade> students in the TIMSS class?

	No	Yes
*Fill in **one** circle only*	○	○

*If **No**, please go to question* **35** →

B. How do you use a textbook(s) in teaching science to the <fourth-grade> students in the TIMSS class?

*Fill in **one** circle only*

As the primary basis for my lessons ○

As a supplementary resource ○

35

A. Do the <fourth grade> students in the TIMSS class have computers available to use when you are teaching science?

	No	Yes
*Fill in **one** circle only*	○	○

*If **No**, please go to question* **37**

B. Do any of the computers have access to the Internet?

	No	Yes
*Fill in **one** circle only*	○	○

36

In teaching science to the <fourth-grade> students in the TIMSS class, how often do you have students use a computer for the following activities?

*Fill in **one** circle for each row*

	Never	Some lessons	About half the lessons	Every or almost every lesson
a) Do scientific procedures or experiments	○	○	○	○
b) Study natural phenomena through simulations	○	○	○	○
c) Practice skills and procedures	○	○	○	○
d) Look up ideas and information	○	○	○	○

37

In teaching science to the <fourth grade> students in the TIMSS class, how often do you usually ask them to do the following?

*Fill in **one** circle for each row*

	Never	Some lessons	About half the lessons	Every or almost every lesson
a) Watch me do a science experiment	○	○	○	○
b) Design or plan experiments or investigations	○	○	○	○
c) Do experiments or investigations	○	○	○	○
d) Work together in small groups on experiments or investigations	○	○	○	○
e) Relate what they are learning in science to their daily lives	○	○	○	○
f) Write or give explanations about something they are studying	○	○	○	○
g) Observe something like the weather or a plant growing and write down what they see	○	○	○	○
h) Present their work to the class	○	○	○	○

38

By the end of this school year, approximately what percentage of teaching time will you have spent during this school year on each of the following science content areas for the <fourth-grade> students in the TIMSS class?

Write in the percent
The total should add to 100%

a) Life science (includes characteristics and cycles of living things, environmental science, and human health) ----------_____%

b) Physical science (includes topics in physics and chemistry) --------_____%

c) Earth science (includes Earth's physical features, natural resources, weather, and solar system) ----------_____%

d) Other, please specify:

_____ --------_____%

Total---------- 100%

39

The following list includes the main topics addressed by the TIMSS science test. Choose the response that best describes when the <fourth-grade> students in the TIMSS class have been taught each topic. If a topic was taught half this year and half before this year, please choose "Mostly taught this year."

*Fill in **one** circle for each row*

	Not yet taught or just introduced	Mostly taught before this year	Mostly taught this year
A. Life Science			
a) Types, characteristics, and classification of living things	○	○	○
b) Major body structures and their function in humans and other organisms (plants and animals)	○	○	○
c) Bodily actions in response to outside conditions (e.g., heat, cold, danger) and activities (e.g., exercise)	○	○	○
d) The general steps in the life cycle of familiar organisms (e.g., humans, insects, frogs, plants)	○	○	○
e) Plant and animal reproduction (passing on of general characteristics)	○	○	○
f) Physical features, behavior, and survival of plants and animals in different environments	○	○	○
g) Relationships in a living community (e.g., simple food chains using common plants and animals and predator/prey relationships)	○	○	○
h) Changes in environments (effects of human activity, pollution and its prevention)	○	○	○
i) Ways that common communicable diseases (e.g., colds, influenza) are transmitted; signs, prevention, and treatment of illness	○	○	○
j) Ways of maintaining good health, including diet and exercise	○	○	○

39 continued

The following list includes the main topics addressed by the TIMSS science test. Choose the response that best describes when the <fourth-grade> students in the TIMSS class have been taught each topic. If a topic was taught half this year and half before this year, please choose "Mostly taught this year."

*Fill in **one** circle for each row*

		Not yet taught or just introduced	Mostly taught this year	Mostly taught before this year
B. Physical Science				
a)	Classification of objects and materials based on physical properties	○	○	○
b)	Properties and uses of metals	○	○	○
c)	Forming and separating mixtures	○	○	○
d)	Properties and uses of water	○	○	○
e)	Chemical and physical changes (e.g., decaying of animal/plant matter, burning, rusting)	○	○	○
f)	States of matter (solids, liquids and gases) and differences in their physical properties in terms of shape and volume	○	○	○
g)	Changes in state of water by heating and cooling (melting, freezing, boiling)	○	○	○
h)	Common energy sources/forms and their practical uses (e.g., wind, sun, electricity, burning fuel, water wheel, food)	○	○	○
i)	Heat flow and temperature	○	○	○
j)	Common sources of light and related phenomena (e.g., formation of rainbows and shadows, visibility of objects, mirrors, colors)	○	○	○
k)	Common uses of electricity and electrical circuits	○	○	○
l)	Magnets (north and south poles, magnetic attraction and repulsion)	○	○	○
m)	Forces that cause objects to move (e.g., gravity, push/pull forces)	○	○	○

39 continued

The following list includes the main topics addressed by the TIMSS science test. Choose the response that best describes when the <fourth-grade> students in the TIMSS class have been taught each topic. If a topic was taught half this year and half before this year, please choose "Mostly taught this year."

*Fill in **one** circle for each row*

		Not yet taught or just introduced	Mostly taught this year	Mostly taught before this year
C. Earth Science				
a)	Rocks, minerals, sand, and soil	○	○	○
b)	Water on Earth (location, types, and movement)	○	○	○
c)	Air (composition, proof of its existence, uses, and importance for supporting life)	○	○	○
d)	Common features of the Earth's landscape (e.g., mountains, plains, rivers, deserts) and relationship to human use (e.g., farming, irrigation, land development)	○	○	○
e)	Use and conservation of Earth's natural resources	○	○	○
f)	Earth's water cycle (water flowing in rivers from mountains to sea, cloud formation and precipitation)	○	○	○
g)	Weather conditions from day to day or over the seasons	○	○	○
h)	Fossils of animals and plants (age, formation)	○	○	○
i)	Earth's solar system (planets, sun, moon)	○	○	○

40

Do you assign science homework to the <fourth-grade> students in the TIMSS class?

	No	Yes
*Fill in **one** circle only*	○	○

*If **No**, you have completed the questionnaire* ●

41

How often do you usually assign science homework to the <fourth-grade> students in the TIMSS class?

*Fill in **one** circle only*

- Every or almost every lesson ○
- About half the lessons ○
- Some lessons ○

42

When you assign science homework to the <fourth-grade> students in the TIMSS class, about how many minutes do you usually assign? (Consider the time it would take an average student in your class.)

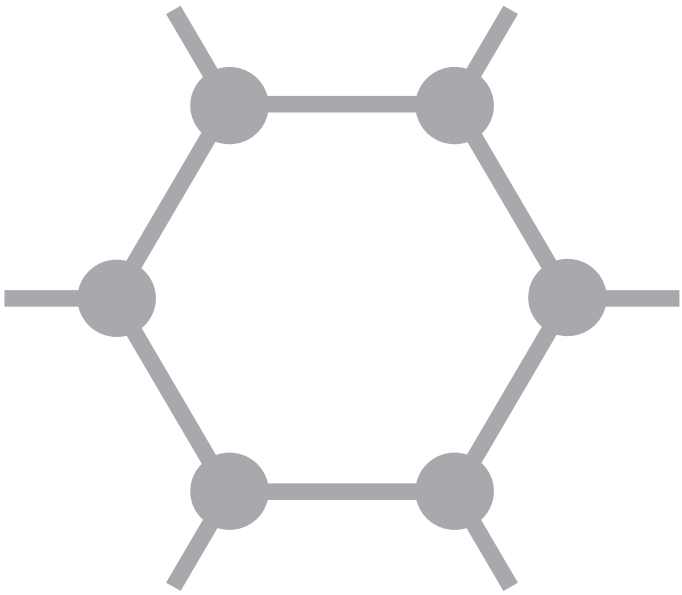
*Fill in **one** circle only*

- Fewer than 15 minutes ○
- 15-30 minutes ○
- 31-60 minutes ○
- 61-90 minutes ○
- More than 90 minutes ○

Thank You

for completing this questionnaire

TIMSS International Study Center
Boston College
Chestnut Hill, MA 02467



<TIMSS National Research Center Name>
<Address>

Identification Label

School ID: _____

Stratum ID: _____

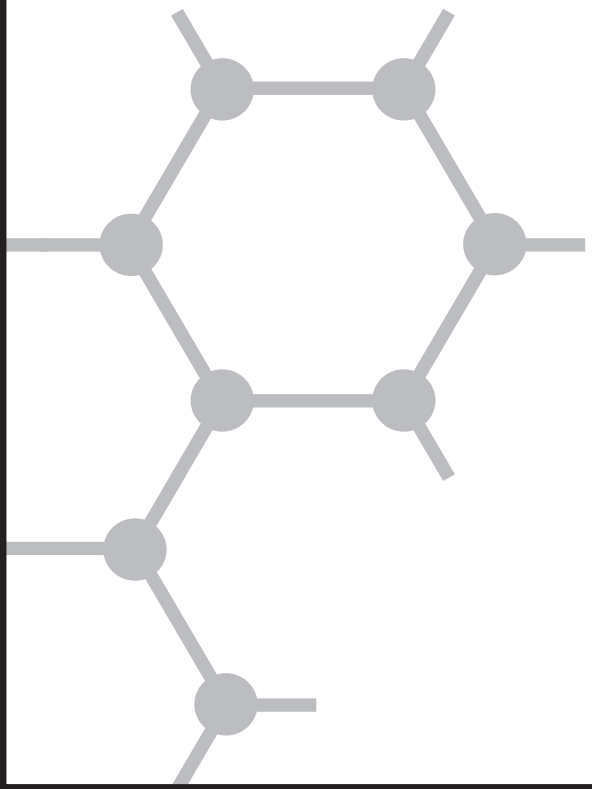
IEA Trends in International Mathematics and Science Study

TIMSS 2003

Main Survey

School Questionnaire

<Grade 8>



General Directions

Your school has agreed to participate in TIMSS 2003, a large international study of student learning in mathematics and science in more than 50 countries around the world. Sponsored by the International Association for the Evaluation of Educational Achievement (IEA), TIMSS (for Trends in International Mathematics and Science Study) is measuring trends in student achievement and studying differences in national education systems in order to help improve the teaching and learning of mathematics and science worldwide.

This questionnaire is addressed to school principals and department heads who are asked to supply information about their schools. Since your school has been selected as part of a nationwide sample, your responses are very important in helping to describe the school system in <country>.

It is important that you answer each question carefully so that the information provided reflects the situation in your school as accurately as possible. Some of the questions will require that you look up school records, so you may wish to arrange for the assistance of another staff member to help provide this information.

Please identify a time and place where you will be able to complete this questionnaire without being interrupted. This should require no more than 30 minutes. To make it as easy as possible for you to respond, most questions may be answered simply by filling in the appropriate circle.

Once you have completed the questionnaire, place it in the return envelope provided and return it to: <Country Specific Information>

Thank you very much for the time and effort you have put into responding to this questionnaire.

The School Characteristics

<Some of the questions in this questionnaire ask about your school in general. If your school has a wide range of grades, please try to answer such questions with regard to the <junior secondary / middle school / basic> grades.>

1

What are the lowest and highest grade levels in your school?

*Fill in **one** circle for each column*

	A: Lowest Grade	B: Highest Grade
Kindergarten	○	○
1	○	○
2	○	○
3	○	○
4	○	○
5	○	○
6	○	○
7	○	○
8	○	○
9	○	○
10	○	○
11	○	○
12	○	○
13	○	○

2

A. What is the total school enrollment (number of students) in all grades?

*Number of students:*_____

B. What is the enrollment in the <eighth grade>?

*Number of students:*_____

3

How many people live in the city, town, or area where your school is located?

*Fill in **one** circle only*

- More than 500,000 people ○
- 100,001 to 500,000 people ○
- 50,001 to 100,000 people ○
- 15,001 to 50,000 people ○
- 3,001 to 15,000 people ○
- Fewer than 3,000 people ○

4

On a typical school day, what percentage of students are absent from school for any reason?

*Fill in **one** circle only*

- Less than 5% ○
- 5 to 10% ○
- 11 to 20% ○
- More than 20% ○

5

A. Of the students who were enrolled in your school at the start of this school year, about what percentage is still enrolled?

