



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.*

Under 25 -----

25–29 -----

30–39 -----

40–49 -----

50–59 -----

60 or older -----

2

Are you female or male?

*Fill in **one** circle.*

Female -----

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

Fill in **one** circle for each

Yes No

- 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

Yes No

- a) Mathematics -----○ ---○
- b) Science -----○ ---○
- c) Language/reading -----○ ---○
- d) Other subject -----○ ---○

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

Fill in **one** circle for each

Yes No

- 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 -----○ ---○

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A. Do you have a teaching license or certificate?

Yes No

Fill in **one** circle for each -----○ ---○

If **No**, please

circle **9**



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

Fill in **one** circle for each

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

(Please specify: _____)

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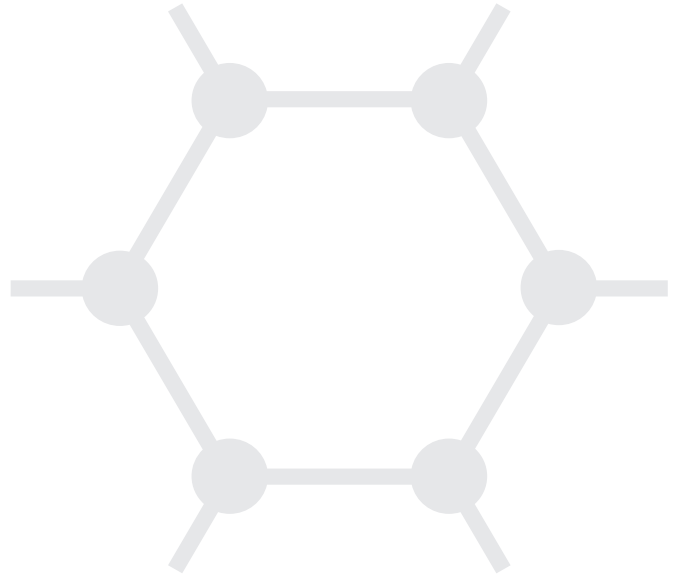
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In the past two years, have you participated in professional development in any of the following?

Fill in **one** circle for each

_____ **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 -----○ ---○






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

Fill in **one** circle

- Yes, with unrestricted use
- Yes, with restricted use
- No, calculators are not permitted

If **No**, please see item 22 

19

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

Fill in **one** circle

- All
- Most
- About half

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

- | | | | | |
|--|------------------------------|--------------|--|-------|
| | | | | 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

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?

Weighted Percentage
The total should add 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) ----- _____%

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

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 $17 + \underline{\quad} = 29$, 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

Not yet taught or

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

	Not yet taught or just introduced	Mostly taught 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 ----- --- ---

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

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

Not ready		
Ready		
Very 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) ----- --- ---

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

*Fill in **one** circle each*

- | | _____ | 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 ----- | ○ | --- ○ |

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?

Wie iⁿ he^r be f^r de^r

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

Wie iⁿ he^r be f^r <f^ou^rth g^rade> de^r

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?

Yes No

Fill iⁿ **one** ci^{rc}le *pl* -----○-----○

- A. If YES...

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

Wie iⁿ he^r be f^r iⁿ e⁻ee^k

- 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.

Wie iⁿ he^r be f^r iⁿ e⁻ee^k

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

Yes No

Fill iⁿ **one** ci^{rc}le *pl* -----○-----○

If **No**, lea^{ve} e^{it} **35** 

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

Fill iⁿ **one** ci^{rc}le *pl*

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

As a supplementary resource -----○

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?

W i e j h e i c e
The al h l d d d 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%

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

	Not yet taught or just introduced	Mostly taught this year	Mostly taught before 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)

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

	Not yet taught or just introduced	Mostly taught this year	Mostly taught before this year
B. Physical Science			

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

_____ No

_____ Yes



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