Identification Label

Student ID:

Student Name:

Trends in International Mathematics and Science Study

TIMSS 2007

Student Questionnaire

<Grade 4>

<TIMSS National Research Center Name>
<Address>

International Association for the Evaluation
of Educational Achievement

General Directions

In this questionnaire, 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 respond.

Each question is followed by a number of answers. Shade in the circle next to 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 an answer to a question, put an "x" over your first choice, and then fill in the circle for your new choice. 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

1994 - ○
1995 - ○
1996 - ○
1997 - ○
1998 - ○
1999 - ○
2000 - ○
Other - ○

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

Month

January - ○
February - ○
March - ○
April - ○
May - ○
June - ○
July - ○
August - ○
September - ○
October - ○
November - ○
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

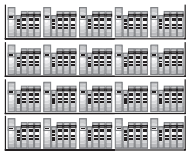
About how many books are there in your home? (Do not count magazines, newspapers, or your school books.)

*Fill in **one** circle only*

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

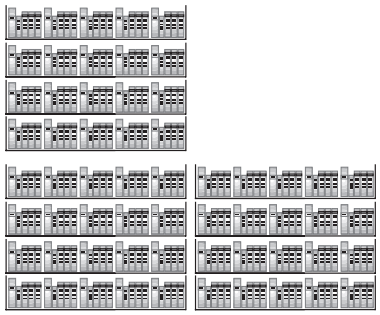
Enough to fill one shelf
(11-25 books) - ② This shows 25 books

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 things 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)	Internet connection	①	②
f)	<country-specific>	①	②
g)	<country-specific>	①	②
h)	<country-specific>	①	②
i)	<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
g)	Mathematics is boring	①	②	③	④
h)	I like 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, rectangles, and cubes	①	②	③	④
f)	I memorize how to work problems	①	②	③	④
g)	I work with other students in small groups	①	②	③	④
h)	I explain my answers	①	②	③	④
i)	I work problems on my own	①	②	③	④
j)	I use a calculator	①	②	③	④
k)	I use a computer	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
g)	Science is boring	①	②	③	④
h)	I like 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 look at something like the weather or a plant growing and write down what I see	①	②	③	④
b)	I watch the teacher do a science experiment	①	②	③	④
c)	I design or plan a science experiment or investigation	①	②	③	④
d)	I do a science experiment or investigation	①	②	③	④
e)	I work with other students in a small group on a science experiment or investigation	①	②	③	④
f)	I read books about science	①	②	③	④
g)	I memorize science facts	①	②	③	④
h)	I write or give an explanation for something I am studying in science	①	②	③	④
i)	I work science problems on my own	①	②	③	④
j)	I use a computer in science lessons	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) Elsewhere (e.g., public library, friend's home, Internet café)	①	②

C. How often do you use a computer for your schoolwork (in and out of school)?

*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) In mathematics	①	②	③	④	⑤
b) In science	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 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

Homework

14

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* **15** →

B. When your teacher gives you mathematics homework, about how many minutes do you usually spend on your homework?

*Fill in **one** circle only*

Zero minutes ---------- ①

1 - 15 minutes ---------- ②

16–30 minutes ---------- ③

31–60 minutes ---------- ④

61–90 minutes ---------- ⑤

More than 90 minutes ---------- ⑥

15

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* **16** →

B. When your teacher gives you science homework, about how many minutes do you usually spend on your homework?

*Fill in **one** circle only*

Zero minutes ---------- ①
1 - 15 minutes ---------- ②
16–30 minutes ---------- ③
31–60 minutes ---------- ④
61–90 minutes ---------- ⑤
More than 90 minutes ---------- ⑥

More About You

16

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

17

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 & PIRLS
International Study Center
Lynch School of Education, Boston College

Student Questionnaire

<Grade 4>

Identification Label

Teacher Name: _____

Class Name:_____

Teacher ID: _____ Teacher Link #_____

Trends in International Mathematics and Science Study

TIMSS 2007

Teacher Questionnaire

<Grade 4>

<TIMSS National Research Center Name>
<Address>

International Association for the Evaluation
of Educational Achievement

General Directions

Your school has agreed to participate in TIMSS 2007, a large international study of student learning in mathematics and science in more than 60 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 2007 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 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.

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

Do you have a teaching license or certificate?

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

5

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 4> ○
- Finished <ISCED 5B> ○
- Finished < ISCED 5A, first degree> ○
- Finished <ISCED 5A, second degree> or higher ○

6

A. During your <post-secondary> education, what was your <u>major or main</u> 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	○	○

About Your School

7

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

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

	Never or almost never	2 or 3 times per month	1-3 times per week	Daily or almost daily
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	○	○	○	○

8

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*

	Agree a lot	Agree	Disagree	Disagree a lot
a) This school is located in a safe neighborhood	○	○	○	○
b) I feel safe at this school	○	○	○	○
c) This school's security policies and practices are sufficient	○	○	○	○

9

In your current school, how severe is each problem?

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

	Not a problem	Minor problem	Serious problem
a) The school building needs significant repair	○	○	○
b) Classrooms are overcrowded	○	○	○
c) Teachers do not have adequate workspace outside their classroom	○	○	○
d) Materials are not available to conduct experiments or investigations	○	○	○

10

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

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

	Very high	High	Medium	Low	Very low
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	○	○	○	○	○

11

How well prepared do you feel you are to teach the following mathematics topics?