*Fill in **one** circle only*

96 to 100% ○

90 to 95% ○

80 to 89% ○

Less than 80% ○

B. What percentage of the students in your school enrolled after the beginning of the school year?

*Fill in **one** circle only*

Less than 5% ○

5 to 10% ○

11 to 20% ○

More than 20% ○

6

A. Approximately what percentage of students in your school have the following backgrounds?

*Fill in **one** circle for each row*

	More than 50%	26 to 50%	11 to 25%	0 to 10%
a) Come from economically disadvantaged homes	○	○	○	○
b) Come from economically affluent homes	○	○	○	○

B. Approximately what percentage of students in your school have <language of test> as their native language?

*Fill in **one** circle only*

More than 90% ○

76 to 90% ○

50 to 75% ○

Less than 50% ○

7

How would you characterize each of the following within your school?

*Fill in **one** circle for each row*

	Very low	Low	Medium	High	Very high
a) Teachers' job satisfaction	○	○	○	○	○
b) Teachers' understanding of the school's curricular goals	○	○	○	○	○
c) Teachers' degree of success in implementing the school's curriculum	○	○	○	○	○
d) Teachers' expectations for student achievement	○	○	○	○	○
e) Parental support for student achievement	○	○	○	○	○
f) Parental involvement in school activities	○	○	○	○	○
g) Students' regard for school property	○	○	○	○	○
h) Students' desire to do well in school	○	○	○	○	○

Your Role as Principal

8

Including this year, how long have you been principal of this school?

*Number of years:*_____

9

By the end of this school year, approximately what percentage of time in your role as principal will you have spent on these activities?

Write in the percent
The total should add to 100%

a) Administrative duties (e.g., hiring, budgeting, scheduling) ---------- _____%

b) Instructional leadership (e.g., developing curriculum and pedagogy) ---------- _____%

c) Supervising and evaluating teachers and other staff ---------- _____%

d) Teaching ---------- _____%

e) Public relations and fundraising -- _____%

f) Other ---------- _____%

Total ---------- 100%

Parental Involvement

10

Does your school expect parents to do the following?

*Fill in **one** circle for each row*

		No	Yes
a)	Attend special events (e.g., science fair, concert, sporting events)	○	○
b)	Raise funds for the school	○	○
c)	Volunteer for school projects, programs, and trips	○	○
d)	Ensure that their child completes his/her homework	○	○
e)	Serve on school committees (e.g., select school personnel, review school finances)	○	○

<Eighth-grade> Instruction in Mathematics and Science

11

A. How many days per year is your school open for instruction for <eighth-grade> students?

Number of days: _____

B. How many instructional days are there in the school week (typical calendar week from Monday through Sunday) for <eighth-grade> students?

*Fill in **one** circle for each column*

	Number of FULL days (over 4 hours)	Number of HALF days (4 hours or less)
1 day	○	○
2 days	○	○
3 days	○	○
4 days	○	○
5 days	○	○
6 days	○	○
None	○	○

C. To the nearest half-hour, what is the total instructional time in a typical full day (excluding lunch breaks, study hall, and after school activities) for <eighth-grade> students?

*Fill in **one** circle only*

- 4 hours or less ○
- 4.5 hours ○
- 5 hours ○
- 5.5 hours ○
- 6 hours ○
- 6.5 hours or more ○

12

How does your school organize mathematics instruction for <eighth-grade> students with different levels of ability?

*Fill in **one** circle only*

- Students study the same mathematics curriculum ○
- Students study the same mathematics curriculum, but at different levels of difficulty ○
- Students study different mathematics curricula according to their ability levels ○

13

Are <eighth-grade> students in your school grouped by ability within their mathematics classes?

*Fill in **one** circle only*

	No	Yes
	○	○

14

Does your school do any of the following for students in the <eighth grade>?

*Fill in **one** circle for each row*

	No	Yes
a) Offer enrichment mathematics	○	○
b) Offer remedial mathematics	○	○

<Eighth-grade> Teachers in Your School

15

How does your school organize science instruction for <eighth-grade> students with different levels of ability?

*Fill in **one** circle only*

Students study the same science curriculum ○

Students study the same science curriculum, but at different levels of difficulty ○

Students study different science curricula according to their ability levels ○

16

Are <eighth-grade> students in your school grouped by ability within their science classes?

	No	Yes
*Fill in **one** circle only*	○	○

17

Does your school do any of the following for students in the <eighth grade>?

*Fill in **one** circle for each row*

	No	Yes
a) Offer enrichment science	○	○
b) Offer remedial science	○	○

18

How difficult was it to fill <eighth-grade> teaching vacancies for this school year for the following subjects?

*Fill in **one** circle for each row*

	Very difficult	Somewhat difficult	Easy to fill vacancies	Were no vacancies in this subject
a) Mathematics	○	○	○	○
b) Science	○	○	○	○
c) Computer science / information technology	○	○	○	○

19

Does your school currently use any incentives (e.g., pay, housing, signing bonus) to recruit or retain <eighth-grade> teachers in the following fields?

*Fill in **one** circle for each row*

	No	Yes
a) Mathematics	○	○
b) Science	○	○
c) Other	○	○

20

During this school year, how often have your <eighth-grade> teachers been involved in professional development opportunities for mathematics and science targeted at the following?

*Fill in **one** circle for each row*

	Never	1 to 2 times	3 to 5 times	6 to 10 times	More than 10 times
a) Supporting the implementation of the national or regional curriculum	○	○	○	○	○
b) Designing or supporting the school's own improvement goals	○	○	○	○	○
c) Improving content knowledge	○	○	○	○	○
d) Improving teaching skills	○	○	○	○	○
e) Using information and communication technology for educational purposes	○	○	○	○	○

21

A. In your school, are any of the following used to evaluate the practice of <eighth-grade> mathematics teachers?

*Fill in **one** circle for each row*

	Yes	No
a) Observations by the principal or senior staff	○	○
b) Observations by inspectors or other persons external to the school	○	○
c) Student achievement	○	○
d) Teacher peer review	○	○

B. In your school, are any of the following used to evaluate the practice of <eighth-grade> science teachers?

*Fill in **one** circle for each row*

	Yes	No
a) Observations by the principal or senior staff	○	○
b) Observations by inspectors or other persons external to the school	○	○
c) Student achievement	○	○
d) Teacher peer review	○	○

Student Behavior

22

How often does each of the following problem behaviors occur among <eighth-grade> students in your school?

If the behavior occurs, how severe a problem does it present?

A. Frequency in your school

*Fill in **one** circle for each row in this section*

B. Severity of problem in your school

*Fill in **one** circle for each row in this section*

		Never	Rarely	Monthly	Weekly	Daily	Not a problem	Minor problem	Serious problem
a)	Arriving late at school	○	○	○	○	○	○	○	○
b)	Absenteeism (i.e., unjustified absences)	○	○	○	○	○	○	○	○
c)	Skipping class <hours/periods>	○	○	○	○	○	○	○	○
d)	Violating dress code	○	○	○	○	○	○	○	○
e)	Classroom disturbance	○	○	○	○	○	○	○	○
f)	Cheating	○	○	○	○	○	○	○	○
g)	Profanity	○	○	○	○	○	○	○	○
h)	Vandalism	○	○	○	○	○	○	○	○
i)	Theft	○	○	○	○	○	○	○	○
j)	Intimidation or verbal abuse of other students	○	○	○	○	○	○	○	○
k)	Physical injury to other students	○	○	○	○	○	○	○	○
l)	Intimidation or verbal abuse of teachers or staff	○	○	○	○	○	○	○	○
m)	Physical injury to teachers or staff	○	○	○	○	○	○	○	○

23

Is your school's capacity to provide instruction affected by a shortage or inadequacy of any of the following?

*Fill in **one** circle for each row*

	None	A little	Some	A lot
a) Instructional materials (e.g., textbook)	○	○	○	○
b) Budget for supplies (e.g., paper, pencils)	○	○	○	○
c) School buildings and grounds	○	○	○	○
d) Heating/cooling and lighting systems	○	○	○	○
e) Instructional space (e.g., classrooms)	○	○	○	○
f) Special equipment for handicapped students	○	○	○	○
g) Computers for mathematics instruction	○	○	○	○
h) Computer software for mathematics instruction	○	○	○	○
i) Calculators for mathematics instruction	○	○	○	○
j) Library materials relevant to mathematics instruction	○	○	○	○
k) Audio-visual resources for mathematics instruction	○	○	○	○

*Fill in **one** circle for each row*

	None	A little	Some	A lot
l) Science laboratory equipment and materials	○	○	○	○
m) Computers for science instruction	○	○	○	○
n) Computer software for science instruction	○	○	○	○
o) Calculators for science instruction	○	○	○	○
p) Library materials relevant to science instruction	○	○	○	○
q) Audio-visual resources for science instruction	○	○	○	○
r) Teachers	○	○	○	○
s) Computer support staff	○	○	○	○

24

A. What is the total number of computers in your school that can be used for educational purposes by <eighth-grade> students?

*Number of computers:*_____

*If **None,** please go to question* **25**

B. How many of these computers have access to the Internet (e-mail or World Wide Web) for educational purposes?

*Fill in **one** circle only*

All ---------- ○

Most ---------- ○

Some ---------- ○

None ---------- ○

25

A. Is anyone available to help your teachers use information and communication technology for teaching and learning?

No

Yes

*Fill in **one** circle only* ---------- ○ --- ○

*If **No**, you have completed the questionnaire*

B. Which of the following statements best describes the person at this school who helps teachers use information and communication technology for teaching and learning?

*Fill in **one** circle for the best description of that person. If more than one person, choose the one person who spends the most time on this work.*

A full-time school level coordinator (who has no other job responsibility) ---------- ○

A library media specialist who also serves as computer coordinator ---------- ○

A teacher who also has the title of this type of coordinator ---------- ○

A teacher who provides leadership informally to other teachers ---------- ○

A district-level coordinator ---------- ○

The principal or another school administrator ------ ○

Other person ---------- ○

Thank You

for completing this questionnaire

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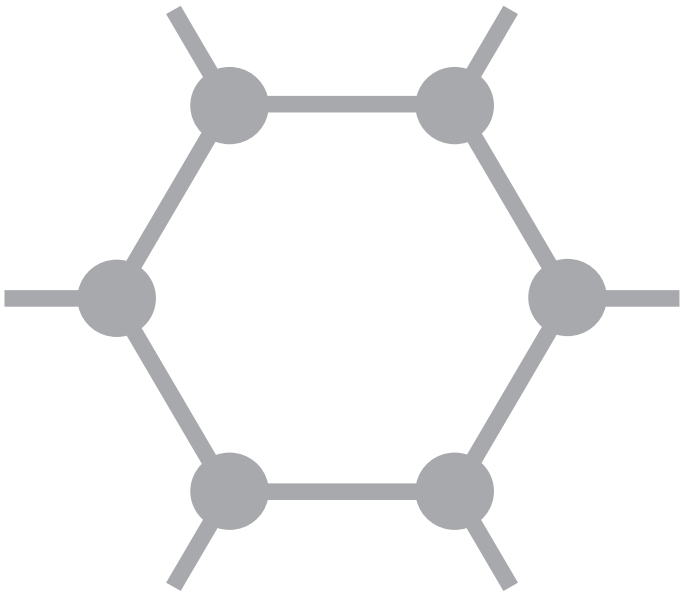
Boston College
Chestnut Hill, MA 02467



<TIMSS National Research Center Name>
<Address>

Identification Label

School ID: _____

Stratum ID: _____

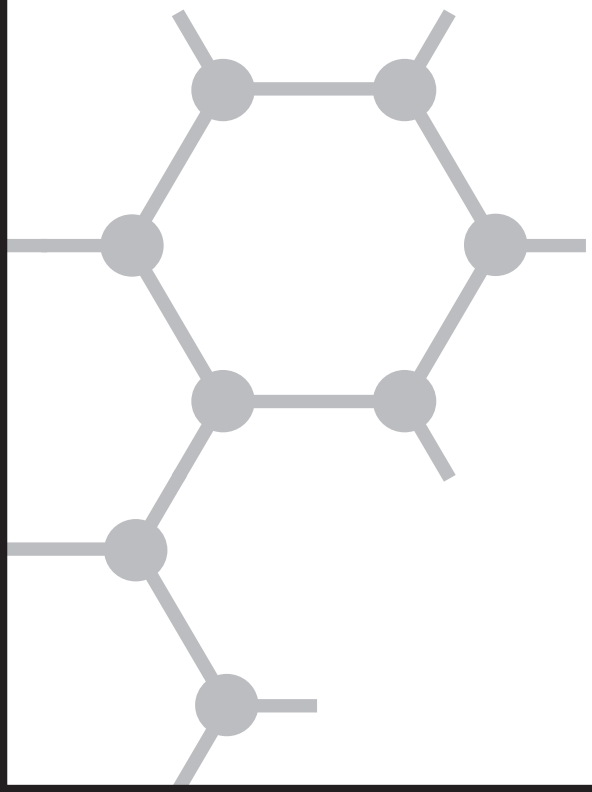
IEA Trends in International Mathematics and Science Study

TIMSS 2003

Main Survey

School Questionnaire

<Grade 4>



General Directions

Your school has agreed to participate in TIMSS 2003, a large international study of student learning in mathematics and science in more than 50 countries around the world. Sponsored by the International Association for the Evaluation of Educational Achievement (IEA), TIMSS (for Trends in International Mathematics and Science Study) is measuring trends in student achievement and studying differences in national education systems in order to help improve the teaching and learning of mathematics and science worldwide.

