

Place
Label Here

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School ID

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Class ID

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Teacher ID

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Link Number

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Subject

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Checksum

TIMSS 2011

Teacher Questionnaire Mathematics

Grade 8

National Center for Education Statistics

U.S. Department of Education

1990 K St., NW

Washington, DC 20006



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

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According to the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless such collection displays a valid OMB control number. The valid OMB control number for this information collection is 1850-0645. Approval expires XX/XX/2011. The time required to complete this information collection is estimated to average 30 minutes per response, including the time to review instructions, search existing data resources, gather the data needed, and complete and review the information collection. **If you have any comments concerning the accuracy of the time estimate(s) or suggestions for improving the survey instrument, please write to:** U.S. Department of Education, Washington, D.C. 20202-4537. **If you have any comments or concerns regarding the status of your individual response to this survey, write directly to:** National Center for Education Statistics, 1990 K Street, N.W., Room 9034, Washington, D.C. 20006.

Teacher Questionnaire

Your school has agreed to participate in TIMSS 2011 (Trends in International Mathematics and Science Study), an educational research project sponsored by the International Association for the Evaluation of Educational Achievement (IEA). TIMSS measures trends in student achievement in mathematics and science and studies differences in national education systems in more than 60 countries in order to help improve teaching and learning worldwide.

This questionnaire is addressed to teachers of eighth-grade students, and seeks information about teachers' academic and professional backgrounds, classroom resources, instructional practices, and attitudes toward teaching. Since your class has been selected as part of a nationwide sample, your responses are very important in helping to describe eighth-grade education in the United States.

Some of the questions in the questionnaire refer to the "TIMSS class" or "this class". This is the class that is identified on the front of this booklet, and which will be tested as part of TIMSS 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.

Since TIMSS is an international study and all countries are using the same questionnaire, you may find that some of the questions seem unusual or are not entirely relevant to you or schools in the United States. Nevertheless, it is important that you do your best to answer all of the questions so comparisons can be made across countries in the studies.

It is estimated that you will need approximately 30 minutes to complete this questionnaire. We appreciate the time and effort that this takes and thank you for your cooperation and contribution.

When you have completed the questionnaire, please return it to the TIMSS school coordinator.

NCES is authorized to collect information from the questionnaire under the Education Sciences Reform Act of 2002 (Public Law 107-279, Section 153). You do not have to provide the information requested. However, the information you provide will help the U.S. Department of Education's ongoing efforts to understand better how the educational system in the United States compares to that in other countries. There are no penalties should you choose not to participate in this study. Your answers may be used only for statistical purposes and may not be disclosed, or used, in identifiable form for any other purpose (Public Law 107-279, Section 183 and Title V, subtitle A of the E-Government Act of 2002 (P.L. 107-347)). Your response will be combined with those from other participants to produce summary statistics and reports.

This survey is estimated to take an average of 30 minutes, including time for reviewing instructions, and completing and reviewing the collection of information. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to: Stephen Provasnik, National Center for Education Statistics, U.S. Department of Education, 1990 K Street NW, Room 9034, Washington, DC 20006-5650. Do not return the completed form to this address.

Thank you.

If you have already completed Questions 1 through 11 in another TIMSS Mathematics Teacher Questionnaire, please **skip to Question 12** in this Questionnaire.

TIMSS 2011

About You

1

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

_____ years
Please **round** to the nearest whole number.

2

Are you female or male?

Fill in **one** circle only.

Female --- (1)

Male --- (2)

3

How old are you?

Fill in **one** circle only.

Under 25 --- (1)

25–29 --- (2)

30–39 --- (3)

40–49 --- (4)

50–59 --- (5)

60 or more --- (6)

4

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

Fill in **one** circle only.

Did not complete high school --- (1)

Completed high school --- (2)

Completed a vocational/technical certificate after high school --- (3)

Completed an Associate's degree (AA) in vocational/technical program --- (4)

Completed an academic Associate's degree (AA) or Bachelor's degree --- (5)

Completed an academic Master's degree, postgraduate certificate program (e.g., teaching) or first professional degree (e.g., law, medicine, dentistry) --- (6)

Completed a doctorate (Ph.D. or Ed.D) --- (7)

5

During your college or university education, what was your **major or main** area(s) of study?