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

		Not applicable	Very well prepared	Somewhat prepared	Not well prepared
A. Number					
a)	Whole numbers including place value and ordering	○	○	○	○
b)	Adding, subtracting, multiplying and/or dividing with whole numbers	○	○	○	○
c)	Fractions (parts of a whole or a collection, location on a number line)	○	○	○	○
d)	Fractions represented by words, numbers, or models	○	○	○	○
e)	Comparing and ordering fractions	○	○	○	○
f)	Adding and subtracting with fractions	○	○	○	○
g)	Adding and subtracting with decimals	○	○	○	○
h)	Number sentences (finding the missing number, modeling simple situations with number sentences)	○	○	○	○
i)	Number patterns (extending number patterns and finding missing terms)	○	○	○	○
j)	Relationships between given pairs of whole numbers	○	○	○	○
B. Geometric Shapes and Measures					
a)	Comparing and drawing angles	○	○	○	○
b)	Elementary properties of common geometric shapes	○	○	○	○
c)	Relationships between two-dimensional and three-dimensional shapes	○	○	○	○
d)	Finding areas and perimeters	○	○	○	○
e)	Estimating areas and volumes	○	○	○	○
f)	Using informal coordinate systems to locate points in a plane	○	○	○	○
g)	Reflections and rotations	○	○	○	○
C. Data Display					
a)	Reading data from tables, pictographs, bar graphs, or pie charts	○	○	○	○
b)	Drawing conclusions from data displays	○	○	○	○
c)	Displaying data using tables, pictographs, bar graphs, or pie charts	○	○	○	○

Teaching Mathematics to the TIMSS Class

Questions 12-26 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 2007 in your school.

12

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

_____

Write in the number of students

B. How many students in Question 12A are in the <fourth-grade> ?

_____

Write in the number of <fourth grade> students

13

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

14

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

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

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

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 ○

15

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%

16

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* **18** →

17

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*

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

18

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

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

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

B. Do any of the computer(s) have access to the Internet?

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

19

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*

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

20

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*

		Every or almost every lesson	About half the lessons	Some lessons	Never
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)	Explain their answers	○	○	○	○
h)	Relate what they are learning in mathematics to their daily life	○	○	○	○
i)	Memorize formulas and procedures	○	○	○	○

21

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, decimals and number patterns) _____%

b) Geometric Shapes and Measures (includes two- and three-dimensional shapes, length, area and volume) _____%

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

d) Other, please specify:

_____ _____%

Total 100%

22

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 but not yet completed, please choose "Mostly taught this year." If a topic is not in the curriculum, please choose "Not yet taught or just introduced."

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

		Mostly taught before this year	Mostly taught this year	Not yet taught or just introduced
A. Number				
a)	Representing whole numbers using words, diagrams, or symbols	○	○	○
b)	Whole numbers including place value and ordering	○	○	○
c)	Computation with whole numbers	○	○	○
d)	Multiples and factors of numbers	○	○	○
e)	Estimation with whole numbers	○	○	○
f)	Problems involving proportions	○	○	○
g)	Fractions (parts of a whole or a collection, location on a number line)	○	○	○
h)	Equivalent fractions	○	○	○
i)	Comparing and ordering simple fractions	○	○	○
j)	Fractions represented by words, numbers, or models	○	○	○
k)	Adding and subtracting simple fractions	○	○	○
l)	Decimal place value including writing decimals using words and numbers	○	○	○
m)	Adding and subtracting with decimals	○	○	○
n)	Finding the missing number in a number sentence (e.g., if 17 + ___ = 29, what number would go in the blank to make the number sentence true?)	○	○	○
o)	Model simple situations involving unknowns with expressions or number sentences	○	○	○
p)	Extending patterns and finding missing terms in them	○	○	○
q)	Describing relationships between adjacent terms in a sequence	○	○	○
r)	Generating pairs of numbers following a given rule (e.g., multiply the first number by 3 and add 2 to get the second number)	○	○	○
s)	Finding a rule for a relationship given some pairs of numbers which satisfy the relationship	○	○	○

22 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 but not yet completed, please choose "Mostly taught this year." If a topic is not in the curriculum, please choose "Not yet taught or just introduced."

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

		Mostly taught before this year	Mostly taught this year	Not yet taught or just introduced
B. Geometric Shapes and Measures				
a)	Measuring and estimating lengths	○	○	○
b)	Parallel and perpendicular lines	○	○	○
c)	Comparing angles by size and drawing angles (e.g., a right angle, angles larger or smaller than a right angle)	○	○	○
d)	Elementary properties of common geometric shapes	○	○	○
e)	Recognizing relationships between three-dimensional shapes and their two-dimensional representations	○	○	○
f)	Calculating areas and perimeters of squares and rectangles of given dimensions	○	○	○
g)	Finding areas by covering with a given shape or counting squares	○	○	○
h)	Estimating areas and volumes	○	○	○
i)	Using informal coordinate systems to locate points in a plane	○	○	○
j)	Figures with line symmetry	○	○	○
k)	Reflections and rotations	○	○	○
C. Data Display				
a)	Reading data from tables, pictographs, bar graphs, or pie charts	○	○	○
b)	Comparing information from related data sets, (e.g., given graphs showing the favorite flavors of ice cream in different classes, identify the class with chocolate as the most popular flavor)	○	○	○
c)	Using information from data displays to answer questions that go beyond directly reading the data displayed (e.g., by performing computations, drawing conclusions and making predictions)	○	○	○
d)	Comparing and matching different representations of the same data	○	○	○
e)	Organizing and displaying data using tables, pictographs, bar graphs, or pie charts	○	○	○

23

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

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

*If **No**, please go to question* **26** ➡

24

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 ○

25

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 ○

26

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

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

	Not applicable	Not at all	A little	Some	A lot
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) Disruptive students	○	○	○	○	○

27

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	○	○

28

How well prepared do you feel to teach the following science topics?