This questionnaire is addressed to school principals and department heads who are asked to supply information about their schools. Since your school has been selected as part of a nationwide sample, your responses are very important in helping to describe the school system in <country>.

It is important that you answer each question carefully so that the information provided reflects the situation in your school as accurately as possible. Some of the questions will require that you look up school records, so you may wish to arrange for the assistance of another staff member to help provide this information.

Please identify a time and place where you will be able to complete this questionnaire without being interrupted. This should require no more than 30 minutes. To make it as easy as possible for you to respond, most questions may be answered simply by filling in the appropriate circle.

Once you have completed the questionnaire, place it in the return envelope provided and return it to: <Country Specific Information>

Thank you very much for the time and effort you have put into responding to this questionnaire.

The School Characteristics

<Some of the questions in this questionnaire ask about your school in general. If your school has a wide range of grades, please try to answer such questions with regard to the primary grades.>

1

What are the lowest and highest grade levels in your school?

*Fill in **one** circle for each column*

	A: Lowest Grade	B: Highest Grade
Kindergarten	○	○
1	○	○
2	○	○
3	○	○
4	○	○
5	○	○
6	○	○
7	○	○
8	○	○
9	○	○
10	○	○
11	○	○
12	○	○
13	○	○

2

A. What is the total school enrollment (number of students) in all grades?

*Number of students:*_____

B. What is the enrollment in the <fourth grade>?

*Number of students:*_____

3

How many people live in the city, town, or area where your school is located?

*Fill in **one** circle only*

- More than 500,000 people ○
- 100,001 to 500,000 people ○
- 50,001 to 100,000 people ○
- 15,001 to 50,000 people ○
- 3,001 to 15,000 people ○
- Fewer than 3,000 people ○

4

On a typical school day, what percentage of students are absent from school for any reason?

*Fill in **one** circle only*

- Less than 5% ○
- 5 to 10% ○
- 11 to 20% ○
- More than 20% ○

5

A. Of the students who were enrolled in your school at the start of this school year, about what percentage is still enrolled?

*Fill in **one** circle only*

96 to 100% ○
90 to 95% ○
80 to 89% ○
Less than 80% ○

B. What percentage of the students in your school enrolled after the beginning of the school year?

*Fill in **one** circle only*

Less than 5% ○
5 to 10% ○
11 to 20% ○
More than 20% ○

6

A. Approximately what percentage of students in your school have the following backgrounds?

*Fill in **one** circle for each row*

	More than 50%	26 to 50%	11 to 25%	0 to 10%
a) Come from economically disadvantaged homes	○	○	○	○
b) Come from economically affluent homes	○	○	○	○

B. Approximately what percentage of students in your school have <language of test> as their native language?

*Fill in **one** circle only*

More than 90% ○
76 to 90% ○
50 to 75% ○
Less than 50% ○

7

How would you characterize each of the following within your school?

*Fill in **one** circle for each row*

	Very low	Low	Medium	High	Very high
a) Teachers' job satisfaction	○	○	○	○	○
b) Teachers' understanding of the school's curricular goals	○	○	○	○	○
c) Teachers' degree of success in implementing the school's curriculum	○	○	○	○	○
d) Teachers' expectations for student achievement	○	○	○	○	○
e) Parental support for student achievement	○	○	○	○	○
f) Parental involvement in school activities	○	○	○	○	○
g) Students' regard for school property	○	○	○	○	○
h) Students' desire to do well in school	○	○	○	○	○

Your Role as Principal

8

Including this year, how long have you been principal of this school?

*Number of years:*_____

9

By the end of this school year, approximately what percentage of time in your role as principal will you have spent on these activities?

Write in the percent
The total should add to 100%

a) Administrative duties (e.g., hiring, budgeting, scheduling) ---------- _____%

b) Instructional leadership (e.g., developing curriculum and pedagogy) ---------- _____%

c) Supervising and evaluating teachers and other staff ---------- _____%

d) Teaching ---------- _____%

e) Public relations and fundraising -- _____%

f) Other ---------- _____%

Total ---------- 100%

Parental Involvement

10

Does your school expect parents to do the following?

*Fill in **one** circle for each row*

		No	Yes
a)	Attend special events (e.g., science fair, concert, sporting events)	○	○
b)	Raise funds for the school	○	○
c)	Volunteer for school projects, programs, and trips	○	○
d)	Ensure that their child completes his/her homework	○	○
e)	Serve on school committees (e.g., select school personnel, review school finances)	○	○

<Fourth-grade> Instruction in Mathematics and Science

11

A. How many days per year is your school open for instruction for <fourth-grade> students?

Number of days: _____

B. How many instructional days are there in the school week (typical calendar week from Monday through Sunday) for <fourth-grade> students?

*Fill in **one** circle for each column*

	Number of FULL days (over 4 hours)	Number of HALF days (4 hours or less)
1 day	○	○
2 days	○	○
3 days	○	○
4 days	○	○
5 days	○	○
6 days	○	○
None	○	○

C. To the nearest half-hour, what is the total instructional time in a typical full day (excluding lunch breaks, study hall, and after school activities) for <fourth-grade> students?

*Fill in **one** circle only*

- 4 hours or less ○
- 4.5 hours ○
- 5 hours ○
- 5.5 hours ○
- 6 hours ○
- 6.5 hours or more ○

12

How does your school organize mathematics instruction for <fourth-grade> students with different levels of ability?

*Fill in **one** circle only*

- Students study the same mathematics curriculum ○
- Students study the same mathematics curriculum, but at different levels of difficulty ○
- Students study different mathematics curricula according to their ability levels ○

13

Are <fourth-grade> students in your school grouped by ability within their mathematics lessons?

*Fill in **one** circle only* ○ No ○ Yes

14

Does your school do any of the following for students in the <fourth grade>?

*Fill in **one** circle for each row*

	No	Yes
a) Offer enrichment mathematics	○	○
b) Offer remedial mathematics	○	○

<Fourth-grade> Teachers in Your School

15

How does your school organize science instruction for <fourth-grade> students with different levels of ability?

*Fill in **one** circle only*

Students study the same science curriculum ○

Students study the same science curriculum, but at different levels of difficulty ○

Students study different science curricula according to their ability levels ○

16

Are <fourth-grade> students in your school grouped by ability within their science lessons?

	No	Yes
*Fill in **one** circle only*	○	○

17

Does your school do any of the following for students in the <fourth grade>?

*Fill in **one** circle for each row*

		No	Yes
a)	Offer enrichment science	○	○
b)	Offer remedial science	○	○

18

How difficult was it to fill <fourth-grade> teaching vacancies for this school year?

*Fill in **one** circle only*

Were no vacancies ○

Easy to fill vacancies ○

Somewhat difficult ○

Very difficult ○

19

Does your school currently use any incentives (e.g., pay, housing, signing bonus) to recruit or retain <fourth-grade> teachers?

	No	Yes
*Fill in **one** circle only*	○	○

20

During this school year, how often have your <fourth-grade> teachers been involved in professional development opportunities for mathematics and science targeted at the following?

*Fill in **one** circle for each row*

	Never	1 to 2 times	3 to 5 times	6 to 10 times	More than 10 times
a) Supporting the implementation of the national or regional curriculum	○	○	○	○	○
b) Designing or supporting the school's own improvement goals	○	○	○	○	○
c) Improving content knowledge	○	○	○	○	○
d) Improving teaching skills	○	○	○	○	○
e) Using information and communication technology for educational purposes	○	○	○	○	○

21

In your school, are any of the following used to evaluate the practice of <fourth-grade> teachers?

*Fill in **one** circle for each row*

	Yes	No
a) Observations by the principal or senior staff	○	○
b) Observations by inspectors or other persons external to the school	○	○
c) Student achievement	○	○
d) Teacher peer review	○	○

Student Behavior

22

How often does each of the following problem behaviors occur among <fourth-grade> students in your school?

If the behavior occurs, how severe a problem does it present?

A. Frequency in your school

*Fill in **one** circle for each row in this section*

B. Severity of problem in your school

*Fill in **one** circle for each row in this section*

		Never	Rarely	Monthly	Weekly	Daily	Not a problem	Minor problem	Serious problem
a)	Arriving late at school	○	○	○	○	○	○	○	○
b)	Absenteeism (i.e., unjustified absences)	○	○	○	○	○	○	○	○
c)	Skipping class <hours/periods>	○	○	○	○	○	○	○	○
d)	Violating dress code	○	○	○	○	○	○	○	○
e)	Classroom disturbance	○	○	○	○	○	○	○	○
f)	Cheating	○	○	○	○	○	○	○	○
g)	Profanity	○	○	○	○	○	○	○	○
h)	Vandalism	○	○	○	○	○	○	○	○
i)	Theft	○	○	○	○	○	○	○	○
j)	Intimidation or verbal abuse of other students	○	○	○	○	○	○	○	○
k)	Physical injury to other students	○	○	○	○	○	○	○	○
l)	Intimidation or verbal abuse of teachers or staff	○	○	○	○	○	○	○	○
m)	Physical injury to teachers or staff	○	○	○	○	○	○	○	○

23

Is your school's capacity to provide instruction affected by a shortage or inadequacy of any of the following?

*Fill in **one** circle for each row*

	None	A little	Some	A lot
a) Instructional materials (e.g., textbook)	○	○	○	○
b) Budget for supplies (e.g., paper, pencils)	○	○	○	○
c) School buildings and grounds	○	○	○	○
d) Heating/cooling and lighting systems	○	○	○	○
e) Instructional space (e.g., classrooms)	○	○	○	○
f) Special equipment for handicapped students	○	○	○	○
g) Computers for mathematics instruction	○	○	○	○
h) Computer software for mathematics instruction	○	○	○	○
i) Calculators for mathematics instruction	○	○	○	○
j) Library materials relevant to mathematics instruction	○	○	○	○
k) Audio-visual resources for mathematics instruction	○	○	○	○

*Fill in **one** circle for each row*

	None	A little	Some	A lot
l) Science laboratory equipment and materials	○	○	○	○
m) Computers for science instruction	○	○	○	○
n) Computer software for science instruction	○	○	○	○
o) Calculators for science instruction	○	○	○	○
p) Library materials relevant to science instruction	○	○	○	○
q) Audio-visual resources for science instruction	○	○	○	○
r) Teachers	○	○	○	○
s) Computer support staff	○	○	○	○

24

A. What is the total number of computers in your school that can be used for educational purposes by <fourth-grade> students?

*Number of computers:*_____

*If **None,** please go to question* **25**

B. How many of these computers have access to the Internet (e-mail or World Wide Web) for educational purposes?

*Fill in **one** circle only*

All ---------- ○

Most ---------- ○

Some ---------- ○

None ---------- ○

25

A. Is anyone available to help your teachers use information and communication technology for teaching and learning?

No

Yes

*Fill in **one** circle only* ---------- ○ --- ○

*If **No**, you have completed the questionnaire*

B. Which of the following statements best describes the person at this school who helps teachers use information and communication technology for teaching and learning?