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

- | | Yes | No |
|--------------------------------|-----|-----|
| a) Mathematics ----- | (1) | (2) |
| b) Biology ----- | (1) | (2) |
| c) Physics ----- | (1) | (2) |
| d) Chemistry ----- | (1) | (2) |
| e) Earth Science ----- | (1) | (2) |
| f) Education–Mathematics ----- | (1) | (2) |
| g) Education–Science ----- | (1) | (2) |
| h) Education–General ----- | (1) | (2) |
| i) Other ----- | (1) | (2) |

6

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

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

- Very high**
High
Medium
Low
Very low
- a) Teachers' job satisfaction ----- ① — ② — ③ — ④ — ⑤
- b) Teachers' understanding of the school's curricular goals ----- ① — ② — ③ — ④ — ⑤
- c) Teachers' degree of success in implementing the school's curriculum ----- ① — ② — ③ — ④ — ⑤
- d) Teachers' expectations for student achievement ----- ① — ② — ③ — ④ — ⑤
- e) Parental support for student achievement ----- ① — ② — ③ — ④ — ⑤
- f) Parental involvement in school activities ----- ① — ② — ③ — ④ — ⑤
- g) Students' regard for school property ----- ① — ② — ③ — ④ — ⑤
- h) Students' desire to do well in school ----- ① — ② — ③ — ④ — ⑤

7

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 line.

- Agree a lot**
Agree a little
Disagree a little
Disagree a lot
- a) This school is located in a safe neighborhood ----- ① — ② — ③ — ④
- b) I feel safe at this school ----- ① — ② — ③ — ④
- c) This school's security policies and practices are sufficient ----- ① — ② — ③ — ④
- d) The students behave in an orderly manner ----- ① — ② — ③ — ④
- e) The students are respectful of the teachers ----- ① — ② — ③ — ④

8

In your current school, how severe is each problem?

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

- Not a problem**
Minor problem
Moderate problem
Serious problem
- a) The school building needs significant repair ----- ① — ② — ③ — ④
- b) Classrooms are overcrowded ----- ① — ② — ③ — ④
- c) Teachers have too many teaching hours ----- ① — ② — ③ — ④
- d) Teachers do not have adequate workspace for preparation, collaboration, or meeting with students ----- ① — ② — ③ — ④
- e) Teachers do not have adequate instructional materials and supplies ----- ① — ② — ③ — ④

9

A. Do you use computers in your teaching in any of the following ways?

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

- Yes No
- a) For preparation ----- (1) — (2)
- b) For administration ----- (1) — (2)
- c) In your classroom instruction ----- (1) — (2)

If Yes to “classroom instruction”

B. How much do you agree with the following statements about using computers in your classroom instruction?

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

- Agree a lot Agree a little
Disagree a little
Disagree a lot
- a) I feel comfortable using computers in my teaching ---- (1) — (2) — (3) — (4)
- b) When I have technical problems, I have ready access to computer support staff in my school ----- (1) — (2) — (3) — (4)
- c) I receive adequate support for integrating computers in my teaching activities ----- (1) — (2) — (3) — (4)

10

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

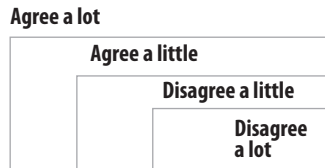
Fill in **one** circle for each line.

- Never or almost never 2 or 3 times per month
1–3 times per week
Daily or almost daily
- a) Discuss how to teach a particular topic ----- (1) — (2) — (3) — (4)
- b) Collaborate in planning and preparing instructional materials ----- (1) — (2) — (3) — (4)
- c) Share what I have learned about my teaching experiences ----- (1) — (2) — (3) — (4)
- d) Visit another classroom to learn more about teaching - (1) — (2) — (3) — (4)
- e) Work together to try out new ideas ----- (1) — (2) — (3) — (4)

11

How much do you agree with the following statements?

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



- a) I am content with my profession as a teacher ----- (1) — (2) — (3) — (4)
- b) I am satisfied with being a teacher at this school ----- (1) — (2) — (3) — (4)
- c) I had more enthusiasm when I began teaching than I have now ----- (1) — (2) — (3) — (4)
- d) I do important work as a teacher ----- (1) — (2) — (3) — (4)
- e) I plan to continue as a teacher for as long as I can ---- (1) — (2) — (3) — (4)
- f) I am frustrated as a teacher --- (1) — (2) — (3) — (4)

12

How many students are in this class?