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

	Not well prepared	Somewhat prepared	Very well prepared	Not applicable
A. Life Science				
a) Major body structures and their functions in humans and other organisms (plants 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) States of matter (solids, liquids, gases) and differences in their physical properties (shape, volume), including changes in state of matter by heating and cooling (melting, freezing, boiling, evaporating, condensation)	○	○	○	○
d) Familiar changes in materials (e.g., decaying of animal/plant matter, burning, rusting, cooking)	○	○	○	○
e) Common energy sources/forms and their practical uses (e.g., wind, sun, electricity, burning fuel, moving water, food)	○	○	○	○
f) Light (e.g. sources and behavior)	○	○	○	○
g) Electrical circuits	○	○	○	○
h) Properties of magnets	○	○	○	○
i) 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 Earth's landscape (e.g., mountains, plains, rivers, deserts) and relationship to human use (e.g., farming, irrigation, land development)	○	○	○	○
e) Weather conditions from day to day or over the seasons	○	○	○	○
f) Fossils of animals and plants (age, formation)	○	○	○	○
g) Earth's solar system (planets, sun, moon)	○	○	○	○

Teaching Science to the TIMSS Class

Questions 29-40 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 2007 in your school.

29

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

_____

Write in the number of students

B. How many students in Question 29A are in the <fourth-grade> ?

_____

Write in the number of <fourth grade> students

30

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

	Yes	No
*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

31

A. Do the <fourth-grade> students in the TIMSS class have computer(s) available to use when you are teaching science?

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

*If **No**, please go to question **33***

B. Do any of the computer(s) have access to the Internet?

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

32

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	○	○	○	○

33

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*

	Every or almost every lesson	About half the lessons	Some lessons	Never
a) Observe natural phenomena such as the weather or a plant growing and describe what they see	○	○	○	○
b) Watch me do a science experiment	○	○	○	○
c) Design or plan experiments or investigations	○	○	○	○
d) Do experiments or investigations	○	○	○	○
e) Work together in small groups on experiments or investigations	○	○	○	○
f) Read their textbooks or other resource materials	○	○	○	○
g) Have students memorize facts and principles	○	○	○	○
h) Give explanations about something they are studying	○	○	○	○
i) Relate what they are learning in science to their daily lives	○	○	○	○
j) Work individually at their own pace	○	○	○	○

34

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 environmental issues) ---------- _____%

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

c) Earth science (includes Earth and the solar system) ---------- _____%

d) Other, please specify:

_____ ---------- _____%

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

35

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

*Fill in **one** circle only*

	Yes	No
	○	○

*If **No**, please go to question **36***

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 ○

36

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 but not yet completed, please choose "Mostly taught this year." If a topic is not in the curriculum, please choose "Not yet taught or just introduced."

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

		Mostly taught before this year	Mostly taught this year	Not yet taught or just introduced
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)	General steps in the life cycle of familiar organisms (e.g., humans, butterflies, frogs, plants)	○	○	○
d)	Plant and animal reproduction (passing on of general characteristics)	○	○	○
e)	Physical features, behavior, and survival of plants and animals in different environments	○	○	○
f)	Bodily actions in response to outside conditions (e.g., heat, cold, danger) and activities (e.g., exercise)	○	○	○
g)	Energy requirements of plants and animals (energy from the sun to make food and to provide energy for growth and repair)	○	○	○
h)	Relationships in a living community (e.g., simple food chains using common plants and animals and predator-prey relationships)	○	○	○
i)	Changes in environments (effects of human activity, pollution and its prevention)	○	○	○
j)	Ways that common communicable diseases (e.g., colds, influenza) are transmitted; signs, prevention, and treatment of illness	○	○	○
k)	Ways of maintaining good health, including diet and exercise	○	○	○

36 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 but not yet completed, please choose "Mostly taught this year." If a topic is not in the curriculum, please choose "Not yet taught or just introduced."

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

		Mostly taught before this year	Mostly taught this year	Not yet taught or just introduced
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)	States of matter (solids, liquids, and gases) and differences in their physical properties in terms of shape and volume	○	○	○
f)	Changes in state of matter by heating and cooling (melting, freezing, boiling, evaporation, condensation)	○	○	○
g)	Familiar changes in materials (e.g., decaying of animal/plant matter, burning, rusting, cooking)	○	○	○
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)	Production of sound by vibrations	○	○	○
l)	Electrical circuits	○	○	○
m)	Magnets (north and south poles, magnetic attraction, and repulsion)	○	○	○
n)	Forces that cause objects to move (e.g., gravity, push/pull forces)	○	○	○

36 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 but not yet completed, please choose "Mostly taught this year." If a topic is not in the curriculum, please choose "Not yet taught or just introduced."

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

		Mostly taught before this year	Mostly taught this year	Not yet taught or just introduced
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)	○	○	○
j)	Earth's rotation on its axis (e.g., day and night, appearance of shadows)	○	○	○

37

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

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

*If **No**, please go to question **40*** ➡

38

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 ○

39

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 ○

40

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

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

	Not applicable	Not at all	A little	Some	A lot
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) Disruptive students	○	○	○	○	○

41

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	○	○

Thank You

for completing
this questionnaire

TIMSS & PIRLS
International Study Center
Lynch School of Education, Boston College

Teacher Questionnaire

<Grade 4>

Identification Label

School ID:

School Name:

Trends in International Mathematics and Science Study

TIMSS 2007

School Questionnaire

<Grade 4>

<TIMSS National Research Center Name>
<Address>

International Association for the Evaluation
of Educational Achievement

General Directions

Your school has agreed to participate in TIMSS 2007, a large international study of student learning in mathematics and science in more than 60 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.