*Fill in **one** circle for the best description of that person. If more than one person, choose the one person who spends the most time on this work.*

A full-time school level coordinator (who has no other job responsibility) ---------- ○

A library media specialist who also serves as computer coordinator ---------- ○

A teacher who also has the title of this type of coordinator ---------- ○

A teacher who provides leadership informally to other teachers ---------- ○

A district-level coordinator ---------- ○

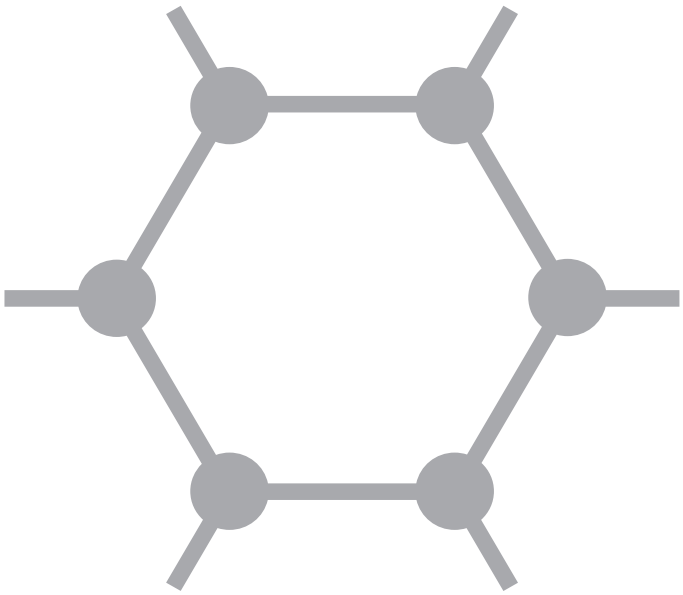
The principal or another school administrator ------ ○

Other person ---------- ○

Thank You

for completing this questionnaire

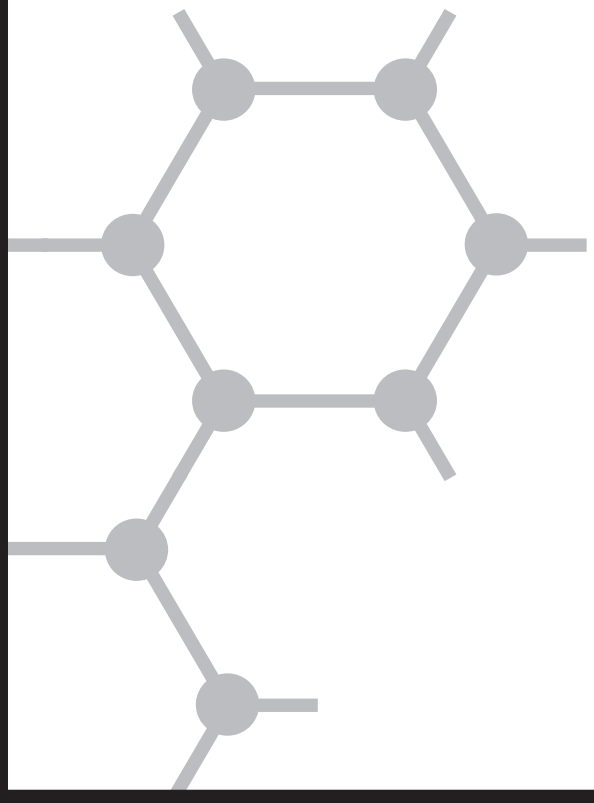
TIMSS International Study Center
Boston College
Chestnut Hill, MA 02467



IEA Trends in International Mathematics and Science Study

TIMSS 2003

Main Survey



Curriculum Questionnaire

Mathematics
<Grade 8>

General Directions

This questionnaire is addressed to National Research Coordinators, who are asked to supply information about their nation's intended curriculum in mathematics. This will help provide background information for interpretation of the school and achievement data collected in other parts of the TIMSS 2003 study. Your responses are very important in helping to provide a better understanding of the study results.

We ask that you or your nominee complete this questionnaire, working with others as necessary (e.g., curriculum supervisors of mathematics representative of those at the <grade 8> level in your country). It is important that you answer each question carefully and provide additional information where requested so that as accurate a picture as possible of your country's curriculum is presented in the final reports.

Your cooperation in completing this questionnaire is greatly appreciated

Contact Information

Country: _____

Name of Individual Completing Report: _____

Position of Individual Completing Report: _____

Address: _____

_____

Email: _____

Phone: _____

Fax: _____

Others (and positions) involved in providing information in completing questionnaire:

_____

_____

_____

_____

National Curriculum

IMPORTANT: Throughout this questionnaire, the term "national curriculum" is intended to include any centrally-supported curriculum. The curriculum need not be mandated but it should be strongly recommended or at least widely used. This curriculum may not necessarily be articulated in a formal document, or different aspects of the curriculum may appear in different documents.

1

A. Does your country have a national curriculum that includes mathematics at <grade 8>?

*Fill in **one** circle only*

Yes ---------- ○

No ---------- ○

***Note:** If **No**, please complete the remainder of the questionnaire based on your best informed judgment of the intended mathematics curriculum for the majority of <grade 8> students in your country. If it is impossible to answer a particular question, just make a note and move to the next question.*

B. If there is not a national curriculum, what is the highest level of decision-making authority that provides a curriculum for <grade 8> mathematics?

_____

_____

C. In what year was the current intended mathematics curriculum for <grade 8> introduced?

_____

D. Is the intended mathematics curriculum that includes <grade 8> currently being revised?

*Fill in **one** circle only*

Yes ---------- ○

No ---------- ○

2

A. Does an education authority in your country administer examinations in mathematics that have consequences for individual students, such as determining grade promotion, entry to a higher school system, entry to university, and/or high school graduation?

*Fill in **one** circle only*

Yes ---------- ○

No ---------- ○

*If **No**, please go to question **3***

B. If YES, please describe the authority which administers them (e.g., National Ministry of Education), and list the examinations and the grades at which they are given.

_____

_____

_____

_____

3

Are any of the following methods used to support and monitor the implementation of the national mathematics curriculum at <grade 8>?

*Fill in **one** circle for each row*

		Yes	No
a)	Pre-service teacher education	○	○
b)	Professional development or in-service teacher education	○	○
c)	Mandated or recommended textbook(s)	○	○
d)	Instructional or pedagogical guide	○	○
e)	Ministry notes and directives	○	○
f)	Curriculum evaluation during or after implementation	○	○
g)	Specifically developed or recommended instructional activities	○	○
h)	National assessments based on student samples	○	○
i)	A system of school inspection or audit	○	○
j)	Other	○	○

(Please specify:_____)

4

Does the national curriculum specify the amount of instructional time that should be devoted to mathematics?

*Fill in **one** circle for each row*

		Yes	No
a)	at <grade 4>	○	○
	If **Yes**, what percentage of total instructional time is supposed to be devoted to mathematics? _____		
b)	at <grade 6>	○	○
	If **Yes**, what percentage of total instructional time is supposed to be devoted to mathematics? _____		
c)	at <grade 8>	○	○
	If **Yes**, what percentage of total instructional time is supposed to be devoted to mathematics? _____		

Pedagogical Approach

5

A. Does the national mathematics curriculum at <grade 8> address the issue of students with different levels of ability?

	No	Yes
*Fill in **one** circle only*	○	○

*If **No**, please go to question* **6**

B. If YES, how does the national mathematics curriculum at <grade 8> address the issue of students with different levels of ability?

*Fill in **one** circle for each row*

		No	Yes
a)	The same curriculum is prescribed for all students, with teachers adapting it to the needs of their students	○	○
b)	The same curriculum is prescribed for students of different ability levels, but at different levels of difficulty	○	○
c)	Different curricula are prescribed for students of different ability levels	○	○

6

How much emphasis does the national mathematics curriculum at <grade 8> place on the following?

*Fill in **one** circle for each row*

		A lot	Some	Very little	None
a)	Mastering basic skills	○	○	○	○
b)	Understanding mathematical concepts and principles	○	○	○	○
c)	Applying mathematics in real-life contexts	○	○	○	○
d)	Communicating mathematically	○	○	○	○
e)	Reasoning mathematically	○	○	○	○
f)	Using a multicultural approach	○	○	○	○
g)	Integrating mathematics with other subjects	○	○	○	○
h)	Deriving formal proofs	○	○	○	○

Calculators and Computers

7

A. Does the national curriculum contain statements/policies about the use of calculators in <grade 8> mathematics?

	No	Yes
*Fill in **one** circle only*	○	○

*If **No**, please go to question* **8**

B. If YES, what are the statements/policies?

_____

_____

_____

_____

8

A. Does the national curriculum contain statements/policies about the use of computers in <grade 8> mathematics?

	No	Yes
*Fill in **one** circle only*	○	○

*If **No**, please go to question* **9**

B. If YES, what are the statements/policies?

_____

_____

_____

_____

Teacher Education and Certification

9

A. Do <grade 8> mathematics teachers receive specific preparation in how to teach the intended mathematics curriculum at <grade 8>?

*Fill in **one** circle for each row*

		No	Yes
a)	As part of pre-service education	○	○
b)	As part of in-service education	○	○

B. If you answered YES to either (a) or (b), describe the nature of the preparation.

_____

_____

_____

_____

10

A. Who certifies/licenses teachers?

*Fill in **one** circle for each row*

		No	Yes
a)	Minister/Ministry of Education	○	○
b)	National/state licensing board	○	○
c)	Universities/colleges	○	○
d)	Teacher organization/union	○	○

B. What are the current requirements for a <full/permanent> certificate?

*Fill in **one** circle for each row*

		No	Yes
a)	Pre-practicum and supervised practicum in the field	○	○
b)	Licensing examination	○	○
c)	<ISCED 5A, first degree>	○	○
d)	Completion of a probationary teaching period	○	○
	If **Yes**, how long is this period?_____		
e)	Completion of an induction program	○	○
f)	Other	○	○
	(Please specify:_____)		

11

According to the national mathematics curriculum, what proportion of <grade 8> students should have been taught each of the following topics or skills by the end of <grade 8>?

Across grades K-12, what grade(s) are the topics primarily intended to be taught?

Be sure to include curriculum expectations for all grades up to and including <grade 8>. If there are not any specifications to this detail, please indicate national expectations to the best of your ability.

If part of a topic does not apply (e.g., factorization in topic (a) below), please cross out that part and answer for the major part of the topic.

		Proportion of <grade 8> students intended to be taught topic *Fill in **one** circle for each row* Not included in the curriculum through <grade 8> | Only the more able students (top track) | All or almost all students	Grade(s) topic is intended to be taught K-12
A. Number			
a)	Whole numbers including place value, factorization, and the four operations	○ ○ ○	_____
b)	Computations, estimations, or approximations involving whole numbers	○ ○ ○	_____
c)	Common fractions including equivalent fractions, and ordering of fractions	○ ○ ○	_____
d)	Decimal fractions including place value, ordering, rounding, and converting to common fractions (and vice versa)	○ ○ ○	_____
e)	Representing decimals and fractions using words, numbers, or models (including number lines)	○ ○ ○	_____
f)	Computations with fractions	○ ○ ○	_____
g)	Computations with decimals	○ ○ ○	_____
h)	Integers including words, numbers, or models (including number lines), ordering integers, addition, subtraction, multiplication, and division with integers	○ ○ ○	_____
i)	Ratios (equivalence, division of a quantity by a given ratio)	○ ○ ○	_____
j)	Conversion of percents to fractions or decimals, and vice versa	○ ○ ○	_____
B. Algebra			
a)	Numeric, algebraic, and geometric patterns or sequences (extension, missing terms, generalization of patterns)	○ ○ ○	_____
b)	Sums, products, and powers of expressions containing variables	○ ○ ○	_____
c)	Simple linear equations and inequalities, and simultaneous (two variables) equations	○ ○ ○	_____
d)	Equivalent representations of functions as ordered pairs, tables, graphs, words, or equations	○ ○ ○	_____
e)	Proportional, linear, and nonlinear relationships (travel graphs and simple piecewise functions included)	○ ○ ○	_____
f)	Attributes of a graph such as intercepts on axes, and intervals where the function increases, decreases, or is constant	○ ○ ○	_____

11 continued

	Proportion of <grade 8> students intended to be taught topic	Grade(s) topic is intended to be taught K-12
	*Fill in **one** circle for each row*	
	Not included in the curriculum through <grade 8>	
	Only the more able students (top track)	
	All or almost all students	
C. Measurement		
a) Standard units for measures of length, area, volume, perimeter, circumference, time, speed, density, angle, mass/weight	○ ○ ○	_____
b) Relationships among units for conversions within systems of units, and for rates	○ ○ ○	_____
c) Use standard tools to measure length, weight, time, speed, angle, and temperature	○ ○ ○	_____
d) Estimations of length, circumference, area, volume, weight, time, angle, and speed in problem situations (e.g., circumference of a wheel, speed of a runner)	○ ○ ○	_____
e) Computations with measurements in problem situations (e.g., add measures, find average speed on a trip, find population density)	○ ○ ○	_____
f) Measurement formulas for perimeter of a rectangle, circumference of a circle, areas of plane figures (including circles), surface area and volume of rectangular solids, and rates	○ ○ ○	_____
g) Measures of irregular or compound areas (e.g., by using grids or dissecting and rearranging pieces)	○ ○ ○	_____
h) Precision of measurements (e.g., upper and lower bounds of a length reported as 8 centimeters to the nearest centimeter)	○ ○ ○	_____

11 continued

According to the national mathematics curriculum, what proportion of <grade 8> students should have been taught each of the following topics or skills by the end of <grade 8>?