_____ students
Write in a number.

13

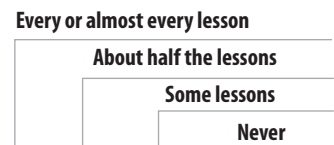
How many eighth-grade students experience difficulties understanding spoken English?

_____ students in this class
Write in a number.

14

How often do you do the following in teaching this class?

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



- a) Summarize what students should have learned from the lesson ----- (1) — (2) — (3) — (4)
- b) Relate the lesson to students' daily lives ----- (1) — (2) — (3) — (4)
- c) Use questioning to elicit reasons and explanations ----- (1) — (2) — (3) — (4)
- d) Encourage all students to improve their performance --- (1) — (2) — (3) — (4)
- e) Praise students for good effort ----- (1) — (2) — (3) — (4)
- f) Bring interesting materials to class ----- (1) — (2) — (3) — (4)

15

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

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

		Not applicable			
			Not at all		
				Some	
					A lot
a) Students lacking prerequisite knowledge or skills -----	①	②	③	④	
b) Students suffering from lack of basic nutrition -----	①	②	③	④	
c) Students suffering from not enough sleep -----	①	②	③	④	
d) Students with special needs (e.g., physical disabilities, mental or emotional/psychological impairment) ----	①	②	③	④	
e) Disruptive students -----	①	②	③	④	
f) Uninterested students -----	①	②	③	④	

16

For the typical student in this class, how often do you do these things?

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

			At least once a week			
				Once or twice a month		
					4–6 times a year	
						1–3 times a year
						Never
a) Meet or talk individually with the student's parents to discuss his/her learning progress -----	①	②	③	④	⑤	
b) Send home a progress report on the student's learning -----	①	②	③	④	⑤	

Questions 17-19 ask about mathematics instruction for the eighth-grade students in the TIMSS class.

17

In a typical week, how much time do you spend teaching mathematics to the students in this class?

_____ hours and _____ minutes per week
Write in the hours and minutes.

18

In teaching mathematics to this class, how confident do you feel to do the following?

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

Very confident
Somewhat confident
Not confident

- a) Answer students' questions about mathematics ----- (1) — (2) — (3)
- b) Show students a variety of problem solving strategies ---- (1) — (2) — (3)
- c) Provide challenging tasks for capable students ----- (1) — (2) — (3)
- d) Adapt my teaching to engage students' interest ----- (1) — (2) — (3)
- e) Help students appreciate the value of learning mathematics ----- (1) — (2) — (3)

19

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

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

Every or almost every lesson
About half the lessons
Some lessons
Never

- a) Listen to me explain how to solve problems ----- (1) — (2) — (3) — (4)
- b) Memorize rules, procedures, and facts ----- (1) — (2) — (3) — (4)
- c) Work problems (individually or with peers) with my guidance ----- (1) — (2) — (3) — (4)
- d) Work problems together in the whole class with direct guidance from me ----- (1) — (2) — (3) — (4)
- e) Work problems (individually or with peers) while I am occupied by other tasks ----- (1) — (2) — (3) — (4)
- f) Apply facts, concepts, and procedures to solve routine problems ----- (1) — (2) — (3) — (4)
- g) Explain their answers ----- (1) — (2) — (3) — (4)
- h) Relate what they are learning in mathematics to their daily lives ----- (1) — (2) — (3) — (4)
- i) Decide on their own procedures for solving complex problems ----- (1) — (2) — (3) — (4)
- j) Work on problems for which there is no immediately obvious method of solution ----- (1) — (2) — (3) — (4)
- k) Take a written test or quiz ----- (1) — (2) — (3) — (4)

20

What mathematics course are you teaching to the TIMSS class?

Fill in **one** circle only.

- a) Basic or general eighth-grade math (not algebra or pre-algebra)----- ①
- b) Pre-algebra or introduction to algebra ----- ②
- c) Two-year pre-algebra----- ③
- d) Algebra I (one-year course) ----- ④
- e) Algebra I (first year of a two-year Algebra I course) ----- ⑤
- f) Algebra I (second year of two-year Algebra I course) ----- ⑥
- g) Geometry ----- ⑦
- h) Algebra II ----- ⑧
- i) Integrated or sequential math----- ⑨
- j) Other math class ----- ⑩

Questions 21–23 ask about resources for teaching mathematics to the eighth-grade students in the TIMSS class.

21

When you teach mathematics to this class, how do you use the following resources?