School Characteristics

1

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:*_____

2

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 ○
- 3,000 people or fewer ○

3

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

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

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

4

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% ○

5

For the <fourth-grade> students in your school:

A. How many days per year is your school open for instruction?

_____ *days*
(write in number)

B. What is the total instructional time, excluding breaks, in a typical day?

_____ *hours and* _____ *minutes*
(write in the number of hours and minutes)

C. In one calendar week, how many days is the school open for instruction?

*Fill in **one** circle only*

- 6 days ○
- 5 1/2 days ○
- 5 days ○
- 4 1/2 days ○
- 4 days ○
- Other ○

Please specify _____

Your Role as Principal

6

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, meetings) ---------- _____%

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

7

Does your school ask parents to do the following?

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

		Yes	No
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)	○	○

School Climate for Learning

8

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

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

	Very high	High	Medium	Low	Very low
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	○	○	○	○	○

<Fourth-grade> Instruction in Mathematics and Science

9

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

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

10

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

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

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

11

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

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

12

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

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

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

<Fourth-grade> Teachers in Your School

13

In the past two years, what percentage of your <fourth-grade> teachers have been involved in professional development opportunities for mathematics and science targeted at the following?

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

	None	25% or fewer	26 – 50%	51 –75%	76 – 100%
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	○	○	○	○	○

14

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	○	○

15

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 ○

16

Does your school currently use any incentives (e.g., pay, housing, signing bonus, smaller classes) to recruit or retain <fourth-grade> teachers?

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

Student Behavior

17

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* Never / Rarely / Monthly / Weekly / Daily	B. Severity of problem in your school *Fill in **one** circle for each row in this section* 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	○ ○ ○ ○ ○	○ ○ ○

18

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	○	○	○	○

19

A. Does your school have a science laboratory?

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

B. Do teachers usually have assistance available when students are conducting science experiments?

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

20

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* **21**

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 ○

21

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

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

Thank You

for completing this questionnaire

TIMSS & PIRLS
International Study Center
Lynch School of Education, Boston College

School Questionnaire

<Grade 4>

TIMSS 2007 Mathematics Curriculum Questionnaire

Mathematics Curriculum and Instruction in Primary/Elementary Schools

1. Does your country have a national curriculum that covers mathematics instruction at the fourth grade of primary/elementary schooling?

   *Check **one** circle only.*

   Yes--- ○

   No--- ○

   If No…
   What is the highest level of decision-making authority (e.g., state or province) that provides a curriculum that covers mathematics instruction at the fourth grade of primary/elementary schooling?

   If Yes…
   Comments:

2. What is the grade-to-grade structure of the primary/elementary school curriculum that covers mathematics instruction (e.g., grades 1-5; grades 1-3, 4-5; grades 1, 2-4)?

Comments:

3. In what year was the current mathematics curriculum introduced?

Refers to the national curriculum that covers mathematics instruction at the fourth grade of primary/elementary schooling. If you do not have a national curriculum, please summarize for your state or provincial curricula.

Comments:

4. Is the mathematics curriculum currently being revised?

*Check **one** circle only.*

Yes--- ○

No--- ○

Refers to the national curriculum that covers mathematics instruction at the fourth grade of primary/elementary schooling. If you do not have a national curriculum, please summarize for your state or provincial curricula.

If Yes…
Please explain:

If No…
Comments:

5. What does the mathematics curriculum prescribe?

*Check **one** circle for each line.*

	Yes	No
a) Goals and objectives---------	○	○
b) Processes or methods--------	○	○
c) Materials----------	○	○
d) Percentage of students reaching defined goals----------	○	○
e) Other---------- Please specify: _____	○	○

Refers to the national curriculum that covers mathematics instruction at the fourth grade of primary/elementary schooling. If you do not have a national curriculum, please summarize for your state or provincial curricula.

Comments:

6. Does the national curriculum contain statements/policies about the use of calculators in grade 4 mathematics?

*Check **one** circle only.*

Yes--- ○

No--- ○

Refers to the national curriculum that covers mathematics instruction at the fourth grade of primary/elementary schooling. If you do not have a national curriculum, please summarize for your state or provincial curricula.

If Yes…
What are the statements/policies?

If No…
Comments:

7. Does the national curriculum contain statements/policies about the use of computers in grade 4 mathematics?

*Check **one** circle only.*

Yes--- ○

No--- ○

Refers to the national curriculum that covers mathematics instruction at the fourth grade of primary/elementary schooling. If you do not have a national curriculum, please summarize for your state or provincial curricula.

If Yes…
What are the statements/policies?

If No…
Comments:

8. How much emphasis does the national mathematics curriculum place on the following?

*Check **one** circle for each line.*

	None	Very Little	Some	A lot
a) Mastering basic skills and procedures----------	○	○	○	○
b) Understanding mathematical concepts and principles----------	○	○	○	○
c) Applying mathematics in real-life contexts----------	○	○	○	○
d) Communicating mathematically-----	○	○	○	○
e) Reasoning mathematically----------	○	○	○	○
f) Incorporating the experiences of different ethnic/cultural groups-------	○	○	○	○
g) Integrating mathematics with other subjects----------	○	○	○	○

Refers to the national curriculum that covers mathematics instruction at the fourth grade of primary/elementary schooling. If you do not have a national curriculum, please summarize for your state or provincial curricula.

Comments:

9. 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, at 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., location on a number line in part A topic (g)), please explain in the comment field.