Across grades K-12, what grade(s) are the topics primarily intended to be taught?

Be sure to include curriculum expectations for all grades up to and including <grade 8>. If there are not any specifications to this detail, please indicate national expectations to the best of your ability.

If part of a topic does not apply (e.g., factorization in topic (a) below), please cross out that part and answer for the major part of the topic.

		Proportion of <grade 8> students intended to be taught topic *Fill in **one** circle for each row* Not included in the curriculum through <grade 8> | Only the more able students (top track) | All or almost all students	Grade(s) topic is intended to be taught K-12
D. Geometry			
a)	Angles - acute, right, straight, obtuse, reflex, complementary, and supplementary	○ ○ ○	_____
b)	Relationships for angles at a point, angles on a line, vertically opposite angles, angles associated with a transversal cutting parallel lines, and perpendicularity	○ ○ ○	_____
c)	Properties of angle bisectors and perpendicular bisectors of lines	○ ○ ○	_____
d)	Properties of geometric shapes: triangles and quadrilaterals	○ ○ ○	_____
e)	Properties of other polygons (regular pentagon, hexagon, octagon, decagon)	○ ○ ○	_____
f)	Construct or draw triangles and rectangles of given dimensions	○ ○ ○	_____
g)	Pythagorean theorem (not proof) to find length of a side	○ ○ ○	_____
h)	Congruent figures (triangles, quadrilaterals) and their corresponding measures	○ ○ ○	_____
i)	Similar triangles and recall their properties	○ ○ ○	_____
j)	Cartesian plane - ordered pairs, equations, intercepts, intersections, and gradient	○ ○ ○	_____
k)	Relationships between two-dimensional and three-dimensional shapes	○ ○ ○	_____
l)	Line and rotational symmetry for two-dimensional shapes	○ ○ ○	_____
m)	Translation, reflection, rotation, and enlargement	○ ○ ○	_____

11 continued

	Proportion of <grade 8> students intended to be taught topic	Grade(s) topic is intended to be taught K-12
	*Fill in **one** circle for each row*	
	Not included in the curriculum through <grade 8>	
	Only the more able students (top track)	
	All or almost all students	
E. Data		
a) Organizing a set of data by one or more characteristics using a tally chart, table, or graph	○ ○ ○	_____
b) Sources of error in collecting and organizing data (e.g., bias, inappropriate grouping)	○ ○ ○	_____
c) Data collection methods (e.g., survey, experiment, questionnaire)	○ ○ ○	_____
d) Drawing and interpreting graphs, tables, pictographs, bar graphs, pie charts, and line graphs	○ ○ ○	_____
e) Characteristics of data sets including mean, median, range, and shape of distribution (in general terms)	○ ○ ○	_____
f) Interpreting data sets (e.g., draw conclusions, make predictions, and estimate values between and beyond given data points)	○ ○ ○	_____
g) Evaluating interpretations of data with respect to correctness and completeness of interpretation	○ ○ ○	_____
h) Simple probability including using data from experiments to estimate probabilities for favorable outcomes	○ ○ ○	_____

Thank You for completing this questionnaire

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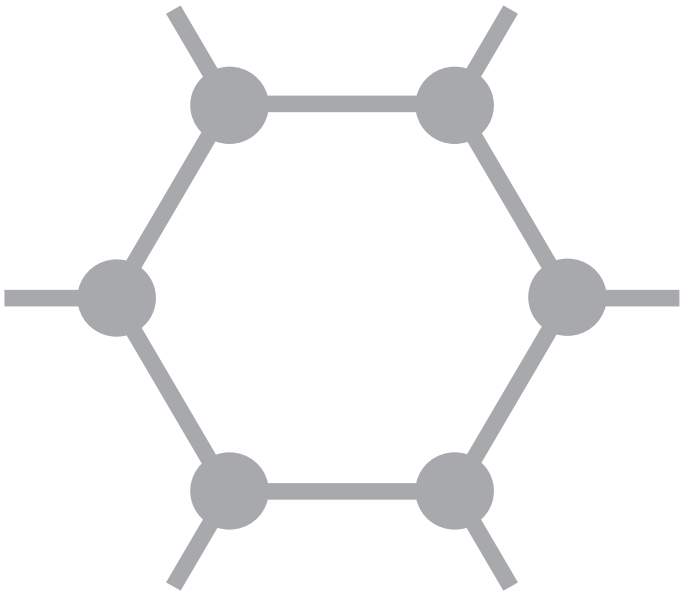
Chestnut Hill, MA 02467



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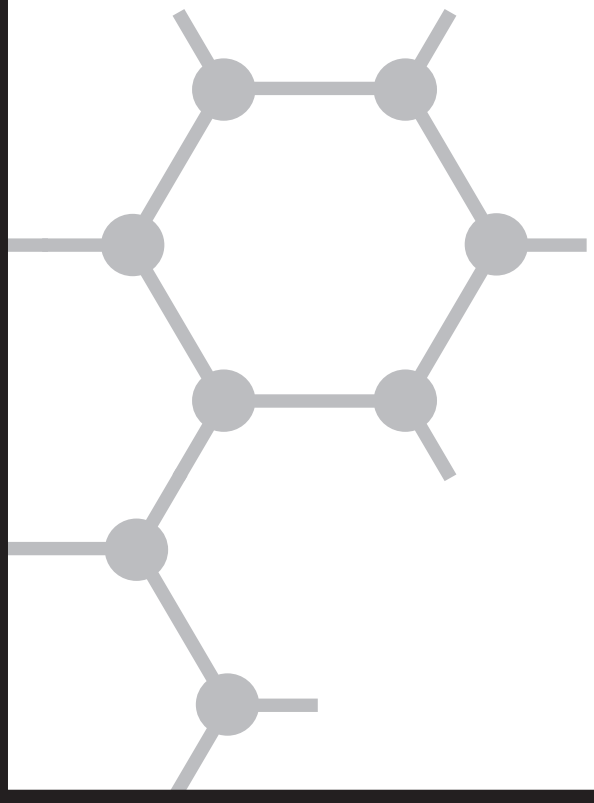

Curriculum Questionnaire

Mathematics
<Grade 4>

General Directions

This questionnaire is addressed to National Research Coordinators, who are asked to supply information about their nation's intended curriculum in mathematics. This will help provide background information for interpretation of the school and achievement data collected in other parts of the TIMSS 2003 study. Your responses are very important in helping to provide a better understanding of the study results.

We ask that you or your nominee complete this questionnaire, working with others as necessary (e.g., curriculum supervisors of mathematics representative of those at the <grade 4> level in your country). It is important that you answer each question carefully and provide additional information where requested so that as accurate a picture as possible of your country's curriculum is presented in the final reports.

Your cooperation in completing this questionnaire is greatly appreciated

Contact Information

Country: _____

Name of Individual Completing Report: _____

Position of Individual Completing Report: _____

Address: _____

_____

Email: _____

Phone: _____

Fax: _____

Others (and positions) involved in providing information in completing questionnaire:

_____

_____

_____

_____

National Curriculum

IMPORTANT: Throughout this questionnaire, the term "national curriculum" is intended to include any centrally-supported curriculum. The curriculum need not be mandated but it should be strongly recommended or at least widely used. This curriculum may not necessarily be articulated in a formal document, or different aspects of the curriculum may appear in different documents.

1

A. Does your country have a national curriculum that includes mathematics at <grade 4>?

*Fill in **one** circle only*

Yes ---------- ○

No ---------- ○

***Note:** If **No**, please complete the remainder of the questionnaire based on your best informed judgment of the intended mathematics curriculum for the majority of <grade 4> students in your country. If it is impossible to answer a particular question, just make a note and move to the next question.*

B. If there is not a national curriculum, what is the highest level of decision-making authority that provides a curriculum for <grade 4> mathematics?

_____

_____

C. In what year was the current intended mathematics curriculum for <grade 4> introduced?

_____

D. Is the intended mathematics curriculum that includes <grade 4> currently being revised?

*Fill in **one** circle only*

Yes ---------- ○

No ---------- ○

2

A. Does an education authority in your country administer examinations in mathematics that have consequences for individual students, such as determining grade promotion, entry to a higher school system, entry to university, and/or high school graduation?

*Fill in **one** circle only*

Yes ---------- ○

No ---------- ○

*If **No**, please go to question **3***

B. If YES, please describe the authority which administers them (e.g., National Ministry of Education), and list the examinations and the grades at which they are given.

_____

_____

_____

_____

3

Are any of the following methods used to support and monitor the implementation of the national mathematics curriculum at <grade 4>?

*Fill in **one** circle for each row*

		Yes	No
a)	Pre-service teacher education	○	○
b)	Professional development or in-service teacher education	○	○
c)	Mandated or recommended textbook(s)	○	○
d)	Instructional or pedagogical guide	○	○
e)	Ministry notes and directives	○	○
f)	Curriculum evaluation during or after implementation	○	○
g)	Specifically developed or recommended instructional activities	○	○
h)	National assessments based on student samples	○	○
i)	A system of school inspection or audit	○	○
j)	Other	○	○

(Please specify:_____)

4

Does the national curriculum specify the amount of instructional time that should be devoted to mathematics?

*Fill in **one** circle for each row*

		Yes	No
a)	at <grade 2>	○	○

If **Yes**, what percentage of total instructional time is supposed to be devoted to mathematics? _____

		Yes	No
b)	at <grade 4>	○	○

If **Yes**, what percentage of total instructional time is supposed to be devoted to mathematics? _____

Pedagogical Approach

5

A. Does the national mathematics curriculum at <grade 4> address the issue of students with different levels of ability?

	No	Yes
*Fill in **one** circle only*	○	○

*If **No**, please go to question* **6**

B. If YES, how does the national mathematics curriculum at <grade 4> address the issue of students with different levels of ability?

*Fill in **one** circle for each row*

	No	Yes
a) The same curriculum is prescribed for all students, with teachers adapting it to the needs of their students	○	○
b) The same curriculum is prescribed for students of different ability levels, but at different levels of difficulty	○	○
c) Different curricula are prescribed for students of different ability levels	○	○

6

How much emphasis does the national mathematics curriculum at <grade 4> place on the following?

*Fill in **one** circle for each row*

	A lot	Some	Very little	None
a) Mastering basic skills	○	○	○	○
b) Understanding mathematical concepts and principles	○	○	○	○
c) Applying mathematics in real-life contexts	○	○	○	○
d) Communicating mathematically	○	○	○	○
e) Reasoning mathematically	○	○	○	○
f) Using a multicultural approach	○	○	○	○
g) Integrating mathematics with other subjects	○	○	○	○

Calculators and Computers

7

A. Does the national curriculum contain statements/policies about the use of calculators in <grade 4> mathematics?

	No	Yes
*Fill in **one** circle only*	○	○

*If **No**, please go to question* **8**

B. If YES, what are the statements/policies?

_____

_____

_____

_____

8

A. Does the national curriculum contain statements/policies about the use of computers in <grade 4> mathematics?

	No	Yes
*Fill in **one** circle only*	○	○

*If **No**, please go to question* **9**

B. If YES, what are the statements/policies?

_____

_____

_____

_____

Teacher Education and Certification

9

A. Do <grade 4> mathematics teachers receive specific preparation in how to teach the intended mathematics curriculum at <grade 4>?

*Fill in **one** circle for each row*

		No	Yes
a)	As part of pre-service education	○	○
b)	As part of in-service education	○	○

B. If you answered YES to either (a) or (b), describe the nature of the preparation.

_____

_____

_____

_____

10

A. Who certifies/licenses teachers?

*Fill in **one** circle for each row*

		No	Yes
a)	Minister/Ministry of Education	○	○
b)	National/state licensing board	○	○
c)	Universities/colleges	○	○
d)	Teacher organization/union	○	○

B. What are the current requirements for a <full/permanent> certificate?

*Fill in **one** circle for each row*

		No	Yes
a)	Pre-practicum and supervised practicum in the field	○	○
b)	Licensing examination	○	○
c)	<ISCED 5A, first degree>	○	○
d)	Completion of a probationary teaching period	○	○
	If **Yes**, how long is this period?_____		
e)	Completion of an induction program	○	○
f)	Other	○	○
	(Please specify:_____)		

Grade 4 Mathematics Topics

11

According to the national mathematics curriculum, what proportion of <grade 4> students should have been taught each of the following topics or skills by the end of <grade 4>?