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

	Basis for instruction	Supplement	Not used
a) Textbooks -----	①	②	③
b) Workbooks or worksheets -----	①	②	③
c) Concrete objects or materials that help students understand quantities or procedures -----	①	②	③
d) Computer software for mathematics instruction -----	①	②	③

22

A. Are the students in this class permitted to use calculators during mathematics lessons?

Fill in **one** circle only.

Yes, with unrestricted use --- ①

Yes, with restricted use --- ②

No, calculators are not permitted - ③

(If No, go to #23)

If Yes,

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

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

	Every or almost every lesson	About half the lessons	Some lessons	Never
a) Check answers -----	①	②	③	④
b) Do routine computations -----	①	②	③	④
c) Solve complex problems -----	①	②	③	④
d) Explore number concepts -----	①	②	③	④

23

A. Do the students in this class have computer(s) available to use during their mathematics lessons?

Fill in **one** circle only.

Yes--- (1)

No--- (2) 

(If No, go to #24)

If Yes,

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

Fill in **one** circle only.

Yes--- (1)

No--- (2)

C. How often do you have the students do the following computer activities during mathematics lessons?

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

Every or almost every day

Once or twice a week

Once or twice a month

Never or almost never

a) Explore mathematics principles and concepts ----- (1) — (2) — (3) — (4)

b) Practice skills and procedures ----- (1) — (2) — (3) — (4)

c) Look up ideas and information ----- (1) — (2) — (3) — (4)

d) Process and analyze data ----- (1) — (2) — (3) — (4)

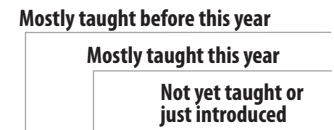
Mathematics Topics Taught

Questions 24–25 ask about the topics taught and the content covered in teaching mathematics to the eighth-grade students in the TIMSS class.

24

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



A. Number

- a) Computing, estimating, or approximating with whole numbers ----- ① — ② — ③
- b) Concepts of fractions and computing with fractions ----- ① — ② — ③
- c) Concepts of decimals and computing with decimals ----- ① — ② — ③
- d) Representing, comparing, ordering, and computing with integers ----- ① — ② — ③
- e) Problem solving involving percents and proportions ----- ① — ② — ③

B. Algebra

- a) Numeric, algebraic, and geometric patterns or sequences (extension, missing terms, generalization of patterns) ----- ① — ② — ③
- b) Simplifying and evaluating algebraic expressions ----- ① — ② — ③
- c) Simple linear equations and inequalities ----- ① — ② — ③
- d) Simultaneous (two variables) equations ----- ① — ② — ③
- e) Representation of functions as ordered pairs, tables, graphs, words, or equations ----- ① — ② — ③

C. Geometry

- a) Geometric properties of angles and geometric shapes (triangles, quadrilaterals, and other common polygons) ----- ① — ② — ③
- b) Congruent figures and similar triangles ----- ① — ② — ③
- c) Relationship between three-dimensional shapes and their two-dimensional representations ----- ① — ② — ③
- d) Using appropriate measurement formulas for perimeters, circumferences, areas, surface areas, and volumes ----- ① — ② — ③
- e) Points on the Cartesian plane ----- ① — ② — ③
- f) Translation, reflection, and rotation ----- ① — ② — ③

D. Data and Chance

- a) Reading and displaying data using tables, pictographs, bar graphs, pie charts, and line graphs ----- ① — ② — ③
- b) Interpreting data sets (e.g., draw conclusions, make predictions, and estimate values between and beyond given data points) ----- ① — ② — ③
- c) Judging, predicting, and determining the chances of possible outcomes ----- ① — ② — ③

25

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

Write in the percentage for each.

- a) Number (e.g., whole numbers, fractions, decimals, ratio, proportion and percent)----- _____%
- b) Algebra (e.g., patterns, equations, formulas and relationships) ----- _____%
- c) Geometry (e.g., lines and angles, shapes, congruence and similarity, spatial relationships, symmetry and transformations)----- _____%
- d) Data and chance (e.g., reading, organizing and representing data, data interpretation and chance)----- _____%
- e) Other ----- _____%


Total = 100%

Question 26 asks about mathematics homework for the eighth-grade students in the TIMSS class.

26

A. How often do you usually assign mathematics homework to the students in this class?

Fill in **one** circle only.