	Proportion of grade 4 students expected to be taught topic *Check **one** circle for each line.*			**Grade(s) topic is expected to be taught K-12**
	All or almost all students	**Only the more able students**	**Not included in the curriculum through grade 4**	
A. Number				
a) Representing whole numbers using words, diagrams, or symbols----------	○	○	○	_____
b) Whole numbers including place value and ordering-------	○	○	○	_____
c) Computation with whole numbers----------	○	○	○	_____
d) Multiples and factors of numbers----------	○	○	○	_____
e) Estimation with whole numbers----------	○	○	○	_____
f) Problems involving proportions----------	○	○	○	_____
g) Fractions (parts of a whole or a collection, location on a number line)----------	○	○	○	_____
h) Equivalent fractions----------	○	○	○	_____

i) Comparing and ordering simple fractions----------		_____
j) Fractions represented by words, numbers, or models----		_____
k) Adding and subtracting simple fractions----------		_____
l) Decimal place value including writing decimals using words and numbers----------		_____
m) Adding and subtracting with decimals----------		_____
n) Finding the missing number in a number sentence (e.g., if 17 + ___= 29, what number would go in the blank to make the number sentence true?)----		_____
o) Model simple situations involving unknowns with expressions or number sentences----------		_____
p) Extending patterns and finding missing terms in them----------		_____
q) Describing relationships between adjacent terms in a sequence----------		_____
r) Generating pairs of numbers following a given rule (e.g., multiply the first number by 3 and add 2 to get the second number)----------		_____
s) Finding a rule for a relationship given some pairs of numbers which satisfy the relationship----------		_____

Refers to the national curriculum that covers mathematics instruction at the fourth grade of primary/elementary schooling. If you do not have a national curriculum, please summarize for your state or provincial curricula.

Comments:

	Proportion of grade 4 students expected to be taught topic *Check **one** circle for each line.*			Grade(s) topic is expected to be taught K-12
	All or almost all students	**Only the more able students**	**Not included in the curriculum through grade 4**	
B. Geometric Shapes and Measures				
a) Measuring and estimating lengths----------	○	○	○	_____
b) Parallel and perpendicular lines----------	○	○	○	_____
c) Comparing angles by size and drawing angles (e.g., a right angle, angles larger or smaller than a right angle)----------	○	○	○	_____
d) Elementary properties of common geometric shapes----	○	○	○	_____
e) Recognizing relationships between three-dimensional shapes and their two-dimensional representations---	○	○	○	_____
f) Calculating areas and perimeters of squares and rectangles of given dimensions----------	○	○	○	_____
g) Finding areas by covering with a given shape or counting squares----------	○	○	○	_____
h) Estimating areas and volumes----------	○	○	○	_____
i) Using informal coordinate systems to locate points in a plane----------	○	○	○	_____
j) Figures with line symmetry---	○	○	○	_____
k) Reflections and rotations------	○	○	○	_____

Refers to the national curriculum that covers mathematics instruction at the fourth grade of primary/elementary schooling. If you do not have a national curriculum, please summarize for your state or provincial curricula.

Comments:

	Proportion of grade 4 students expected to be taught topic *Check **one** circle for each line.*			Grade(s) topic is expected to be taught K-12
C. Data Display	**All or almost all students**	**Only the more able students**	**Not included in the curriculum through grade 4**	
a) Reading data from tables, pictographs, bar graphs, or pie charts----------	○	○	○	_____
b) Comparing information from related data sets (e.g., given graphs showing the favorite flavors of ice cream in different classes, identify the class with chocolate as the most popular flavor)----------	○	○	○	_____
c) Using information from data displays to answer questions that go beyond directly reading the data displayed (e.g., by performing computations, drawing conclusions, and making predictions)----------	○	○	○	_____
d) Comparing and matching different representations of the same data----------	○	○	○	_____
e) Organizing and displaying data using tables, pictographs, bar graphs, or pie charts-------	○	○	○	_____

Refers to the national curriculum that covers mathematics instruction at the fourth grade of primary/elementary schooling. If you do not have a national curriculum, please summarize for your state or provincial curricula.

Comments:

10. Which best describes how the mathematics curriculum addresses the issue of students with different levels of ability?

Please answer for students in regular classes, and explain provisions for special needs students in the comment box.

*Check **one** circle only.*

The same curriculum is prescribed for all students----------	○
The same curriculum is prescribed for students of different ability levels, but at different levels of difficulty----------	○
Different curricula are prescribed for students of different ability levels--	○

Refers to the national curriculum that covers mathematics instruction at the fourth grade of primary/elementary schooling. If you do not have a national curriculum, please summarize for your state or provincial curricula.

Comments:

11. In what form is the mathematics curriculum made available?

*Check **one** circle for each line.*

	Yes	No
a) Official publication containing the curriculum----------	○	○
b) Ministry notes and directives----------	○	○
c) Mandated or recommended textbooks----------	○	○
d) Instructional or pedagogical guide----------	○	○
e) Specifically developed or recommended instructional activities----	○	○
f) Other----------	○	○

Please specify:

_____

Refers to the national curriculum that covers mathematics instruction at the fourth grade of primary/elementary schooling. If you do not have a national curriculum, please summarize for your state or provincial curricula.

Comments:

12. a) In a typical week, what is the total amount of instructional time prescribed by the curriculum at the fourth grade of primary/elementary school?

☐ hours and ☐ minutes

b) What percentage of total instructional time is supposed to be devoted to **mathematics** instruction at the fourth grade of primary/elementary school?