Across grades K-12, what grade(s) are the topics primarily intended to be taught?

Be sure to include curriculum expectations for all grades up to and including <grade 4>. If there are not any specifications to this detail, please indicate national expectations to the best of your ability.

If part of a topic does not apply (e.g., factorization in topic (a) below), please cross out that part and answer for the major part of the topic.

		Proportion of <grade 4> students intended to be taught topic *Fill in **one** circle for each row* Not included in the curriculum through <grade 4> | Only the more able students | All or almost all students	Grade(s) topic is intended to be taught K-12
A. Number			
a)	Whole numbers including place value and ordering	○ ○ ○	_____
b)	Represent whole numbers using words, diagrams, or symbols	○ ○ ○	_____
c)	Properties of whole numbers such as odd and even, multiples, or factors	○ ○ ○	_____
d)	Computations with whole numbers	○ ○ ○	_____
e)	Estimation with whole numbers	○ ○ ○	_____
f)	Fractions (parts of a whole or a collection, location on a number line)	○ ○ ○	_____
g)	Equivalent fractions	○ ○ ○	_____
h)	Compare and order fractions	○ ○ ○	_____
i)	Fractions or decimals represented by words, numbers, or models	○ ○ ○	_____
j)	Adding and subtracting fractions with the same denominator	○ ○ ○	_____
k)	Adding and subtracting with decimals (tenths and/or hundredths)	○ ○ ○	_____
l)	Simple proportional reasoning	○ ○ ○	_____
B. Patterns, Equations, and Relationships			
a)	Number patterns including extending sequences and finding missing terms of numeric and geometric patterns	○ ○ ○	_____
b)	Equality using equations, areas, volumes, masses/weights	○ ○ ○	_____
c)	Missing number in an equation (e.g., if 17 + __ = 29, what number would go in the blank to make the equation true?)	○ ○ ○	_____
d)	Modeling simple situations involving unknowns with an equation	○ ○ ○	_____
e)	Pairs of numbers following a given rule (e.g., multiply the first number by 3 and add 2 to get the second number)	○ ○ ○	_____
f)	Finding a rule for a relationship given some pairs of numbers	○ ○ ○	_____

11 continued

		Proportion of <grade 4> students intended to be taught topic	Grade(s) topic is intended to be taught K-12
		*Fill in **one** circle for each row*	
		Not included in the curriculum through <grade 4> / Only the more able students / All or almost all students	
C. Measurement			
a)	Non-standard units to measure length, area, volume, and time (e.g., paper clips for length, tiles for area, sugar cubes for volume)	○ ○ ○	_____
b)	Standard units to measure length, area, mass/weight, angle, and time (e.g., kilometers for car trips, centimeters for human height)	○ ○ ○	_____
c)	Conversion factors between standard units (e.g., hours to minutes, grams to kilograms)	○ ○ ○	_____
d)	Instruments to measure length, weight, time, and temperature in problem situations (e.g., rulers and scales)	○ ○ ○	_____
e)	Calculating areas and perimeters of squares	○ ○ ○	_____
f)	Estimating length, area, volume, weight, and time	○ ○ ○	_____
D. Geometry			
a)	Angles greater than, equal to, or less than a right angle (or 90°)	○ ○ ○	_____
b)	Parallel and perpendicular lines	○ ○ ○	_____
c)	Familiar two- and three-dimensional shapes and their properties	○ ○ ○	_____
d)	Congruent triangles	○ ○ ○	_____
e)	Similar triangles	○ ○ ○	_____
f)	Points in a plane	○ ○ ○	_____
g)	Relationships between two-dimensional and three-dimensional shapes (nets)	○ ○ ○	_____
h)	Informal coordinate systems	○ ○ ○	_____
i)	Symmetry about a line	○ ○ ○	_____
j)	Two-dimensional symmetrical figures	○ ○ ○	_____
k)	Translation, reflection, and rotation	○ ○ ○	_____

11 continued

According to the national mathematics curriculum, what proportion of <grade 4> students should have been taught each of the following topics or skills by the end of <grade 4>?

Across grades K-12, what grade(s) are the topics primarily intended to be taught?

Be sure to include curriculum expectations for all grades up to and including <grade 4>. If there are not any specifications to this detail, please indicate national expectations to the best of your ability.

If part of a topic does not apply (e.g., factorization in topic (a) below), please cross out that part and answer for the major part of the topic.

		Proportion of <grade 4> students intended to be taught topic *Fill in **one** circle for each row* Not included in the curriculum through <grade 4> Only the more able students All or almost all students	Grade(s) topic is intended to be taught K-12
E. Data			
a)	Recognizing what various numbers, symbols and points mean in data displays	○ ○ ○	_____
b)	Organizing a set of data by one characteristic (e.g., height, color, age, shape)	○ ○ ○	_____
c)	Reading data directly from tables, pictographs, bar graphs, and pie charts	○ ○ ○	_____
d)	Displaying data using tables, pictographs, and bar graphs	○ ○ ○	_____
e)	Comparing and matching different representations of the same data	○ ○ ○	_____
f)	Characteristics of related data sets (e.g., given data or representations of data on student heights in two classes, identify the class with the shortest/tallest person)	○ ○ ○	_____
g)	Drawing conclusions from data displays	○ ○ ○	_____

Thank You

for completing this questionnaire

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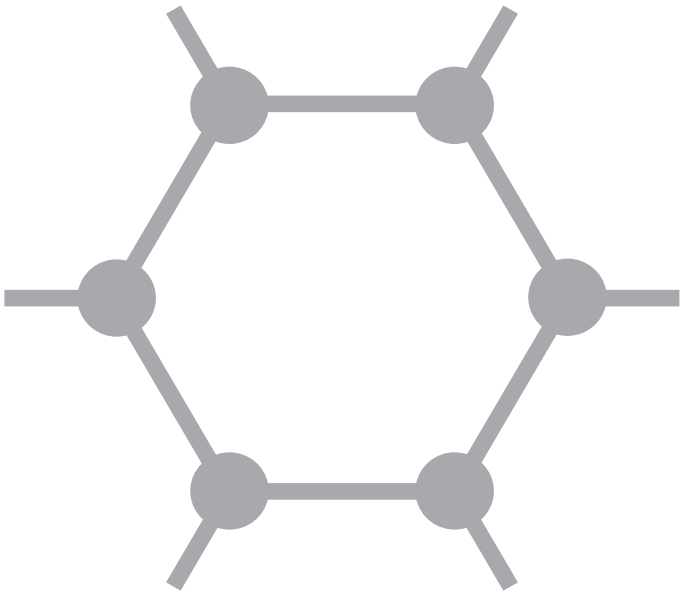

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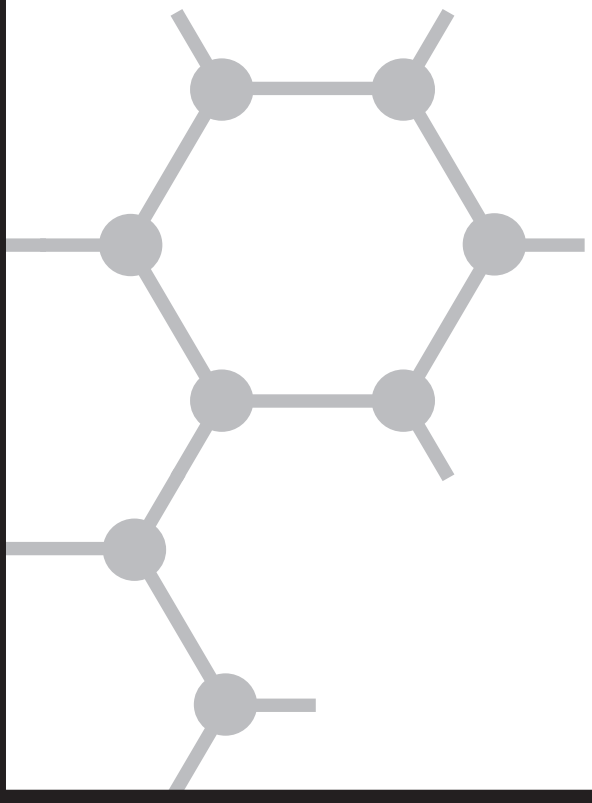

Curriculum Questionnaire

Science
<Grade 8>

General Directions

This questionnaire is addressed to National Research Coordinators, who are asked to supply information about their nation's intended curriculum in science. This will help provide background information for interpretation of the school and achievement data collected in other parts of the TIMSS 2003 study. Your responses are very important in helping to provide a better understanding of the study results.

We ask that you or your nominee complete this questionnaire, working with others as necessary (e.g., curriculum supervisors of science representative of those at the <grade 8> level in your country). It is important that you answer each question carefully and provide additional information where requested so that as accurate a picture as possible of your country's curriculum is presented in the final reports.

Your cooperation in completing this questionnaire is greatly appreciated

Contact Information

Country: _____

Name of Individual Completing Report: _____

Position of Individual Completing Report: _____

Address: _____

_____

Email: _____

Phone: _____

Fax: _____

Others (and positions) involved in providing information in completing questionnaire:

_____

_____

_____

_____

National Curriculum

IMPORTANT: Throughout this questionnaire, the term "national curriculum" is intended to include any centrally-supported curriculum. The curriculum need not be mandated but it should be strongly recommended or at least widely used. This curriculum may not necessarily be articulated in a formal document, or different aspects of the curriculum may appear in different documents.

1

A. Does your country have a national curriculum that includes science at <grade 8>?

*Fill in **one** circle only*

Yes ---------- ○

No ---------- ○

***Note**: If **No**, please complete the remainder of the questionnaire based on your best informed judgment of the intended science curriculum for the majority of <grade 8> students in your country. If it is impossible to answer a particular question, just make a note and move to the next question.*

B. If there is not a national curriculum, what is the highest level of decision-making authority that provides a curriculum for <grade 8> science?

_____

_____

C. In what year was the current intended science curriculum for <grade 8> introduced?

_____

D. Is the intended science curriculum that includes <grade 8> currently being revised?

*Fill in **one** circle only*

Yes ---------- ○

No ---------- ○

2

A. By <grade 8> are different science courses offered in separate subjects (e.g., biology, chemistry, physics, earth science)?

*Fill in **one** circle only*

Yes ---------- ○

No ---------- ○

*If **No,** please go to question* **31**

B. If YES, please list the science subjects taught as separate courses and all grades in which they are taught, up to and including <grade 8>.

Subjects	**Grades**
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

3

A. Does an education authority in your country administer examinations in science that have consequences for individual students, such as determining grade promotion, entry to a higher school system, entry to university, and/or high school graduation?

*Fill in **one** circle only*

Yes ---------- ○

No ---------- ○

*If **No**, please go to question* **4**

B. If YES, please describe the authority which administers them (e.g., National Ministry of Education), and list the examinations and the grades at which they are given.

If examinations in separate science subjects such as biology, earth science, chemistry and physics are given at different grades, please indicate this.

_____

_____

_____

_____

_____

_____

4

Are any of the following methods used to support and monitor the implementation of the national science curriculum at <grade 8>?

*Fill in **one** circle for each row*

		Yes	No
a)	Pre-service teacher education	○	○
b)	Professional development or in-service teacher education	○	○
c)	Mandated or recommended textbook(s)	○	○
d)	Instructional or pedagogical guide	○	○
e)	Ministry notes and directives	○	○
f)	Curriculum evaluation during or after implementation	○	○
g)	Specifically developed or recommended instructional activities	○	○
h)	National assessments based on student samples	○	○
i)	A system of school inspection or audit	○	○
j)	Other	○	○

(Please specify:_____)

5

Does the national curriculum specify the amount of instructional time that should be devoted to science?

*Fill in **one** circle for each row*

		Yes	No
a)	at <grade 4>	○	○
	If **Yes**, what percentage of total instructional time is supposed to be devoted to the science? _____		
b)	at <grade 6>	○	○
	If **Yes**, what percentage of total instructional time is supposed to be devoted to science? _____		
c)	at <grade 8>	○	○
	If **Yes**, what percentage of total instructional time is supposed to be devoted to science? _____		

If different science courses are offered in separate subjects at <grade 8>, please give the percentage of total instructional time that is supposed to be devoted to each science course at <grade 8>.