I do not assign mathematics homework --- (1)  (If No, go to #27)

Less than once a week --- (2)

1 or 2 times a week --- (3)

3 or 4 times a week --- (4)

Every day --- (5)

B. When you assign mathematics homework to the students in this 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.

15 minutes or less --- (1)

16–30 minutes --- (2)

31–60 minutes --- (3)

61–90 minutes --- (4)

More than 90 minutes --- (5)

C. How often do you do the following with the mathematics homework assignments for this class?

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



a) Correct assignments and give feedback to students ----- (1) — (2) — (3)

b) Have students correct their own homework ----- (1) — (2) — (3)

c) Discuss the homework in class ----- (1) — (2) — (3)

d) Monitor whether or not the homework was completed ----- (1) — (2) — (3)

e) Use the homework to contribute towards students' grades or marks ----- (1) — (2) — (3)

Questions 27–29 ask about mathematics assessment for the eighth-grade students in the TIMSS class.

27

How much emphasis do you place on the following sources to monitor students' progress in mathematics?

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

- Major emphasis**
Some emphasis
Little or no emphasis
- a) Evaluation of students' ongoing work ----- ① — ② — ③
- b) Classroom tests (for example, teacher-made or textbook tests) ----- ① — ② — ③
- c) State or district achievement tests ----- ① — ② — ③

28

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

Fill in **one** circle only.

- About once a week --- ①
- About every two weeks --- ②
- About once a month --- ③
- A few times a year --- ④
- Never --- ⑤

29

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

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

- Always or almost always**
Sometimes
Never or almost never
- a) Questions based on recall of facts and procedures ----- ① — ② — ③
- b) Questions involving application of mathematical procedures ----- ① — ② — ③
- c) Questions involving searching for patterns and relationships ----- ① — ② — ③
- d) Questions requiring explanations or justifications ----- ① — ② — ③

30

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

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

- | | Yes | | No |
|---|-----|---|----|
| a) Mathematics content ----- | ① | — | ② |
| b) Mathematics pedagogy/instruction ----- | ① | — | ② |
| c) Mathematics curriculum ----- | ① | — | ② |
| d) Integrating information technology
into mathematics ----- | ① | — | ② |
| e) Improving students' critical thinking or
problem solving skills ----- | ① | — | ② |
| f) Mathematics assessment ----- | ① | — | ② |
| g) Addressing individual students' needs ----- | ① | — | ② |

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

If a topic is not in the eighth-grade curriculum or you are not responsible for teaching this topic you may choose "Not applicable."

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

	Not applicable	Very well prepared	Somewhat prepared	Not well prepared
A. Number				
a) Computing, estimating, or approximating with whole numbers -----	①	②	③	④
b) Concepts of fractions and computing with fractions -----	①	②	③	④
c) Concepts of decimals and computing with decimals -----	①	②	③	④
d) Representing, comparing, ordering, and computing with integers -----	①	②	③	④
e) Problem solving involving percents and proportions -----	①	②	③	④
B. Algebra				
a) Numeric, algebraic, and geometric patterns or sequences (extension, missing terms, generalization of patterns) -----	①	②	③	④
b) Simplifying and evaluating algebraic expressions -----	①	②	③	④
c) Simple linear equations and inequalities -----	①	②	③	④
d) Simultaneous (two variables) equations -----	①	②	③	④
e) Representation of functions as ordered pairs, tables, graphs, words, or equations -----	①	②	③	④
C. Geometry				
a) Geometric properties of angles and geometric shapes (triangles, quadrilaterals, and other common polygons) -----	①	②	③	④
b) Congruent figures and similar triangles -----	①	②	③	④
c) Relationship between three-dimensional shapes and their two-dimensional representations -----	①	②	③	④
d) Using appropriate measurement formulas for perimeters, circumferences, areas, surface areas, and volumes -----	①	②	③	④
e) Points on the Cartesian plane -----	①	②	③	④
f) Translation, reflection, and rotation -----	①	②	③	④
D. Data and Chance				
a) Reading and displaying data using tables, pictographs, bar graphs, pie charts, and line graphs -----	①	②	③	④
b) Interpreting data sets (e.g., draw conclusions, make predictions, and estimate values between and beyond given data points) -----	①	②	③	④
c) Judging, predicting, and determining the chances of possible outcomes -----	①	②	③	④

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Thank You

Thank you for the thought, time, and effort you have put into completing this questionnaire.



BOSTON
COLLEGE

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TIMSS 2011

Teacher Questionnaire Mathematics

Grade 8



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Educational Achievement