☐ % of total
Write in a number

Comments:

c) Is there a policy to assign mathematics homework at the fourth grade of primary/elementary school?

*Check **one** circle only.*

Yes--- ○
No--- ○

If Yes…
What is the policy?

If No…
Comments:

13. Is there an official policy to provide remedial mathematics instruction at the fourth grade of primary/elementary school?

*Check **one** circle only.*

Yes--- ○

No--- ○

If Yes…
What is the policy?

If No…
Comments:

14. Which are the current requirements for being a primary/elementary grade teacher?

*Check **one** circle for each line.*

	Yes	No
a) A degree from a teacher education program----------	○	○
b) Pre-practicum during teacher education program----------	○	○
c) Supervised practicum in the field----------	○	○
d) Passing a certification examination----------	○	○
e) Completion of a probationary teaching period---------- *If Yes…* How long is this period? _____	○	○
f) Completion of a mentoring or induction program----------	○	○
g) Other---------- Please specify: _____	○	○

Refers to the requirements encompassing fourth grade.

Comments:

15. Is there a process to license or certify primary/elementary grade teachers?

*Check **one** circle only.*

Yes--- ○

No--- ○

Refers to the requirements encompassing fourth grade.

If Yes…
Who certifies/licenses primary/elementary grade teachers?

*Check **one** circle for each line.*

	Yes	**No**
a) Minister/Ministry of Education----------	○	○
b) National/state licensing board----------	○	○
c) Universities/colleges----------	○	○
d) Teacher organization/union----------	○	○
e) Other----------	○	○
Please specify: _____		

Comments:

If No…
Comments:

16. As part of pre-service education, do prospective teachers receive specific preparation in how to teach the mathematics curriculum?

*Check **one** circle only.*

Yes--- ○

No--- ○

Comments:

17. How do practicing teachers get help to implement the mathematics curriculum?

*Check **one** circle for each line.*

	Yes	No
a) In-service training----------	○	○
b) Expert teacher/mentor----------	○	○
c) Reduced teaching load for new teachers----	○	○
d) Other----------	○	○

Please specify:

_____

Comments:

18. If changes were made to the mathematics curriculum, how would a teacher learn about them?

*Check **one** circle for each line.*

	Yes	No
a) Special conferences/seminars on curriculum----------	○	○
b) Ministry (Department of Education, Government, Board of Education) Website----------	○	○
c) Printed copies of curriculum distributed to schools----------	○	○
d) Teachers receive own printed copy----------	○	○
e) Professional development/in-service education----------	○	○
f) Ministry Notes----------	○	○
g) Professional association newsletter----------	○	○
h) Education journals----------	○	○
i) Other educational authorities----------	○	○
j) Other----------	○	○

Please specify:

_____

Comments:

19. How are parents informed about the mathematics curriculum?

*Check **one** circle for each line.*

	Yes	No
a) From teachers----------	○	○
b) From the school administration----------	○	○
c) From public awareness campaigns----------	○	○
d) From Ministry Website----------	○	○
e) From Ministry brochures and documents--------	○	○
f) Through parents' associations/organizations----	○	○
g) Other----------	○	○

Please specify:

_____

Comments:

20. Is there a policy to encourage parental involvement in the schools attended by fourth-grade students?

*Check **one** circle only.*

Yes--- ○

No--- ○

If Yes…
What is the policy?

If No…
Comments:

21. How is the mathematics curriculum implementation evaluated?

*Check **one** circle for each line.*

	Yes	No
a) Visits by inspectors----------	○	○
b) Research programs----------	○	○
c) School self-evaluation----------	○	○
d) National or regional assessments----------	○	○
e) Other----------	○	○

Please specify:

_____

Comments:

22. Across grades K-12, does an education authority in your country (e.g., National Ministry of Education) administer examinations in mathematics that have consequences for individual students, such as determining grade promotion, entry to a higher school system, entry to a university, and/or exiting or graduating from high school?

*Check **one** circle only.*

Yes--- ○

No--- ○

If Yes…
Please describe the authority which administers examinations in mathematics, and list the grades at which they are given:

If No…
Comments:

Addendum on Amount of Schooling for Students Tested in TIMSS 2007

1. What is your country's name for the grade tested in TIMSS 2007 in English?

2. In your country, what was the stated official policy or regulation on students' age of entry to primary school (ISCED Level 1) in 2002-2003?

   Examples: "Children begin school during the calendar year of their 6th birthday", "children must be 6 years old by the end of June to begin school the following September".

3. In your country, what was the usual age of students when they began primary school (ISCED Level 1) in 2002-2003? (Note: This response may be the same as that for question 2.)

4. Does your country have a policy on the promotion and retention of students across grades 1-8 (e.g., automatic promotion for grades 1-5, dependent on academic progress for grades 6-8)?

*Check **one** circle only.*

Yes--- ○
No--- ○

If No…
Please describe:

If Yes…
Comments:

5. Does your country have a nationally mandated number of school days per year?

*Check **one** circle only.*

Yes--- ○
No--- ○

Please describe:

Years of Compulsory Schooling

INSTRUCTIONS: Complete the ages and grades for the years of schooling at the preprimary and primary/secondary levels for your country in the spaces provided below. Specify by what date the student must be this age (e.g., must be age 6 by September 1st).

Preprimary Compulsory Schooling		Preprimary Schooling Provided		Primary and Secondary Compulsory Schooling		Primary and Secondary Schooling Provided	
Ages	Grades	Ages	Grades	Ages	Grades	Ages	Grades

SOURCE: IEA's Trends in International Mathematics and Science Study (TIMSS) 2007

TIMSS 2007 Science Curriculum Questionnaire

Science Curriculum and Instruction in Primary/Elementary Schools

1. Does your country have a national curriculum that covers science instruction at the fourth grade of primary/elementary schooling?