Subject	Percentage
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Pedagogical Approach

6

A. Does the national science curriculum at <grade 8> address the issue of students with different levels of ability?

	Yes	No
*Fill in **one** circle only*	○	○

*If **No**, please go to question **7***

B. If YES, how does the national science curriculum at <grade 8> address the issue of students with different levels of ability?

*Fill in **one** circle for each row*

		Yes	No
a)	The same curriculum is prescribed for all students, with teachers adapting it to the needs of their students	○	○
b)	The same curriculum is prescribed for students of different ability levels, but at different levels of difficulty	○	○
c)	Different curricula are prescribed for students of different ability levels	○	○

7

How much emphasis does the national science curriculum at <grade 8> place on the following?

*Fill in **one** circle for each row*

		None	Very little	Some	A lot
a)	Knowing basic science facts	○	○	○	○
b)	Understanding science concepts	○	○	○	○
c)	Writing explanations about what was observed and why it happened	○	○	○	○
d)	Formulating hypotheses or predictions to be tested	○	○	○	○
e)	Designing and planning experiments or investigations	○	○	○	○
f)	Conducting experiments or investigations	○	○	○	○
g)	Learning about the nature of science and inquiry	○	○	○	○
h)	Integrating science with other subjects	○	○	○	○
i)	Learning about technology and its impact on society	○	○	○	○
j)	Understanding human impact on the environment	○	○	○	○
k)	Using a multicultural approach	○	○	○	○

8

A. Does the national science curriculum contain statements/policies about the emphasis that should be placed on scientific inquiry in <grade 8> science?

	No	Yes
*Fill in **one** circle only*	○	○

*If **No,** please go to question* **9**

B. If YES, what are the statements/policies?

_____

_____

_____

_____

_____

_____

9

A. Does the national curriculum contain statements/policies about the use of computers in <grade 8> science?

	No	Yes
*Fill in **one** circle only*	○	○

*If **No,** please go to question* **10**

B. If YES, what are the statements/policies?

_____

_____

_____

_____

Teacher and Education Certification

10

A. Do <grade 8> science teachers receive specific preparation in how to teach the intended science curriculum at <grade 8>?

*Fill in **one** circle for each row*

		No	Yes
a)	As part of pre-service education	○	○
b)	As part of in-service education	○	○

B. If you answered YES to either (a) or (b), describe the nature of the preparation.

_____

_____

_____

_____

11

A. Who certifies/licenses teachers?

*Fill in **one** circle for each row*

		No	Yes
a)	Minister/Ministry of Education	○	○
b)	National/state licensing board	○	○
c)	Universities/colleges	○	○
d)	Teacher organization/union	○	○

B. What are the current requirements for a <full/permanent> certificate?

*Fill in **one** circle for each row*

		No	Yes
a)	Pre-practicum and supervised practicum in the field	○	○
b)	Licensing examination	○	○
c)	<ISCED 5A, first degree>	○	○
d)	Completion of a probationary teaching period	○	○
	If **Yes**, how long is this period?_____		
e)	Completion of an induction program	○	○
f)	Other	○	○
	(Please specify:_____)		

12

According to the national science curriculum, what proportion of <grade 8> students should have been taught each of the following topics or skills by the end of <grade 8>?

Across grades K-12, what grade(s) are the topics primarily intended to be taught?

Be sure to include curriculum expectations for all grades up to and including <grade 8>. If there are not any specifications to this detail, please indicate national expectations to the best of your ability.

If part of a topic does not apply (e.g., heredity in topic (g) below), please cross out that part and answer for the major part of the topic.

		Proportion of <grade 8> students intended to be taught topic *Fill in **one** circle for each row* Not included in the curriculum through <grade 8> Only the more able students (top track) All or almost all students	Grade(s) topic is intended to be taught K-12
A. Biology			
a)	Classification of organisms on the basis of a variety of physical and behavioral characteristics	○ ○ ○	_____
b)	The major organ systems in humans and other organisms	○ ○ ○	_____
c)	How the systems function to maintain stable bodily conditions	○ ○ ○	_____
d)	Cell structures and functions	○ ○ ○	_____
e)	Photosynthesis and respiration as processes of cells and organisms, including substances used and produced	○ ○ ○	_____
f)	Life cycles of organisms, including humans, plants, birds, insects	○ ○ ○	_____
g)	Reproduction (sexual and asexual), and heredity (passing on of traits), inherited versus acquired/learned characteristics	○ ○ ○	_____
h)	The role of variation and adaptation in survival/extinction of species in a changing environment	○ ○ ○	_____
i)	The interaction of living organisms in an ecosystem (energy flow, food chains and food webs, food pyramids, and the effects of changes upon the system)	○ ○ ○	_____
j)	Cycling of materials in nature (water, carbon/oxygen cycle, decomposition of organisms)	○ ○ ○	_____
k)	Causes of common infectious diseases, methods of infection/transmission, prevention, and the body's natural resistance and healing capabilities	○ ○ ○	_____
l)	Preventive medicine methods (diet, hygiene, exercise and lifestyle)	○ ○ ○	_____

12 continued

	Proportion of <grade 8> students intended to be taught topic	Grade(s) topic is intended to be taught K-12
	*Fill in **one** circle for each row*	
	Not included in the curriculum through <grade 8>	
	Only the more able students (top track)	
	All or almost all students	
B. Chemistry		
a) Classification and composition of matter (physical and chemical characteristics, pure substances and mixtures, separation techniques)	○ ○ ○	_____
b) Properties of solutions (solvents, solutes, effects of temperature on solubility)	○ ○ ○	_____
c) Particulate structure of matter (molecules, atoms, protons, neutrons, and electrons)	○ ○ ○	_____
d) Properties and uses of water (composition, melting/boiling points, changes in density/volume)	○ ○ ○	_____
e) The properties and uses of common acids and bases	○ ○ ○	_____
f) Chemical change (transformation of reactants, evidence of chemical change, conservation of matter)	○ ○ ○	_____
g) The need for oxygen in common oxidation reactions (combustion, rusting) and the relative tendency of familiar substances to undergo these reactions	○ ○ ○	_____
h) Classification of familiar chemical transformations as releasing or absorbing heat/energy	○ ○ ○	_____

12 continued

According to the national science curriculum, what proportion of <grade 8> students should have been taught each of the following topics or skills by the end of <grade 8>?

Across grades K-12, what grade(s) are the topics primarily intended to be taught?

Be sure to include curriculum expectations for all grades up to and including <grade 8>. If there are not any specifications to this detail, please indicate national expectations to the best of your ability.

If part of a topic does not apply (e.g., heredity in topic (g) below), please cross out that part and answer for the major part of the topic.

		Proportion of <grade 8> students intended to be taught topic *Fill in **one** circle for each row* Not included in the curriculum through <grade 8> Only the more able students (top track) All or almost all students	Grade(s) topic is intended to be taught K-12
C. Physics			
a)	Physical states and changes in matter (explanations of properties including volume, shape, density and compressibility in terms of movement/distance between particles)	○ ○ ○	_____
b)	The processes of melting, freezing, evaporation, and condensation (phase change by supplying/removing heat; melting/boiling points; effects of pressure and purity of substances)	○ ○ ○	_____
c)	Energy types, sources, and conversions, including heat transfer	○ ○ ○	_____
d)	Thermal expansion and changes in volume and/or pressure	○ ○ ○	_____
e)	Basic properties/behavior of light (reflection, refraction, light and color, simple ray diagrams)	○ ○ ○	_____
f)	Properties of sound (production by vibration, transmission through media, ways of describing sound (intensity, pitch), relative speed)	○ ○ ○	_____
g)	Electric circuits (flow of current, types of circuits – open/closed, parallel/series) and relationship between voltage and current	○ ○ ○	_____
h)	Properties of permanent magnets and electromagnets	○ ○ ○	_____
i)	Forces and motion (types of forces, basic description of motion), use of distance/time graphs	○ ○ ○	_____
j)	Effects of density and pressure	○ ○ ○	_____

12 continued

	Proportion of <grade 8> students intended to be taught topic	Grade(s) topic is intended to be taught K-12
	*Fill in **one** circle for each row*	
	Not included in the curriculum through <grade 8>	
	Only the more able students (top track)	
	All or almost all students	
D. Earth Science		
a) Earth's structure and physical features (Earth's crust, mantle, and core; topographic maps)	○ ○ ○	_____
b) The physical state, movement, composition, and relative distribution of water on the Earth	○ ○ ○	_____
c) The Earth's atmosphere and the relative abundance of its main components	○ ○ ○	_____
d) Earth's water cycle (steps, role of sun's energy, circulation/renewal of fresh water)	○ ○ ○	_____
e) Processes in the rock cycle and the formation of igneous, metamorphic, and sedimentary rock	○ ○ ○	_____
f) Weather data/maps, and changes in weather patterns (e.g., seasonal changes, effects of latitude, altitude and geography)	○ ○ ○	_____
g) Geological processes occuring over billions of years (e.g., erosion, mountain building, plate movement)	○ ○ ○	_____
h) Formation of fossils and fossil fuels	○ ○ ○	_____
i) Explanation of phenomena on Earth based on position/movement of bodies in the solar sytem and universe (e.g., day/night, tides, year, phases of the moon, eclipses, seasons, appearance of sun, moon, planets, and constellations)	○ ○ ○	_____
j) The physical features of Earth compared with the moon and other planets (e.g., atmosphere, temperature, water, distance from sun, period of revolution/rotation, ability to support life)	○ ○ ○	_____
k) The sun as a star	○ ○ ○	_____

12 continued

According to the national science curriculum, what proportion of <grade 8> students should have been taught each of the following topics or skills by the end of <grade 8>?

Across grades K-12, what grade(s) are the topics primarily intended to be taught?

Be sure to include curriculum expectations for all grades up to and including <grade 8>. If there are not any specifications to this detail, please indicate national expectations to the best of your ability.

If part of a topic does not apply (e.g., heredity in topic (g) below), please cross out that part and answer for the major part of the topic.

	Proportion of <grade 8> students intended to be taught topic *Fill in **one** circle for each row* Not included in the curriculum through <grade 8> Only the more able students (top track) All or almost all students	Grade(s) topic is intended to be taught K-12
E. Environmental Science		
a) Trends in human population and its effects on the environment	○ ○ ○	_____
b) Use and conservation of natural resources (renewable/nonrenewable resources, human use of land/soil and water resources)	○ ○ ○	_____
c) Changes in environments (role of human activity, effects/prevention of pollution, global environmental concerns, impact of natural hazards)	○ ○ ○	_____

Thank You

for completing this questionnaire

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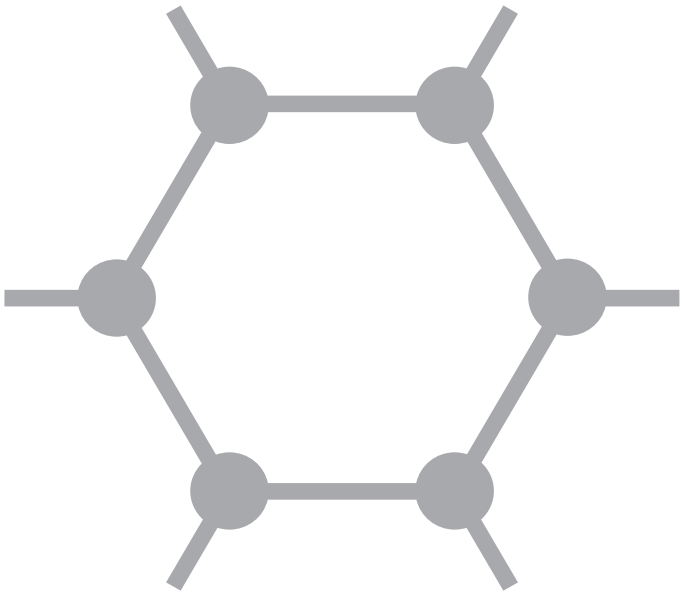
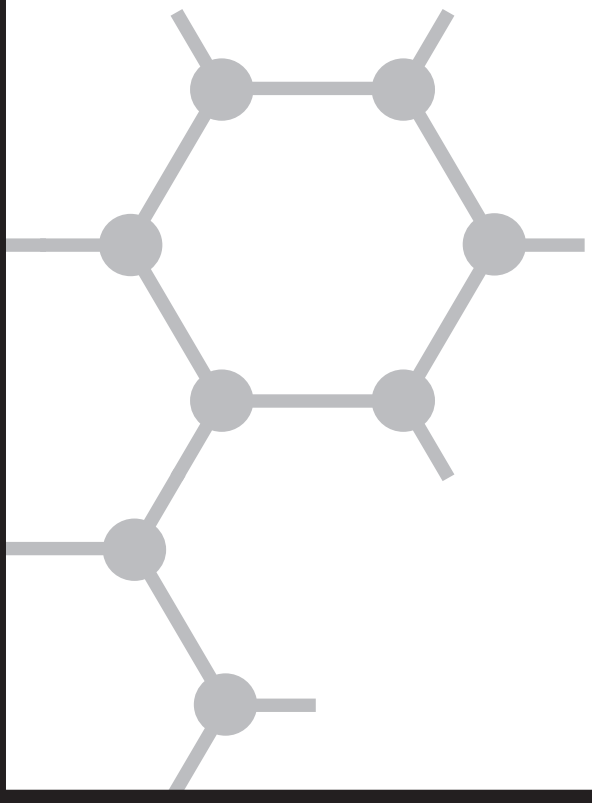


IEA Trends in International Mathematics and Science Study

TIMSS 2003

Main Survey



Curriculum Questionnaire

Science
<Grade 4>

General Directions

This questionnaire is addressed to National Research Coordinators, who are asked to supply information about their nation's intended curriculum in science. This will help provide background information for interpretation of the school and achievement data collected in other parts of the TIMSS 2003 study. Your responses are very important in helping to provide a better understanding of the study results.

We ask that you or your nominee complete this questionnaire, working with others as necessary (e.g., curriculum supervisors of science representative of those at the <grade 4> level in your country). It is important that you answer each question carefully and provide additional information where requested so that as accurate a picture as possible of your country's curriculum is presented in the final reports.

Your cooperation in completing this questionnaire is greatly appreciated

Contact Information

Country: _____

Name of Individual Completing Report: _____

Position of Individual Completing Report: _____

Address: _____

_____

Email: _____

Phone: _____

Fax: _____

Others (and positions) involved in providing information in completing questionnaire:

_____

_____

_____

_____

National Curriculum

IMPORTANT: Throughout this questionnaire, the term "national curriculum" is intended to include any centrally-supported curriculum. The curriculum need not be mandated but it should be strongly recommended or at least widely used. This curriculum may not necessarily be articulated in a formal document, or different aspects of the curriculum may appear in different documents.

1

A. Does your country have a national curriculum that includes science at <grade 4>?

*Fill in **one** circle only*

Yes ---------- ○

No ---------- ○

***Note**: If **No**, please complete the remainder of the questionnaire based on your best informed judgment of the intended science curriculum for the majority of <grade 4> students in your country. If it is impossible to answer a particular question, just make a note and move to the next question.*

B. If there is not a national curriculum, what is the highest level of decision-making authority that provides a curriculum for <grade 4> science?

_____

_____

C. In what year was the current intended science curriculum for <grade 4> introduced?

_____

D. Is the intended science curriculum that includes <grade 4> currently being revised?

*Fill in **one** circle only*

Yes ---------- ○

No ---------- ○

2

A. Does an education authority in your country administer examinations in science that have consequences for individual students, such as determining grade promotion, entry to a higher school system, entry to university, and/or high school graduation?

No

Yes

*Fill in **one** circle only* ---------- ○ --- ○

*If **No**, please go to question **3***

B. If YES, please describe the authority which administers them (e.g., National Ministry of Education), and list the examinations and the grades at which they are given.

If examinations in separate science subjects such as life science, physical science, and earth science are given at different grades, please indicate this.

_____

_____

_____

_____

_____

_____

3

Are any of the following methods used to support and monitor the implementation of the national science curriculum at <grade 4>?

*Fill in **one** circle for each row*

		Yes	No
a)	Pre-service teacher education	○	○
b)	Professional development or in-service teacher education	○	○
c)	Mandated or recommended textbook(s)	○	○
d)	Instructional or pedagogical guide	○	○
e)	Ministry notes and directives	○	○
f)	Curriculum evaluation during or after implementation	○	○
g)	Specifically developed or recommended instructional activities	○	○
h)	National assessments based on student samples	○	○
i)	A system of school inspection or audit	○	○
j)	Other	○	○

(Please specify:_____)

4

Does the national curriculum specify the amount of instructional time that should be devoted to science?

*Fill in **one** circle for each row*

		Yes	No
a)	at <grade 2>	○	○

If **Yes**, what percentage of total instructional time is supposed to be devoted to science? _____

		Yes	No
b)	at <grade 4>	○	○

If **Yes**, what percentage of total instructional time is supposed to be devoted to science? _____

Pedagogical Approach

5

A. Does the national science curriculum at <grade 4> address the issue of students with different levels of ability?

	No	Yes
*Fill in **one** circle only*	○	○

*If **No**, please go to question* **6**

B. If YES, how does the national science curriculum at <grade 4> address the issue of students with different levels of ability?

*Fill in **one** circle for each row*

		No	Yes
a)	The same curriculum is prescribed for all students, with teachers adapting it to the needs of their students	○	○
b)	The same curriculum is prescribed for students of different ability levels, but at different levels of difficulty	○	○
c)	Different curricula are prescribed for students of different ability levels	○	○

6

How much emphasis does the national science curriculum at <grade 4> place on the following?

*Fill in **one** circle for each row*

		A lot	Some	Very little	None
a)	Knowing basic science facts	○	○	○	○
b)	Understanding science concepts	○	○	○	○
c)	Writing explanations about what was observed and why it happened	○	○	○	○
d)	Designing and planning experiments or investigations	○	○	○	○
e)	Conducting experiments or investigations	○	○	○	○
f)	Integrating science with other subjects	○	○	○	○
g)	Learning about technology and its impact on society	○	○	○	○
h)	Understanding human impact on the environment	○	○	○	○
i)	Using a multicultural approach	○	○	○	○

7

A. Does the national science curriculum contain statements/policies about the emphasis that should be placed on scientific inquiry in <grade 4> science?

	Yes	No
*Fill in **one** circle only*	○	○

*If **No**, please go to question* **8**

B. If YES, what are the statements/policies?

_____

_____

_____

_____

_____

_____

8

A. Does the national curriculum contain statements/policies about the use of computers in <grade 4> science?

	Yes	No
*Fill in **one** circle only*	○	○

*If **No**, please go to question* **9**

B. If YES, what are the statements/policies?

_____

_____

_____

_____

Teacher Education and Certification

9

A. Do <grade 4> science teachers receive specific preparation in how to teach the intended science curriculum at <grade 4>

*Fill in **one** circle for each row*

		No	Yes
a)	As part of pre-service education	○	○
b)	As part of in-service education	○	○

B. If you answered YES to either (a) or (b), describe the nature of the preparation.

_____

_____

_____

_____

10

A. Who certifies/licenses teachers?

*Fill in **one** circle for each row*

		No	Yes
a)	Minister/Ministry of Education	○	○
b)	National/state licensing board	○	○
c)	Universities/colleges	○	○
d)	Teacher organization/union	○	○

B. What are the current requirements for a <full/permanent> certificate?

*Fill in **one** circle for each row*

		No	Yes
a)	Pre-practicum and supervised practicum in the field	○	○
b)	Licensing examination	○	○
c)	<ISCED 5A, first degree>	○	○
d)	Completion of a probationary teaching period	○	○
	If **Yes**, how long is this period?_____		
e)	Completion of an induction program	○	○
f)	Other	○	○
	(Please specify:_____)		

Grade 4 Science Topics

11

According to the national science curriculum, what proportion of <grade 4> students should have been taught each of the following topics or skills by the end of <grade 4>?

Across grades K-12, what grade(s) are the topics primarily intended to be taught?

Be sure to include curriculum expectations for all grades up to and including <grade 4>. If there are not any specifications to this detail, please indicate national expectations to the best of your ability.

If part of a topic does not apply (e.g., methods of preventing and treating illness in topic (i) below), please cross out that part and answer for the major part of the topic.

	Proportion of <grade 4> students intended to be taught topic	**Grade(s) topic is intended to be taught K-12**
	*Fill in **one** circle for each row*	
	Not included in the curriculum through <grade 4>	
	Only the more able students	
	All or almost all students	
A. Life Science		
a) Types, characteristics, and classification of living things (common features of living things; characteristics of humans and other major groups of organisms)	○ ○ ○	_____
b) Major body structures and their function in humans and other organisms (plants and animals)	○ ○ ○	_____
c) Bodily actions in response to outside conditions (e.g., heat, cold, danger) and activities (e.g., exercise)	○ ○ ○	_____
d) The general steps in the life cycle of familiar organisms (e.g., humans, insects, frogs, plants)	○ ○ ○	_____
e) Plant and animal reproduction (passing on of general characteristics)	○ ○ ○	_____
f) Physical features, patterns of behavior and survival of plants and animals in different environments	○ ○ ○	_____
g) Relationships in a living community (e.g., simple food chains using common plants and animals and predator/prey relationships)	○ ○ ○	_____
h) Changes in environments (effects of human activity, pollution and its prevention)	○ ○ ○	_____
i) Ways that common communicable diseases (e.g., colds, influenza) are transmitted; signs of health/illness and some methods of preventing and treating illness	○ ○ ○	_____
j) Ways of maintaining good health, including diet and exercise	○ ○ ○	_____

11 continued

		Proportion of <grade 4> students intended to be taught topic	Grade(s) topic is intended to be taught K-12
		*Fill in **one** circle for each row*	
		Not included in the curriculum through <grade 4>	
		Only the more able students	
		All or almost all students	
B. Physical Science			
a)	Classification of objects and materials on the basis of observable physical properties	○ ○ ○	_____
b)	Properties and uses of metals	○ ○ ○	_____
c)	Forming and separating mixtures	○ ○ ○	_____
d)	Properties and uses of water	○ ○ ○	_____
e)	Chemical and physical changes (e.g., decaying of animal/plant matter, burning, rusting)	○ ○ ○	_____
f)	States of matter (solids, liquids, and gases) and differences in their physical properties in terms of shape and volume	○ ○ ○	_____
g)	Changes in state of water by heating and cooling (melting, freezing, boiling)	○ ○ ○	_____
h)	Common energy sources/forms and their practical uses (e.g., wind, sun, electricity, burning fuel, water wheel, food)	○ ○ ○	_____
i)	Heat flow and temperature	○ ○ ○	_____
j)	Common sources of light (e.g., bulb, flame, sun) and familiar physical phenomena related to light (e.g., formation of rainbows and shadows, visibility of objects, mirrors, colors)	○ ○ ○	_____
k)	Common uses of electricity and electrical circuits	○ ○ ○	_____
l)	Magnets (north and south poles, magnetic attraction and repulsion)	○ ○ ○	_____
m)	Forces that cause objects to move (e.g., gravity, push/pull forces)	○ ○ ○	_____

11 continued

According to the national science curriculum, what proportion of <grade 4> students should have been taught each of the following topics or skills by the end of <grade 4>?

Across grades K-12, what grade(s) are the topics primarily intended to be taught?

Be sure to include curriculum expectations for all grades up to and including <grade 4>. If there are not any specifications to this detail, please indicate national expectations to the best of your ability.

If part of a topic does not apply (e.g., methods of preventing and treating illness in topic (i) below), please cross out that part and answer for the major part of the topic.

		Proportion of <grade 4> students intended to be taught topic *Fill in **one** circle for each row* Not included in the curriculum through <grade 4> Only the more able students All or almost all students	Grade(s) topic is intended to be taught K-12
C. Earth Science			
a)	Rocks, minerals, sand, and soil (physical properties, locations, and uses of these materials)	○ ○ ○	_____
b)	Water on Earth (location, types, and movement)	○ ○ ○	_____
c)	Air (composition, proof of its existence, uses, and importance for supporting life)	○ ○ ○	_____
d)	Common features of the Earth's landscape (e.g., mountains, plains rivers, deserts) and relationship to human use (e.g., farming, irrigation, land development)	○ ○ ○	_____
e)	Use and conservation of Earth's natural resources	○ ○ ○	_____
f)	Earth's water cycle (water flowing in rivers from mountains to sea, cloud formation and precipitation)	○ ○ ○	_____
g)	Weather conditions from day to day or over the seasons	○ ○ ○	_____
h)	Fossils of animals and plants (age, formation)	○ ○ ○	_____
i)	Earth's solar system (planets, sun, moon)	○ ○ ○	_____

Thank You

for completing this questionnaire

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