   *Check **one** circle only.*

   Yes--- ○

   No--- ○

   If No…
   What is the highest level of decision-making authority (e.g., state or province) that provides a curriculum that covers science instruction at the fourth grade of primary/elementary schooling?

   If Yes…
   Comments:

2. What is the grade-to-grade structure of the primary/elementary school curriculum that covers science instruction (e.g., grades 1-5; grades 1-3, 4-5; grade 1, 2-4)?

Comments:

3. In what year was the current science curriculum introduced?

Refers to the national curriculum that covers science instruction at the fourth grade of primary/elementary schooling. If you do not have a national curriculum, please summarize for your state or provincial curricula.

Comments:

4. Is the science curriculum currently being revised?

*Check **one** circle only.*

Yes--- ○

No--- ○

Refers to the national curriculum that covers science instruction at the fourth grade of primary/elementary schooling. If you do not have a national curriculum, please summarize for your state or provincial curricula.

If Yes…
Please explain:

If No…
Comments:

5. What does the science curriculum prescribe?

*Check **one** circle for each line.*

	Yes	No
a) Goals and objectives---------	○	○
b) Processes or methods--------	○	○
c) Materials----------	○	○
d) Percentage of students reaching defined goals----------	○	○
e) Other---------- Please specify: _____	○	○

Refers to the national curriculum that covers science instruction at the fourth grade of primary/elementary schooling. If you do not have a national curriculum, please summarize for your state or provincial curricula.

Comments:

6. Does the national curriculum contain statements/policies about the use of computers in grade 4 science?

*Check **one** circle only.*

Yes--- ○

No--- ○

Refers to the national curriculum that covers science instruction at the fourth grade of primary/elementary schooling. If you do not have a national curriculum, please summarize for your state or provincial curricula.

If Yes…
What are the statements/policies?

If No…
Comments:

7. How much emphasis does the national science curriculum place on the following?

*Check **one** circle for each line.*

	None	Very Little	Some	A lot
a) Knowing basic science facts and principles----------	○	○	○	○
b) Observing natural phenomena and describing what is seen----------	○	○	○	○
c) Providing explanations about what is being studied----------	○	○	○	○
d) Designing and planning experiments or investigations----------	○	○	○	○
e) Conducting experiments or investigations----------	○	○	○	○
f) Integrating science with other subjects----------	○	○	○	○
g) Relating what students are learning to their daily lives----------	○	○	○	○
h) Incorporating the experiences of different ethnic/cultural groups-------	○	○	○	○

Refers to the national curriculum that covers science instruction at the fourth grade of primary/elementary schooling. If you do not have a national curriculum, please summarize for your state or provincial curricula.

Comments:

8. 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, at 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., frogs in part A topic (c)), please explain in the comment field.

	Proportion of grade 4 students expected to be taught topic *Check **one** circle for each line.*			**Grade(s) topic is expected to be taught K-12**
	All or almost all students	**Only the more able students**	**Not included in the curriculum through grade 4**	
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) General steps in the life cycle of familiar organisms (e.g., humans, butterflies, frogs, plants)----------	○	○	○	_____
d) Plant and animal reproduction (passing on of general characteristics)----------	○	○	○	_____

e) Physical features, behavior and survival of plants and animals in different environments----------		_____
f) Bodily actions in response to outside conditions (e.g., heat, cold, danger) and activities (e.g., exercise)----------		_____
g) Energy requirements of plants and animals (energy from the sun to make food and to provide energy for growth and repair)----------		_____
h) Relationships in a living community (e.g., simple food chains using common plants and animals and predator-prey relationships)----------		_____
i) Changes in environments (effects of human activity, pollution and its prevention)--		_____
j) Ways that common communicable diseases (e.g., colds, influenza) are transmitted; signs, prevention, and treatment of illness--------		_____
k) Ways of maintaining good health, including diet and exercise----------		_____

Refers to the national curriculum that covers science instruction at the fourth grade of primary/elementary schooling. If you do not have a national curriculum, please summarize for your state or provincial curricula.

Comments:

	Proportion of grade 4 students expected to be taught topic *Check **one** circle for each line.*			Grade(s) topic is expected to be taught K-12
B. Physical Science	**All or almost all students**	**Only the more able students**	**Not included in the curriculum through grade 4**	
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) States of matter (solids, liquids, and gases) and differences in their physical properties in terms of shape and volume----------	○	○	○	_____
f) Changes in state of matter by heating and cooling (melting, freezing, boiling, evaporation, condensation)----------	○	○	○	_____
g) Familiar changes in materials (e.g., decaying of animal/plant matter, burning, rusting, cooking)----------	○	○	○	_____
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) Production of sound by vibrations----------		_____
l) Electrical circuits----------		_____
m) Magnets (north and south poles, magnetic attraction, and repulsion)----------		_____
n) Forces that cause objects to move (e.g., gravity, push/pull forces)----------		_____

Refers to the national curriculum that covers science instruction at the fourth grade of primary/elementary schooling. If you do not have a national curriculum, please summarize for your state or provincial curricula.

Comments:

	Proportion of grade 4 students expected to be taught topic *Check **one** circle for each line.*			Grade(s) topic is expected to be taught K-12
	All or almost all students	**Only the more able students**	**Not included in the curriculum through grade 4**	
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)----------	○	○	○	_____
j) Earth's rotation on its axis (e.g., day and night, appearance of shadows)-------	○	○	○	_____

Refers to the national curriculum that covers science instruction at the fourth grade of primary/elementary schooling. If you do not have a national curriculum, please summarize for your state or provincial curricula.

Comments:

9. Which best describes how the science curriculum addresses the issue of students with different levels of ability?

Please answer for students in regular classes, and explain provisions for special needs students in the comment box.

*Check **one** circle only.*

The same curriculum is prescribed for all students----------	○
The same curriculum is prescribed for students of different ability levels, but at different levels of difficulty----------	○
Different curricula are prescribed for students of different ability levels--	○

Refers to the national curriculum that covers science instruction at the fourth grade of primary/elementary schooling. If you do not have a national curriculum, please summarize for your state or provincial curricula.

Comments:

10. In what form is the science curriculum made available?

*Check **one** circle for each line.*

	Yes	No
a) Official publication containing the curriculum----------	○	○
b) Ministry notes and directives----------	○	○
c) Mandated or recommended textbooks----------	○	○
d) Instructional or pedagogical guide----------	○	○
e) Specifically developed or recommended instructional activities----	○	○
f) Other----------	○	○

Please specify:

_____

Refers to the national curriculum that covers science instruction at the fourth grade of primary/elementary schooling. If you do not have a national curriculum, please summarize for your state or provincial curricula.

Comments:

11. a) In a typical week, what is the total amount of instructional time prescribed by the curriculum at the fourth grade of primary/elementary school?

[ ] hours and [ ] minutes

b) What percentage of total instructional time is supposed to be devoted to **science** instruction at the fourth grade of primary/elementary school?

[ ] % of total
Write in a number

Comments:

[ ]

c) Is there a policy to assign science homework at the fourth grade of primary/elementary school?

*Check **one** circle only.*

Yes--- ○
No--- ○

If Yes…
What is the policy?

[ ]

If No…
Comments:

[ ]

12. Is there an official policy to provide remedial science instruction at the fourth grade of primary/elementary school?

*Check **one** circle only.*

Yes--- ○

No--- ○

If Yes…
What is the policy?

If No…
Comments:

13. Which are the current requirements for being a primary/elementary grade teacher?

*Check **one** circle for each line.*

	Yes	No
a) A degree from a teacher education program----------	○	○
b) Pre-practicum during teacher education program----------	○	○
c) Supervised practicum in the field----------	○	○
d) Passing a certification examination----------	○	○
e) Completion of a probationary teaching period---------- *If Yes…* How long is this period? _____	○	○
f) Completion of a mentoring or induction program----------	○	○
g) Other---------- Please specify: _____	○	○

Refers to the requirements encompassing fourth grade.

Comments:

14. Is there a process to license or certify primary/elementary grade teachers?

*Check **one** circle only.*

Yes--- ○

No--- ○

Refers to the requirements encompassing fourth grade.

If Yes…
Who certifies/licenses primary/elementary grade teachers?

*Check **one** circle for each line.*

	Yes	No
a) Minister/Ministry of Education----------	○	○
b) National/state licensing board----------	○	○
c) Universities/colleges----------	○	○
d) Teacher organization/union----------	○	○
e) Other----------	○	○
Please specify: _____		

Comments:

If No…
Comments:

15. As part of pre-service education, do prospective teachers receive specific preparation in how to teach the science curriculum?

*Check **one** circle only.*

Yes--- ○

No--- ○

Comments:

16. How do practicing teachers get help to implement the science curriculum?

*Check **one** circle for each line.*

	Yes	No
a) In-service training----------	○	○
b) Expert teacher/mentor----------	○	○
c) Reduced teaching load for new teachers----	○	○
d) Other----------	○	○

Please specify:

_____

Comments:

17. If changes were made to the science curriculum, how would a teacher learn about them?

*Check **one** circle for each line.*

	Yes	No
a) Special conferences/seminars on curriculum----------	○	○
b) Ministry (Department of Education, Government, Board of Education) Website----------	○	○
c) Printed copies of curriculum distributed to schools----------	○	○
d) Teachers receive own printed copy----------	○	○
e) Professional development/in-service education----------	○	○
f) Ministry Notes----------	○	○
g) Professional association newsletter----------	○	○
h) Education journals----------	○	○
i) Other educational authorities----------	○	○
j) Other----------	○	○

Please specify:

_____

Comments:

18. How are parents informed about the science curriculum?

*Check **one** circle for each line.*

	Yes	No
a) From teachers----------	○	○
b) From the school administration----------	○	○
c) From public awareness campaigns----------	○	○
d) From Ministry Website----------	○	○
e) From Ministry brochures and documents--------	○	○
f) Through parents' associations/organizations----	○	○
g) Other----------	○	○

Please specify:

_____

Comments:

19. Is there a policy to encourage parental involvement in the schools attended by fourth-grade students?

*Check **one** circle only.*

Yes--- ○

No--- ○

If Yes…
What is the policy?

If No…
Comments:

20. How is the science curriculum implementation evaluated?

*Check **one** circle for each line.*

	Yes	No
a) Visits by inspectors----------	○	○
b) Research programs----------	○	○
c) School self-evaluation----------	○	○
d) National or regional assessments----------	○	○
e) Other----------	○	○

Please specify:

_____

Comments:

21. Across grades K-12, does an education authority in your country (e.g., National Ministry of Education) administer examinations in science that have consequences for individual students, such as determining grade promotion, entry to a higher school system, entry to a university, and/or exiting or graduating from high school?

*Check **one** circle only.*

Yes--- ○

No--- ○

If Yes…
Please describe the authority which administers examinations in science, and list the grades at which they are given:

If No…
Comments: