Identification Label



TRENDS IN INTERNATIONAL MATHEMATICS AND SCIENCE STUDY

Teacher Questionnaire Mathematics

<Grade 8>

<TIMSS National Research Center Name> <Address>



Teacher Questionnaire

Your school has agreed to participate in TIMSS 2015 (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 almost 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 secondary education in <country>.

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 <country>. 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 35 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 place it in the accompanying envelope and return it to:

<Insert country-specific information here>.

Thank you.

TIMSS 2015

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By the end of this school year, how many years will you have been teaching altogether?	What is the <u>highest</u> level of have completed?	formal education you
years	Cr	eck one circle only.
Please round to the nearest whole number.	Did not complete < Upper seconda education—ISCED Level 3	ry > (
	Upper secondary education— ISCED Level 3	
Are you female or male?		you have not completed
Check one circle only.		oost-secondary or tertiary lucation>, go to #6)
Female Male	<post-secondary, non-tertia<br="">education—ISCED Level 4</post-secondary,>	
	<short-cycle tertia<br="">education—ISCED Level 5</short-cycle>	
How old are you?	<bachelor's equivale<br="" or="">level—ISCED Level 6</bachelor's>	
Check one circle only.	<master's equivale<br="" or="">level—ISCED Level 7</master's>	
Under 25 🔘	<doctor equivale<="" or="" td=""><td></td></doctor>	
25–29 🔘	level—ISCED Level 8	> ()
30–39 🔘		
40–49 🔘	5	
50–59 🔘	During your <post-seconda your <u>major or main</u> area(s)</post-seconda 	•
60 or more		•
	Ci	eck one circle for each line. Yes
		No
	a) Mathematics	
	b) Biology	
	c) Physics	
	d) Chemistry	
	e) <earth science=""></earth>	
	f) Education—Mathematics	0 0
	g) Education—Science	
	h) Education—General	
	1) Luucation—denetal	0=0

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

Check one circle for each line. Check one circle for each line. Very high Very high High High Medium Medium Low Low Very Very low low k) Students' desire to do a) Teachers' understanding of well in school ----the school's curricular goals --- () — () b) Teachers' degree of I) Students' ability to reach school's academic goals ----success in implementing the school's curriculum ----m) Students' respect for c) Teachers' expectations classmates who excel in school ----for student achievement ----- () — () — () d) Teachers working together n) Clarity of the school's to improve student educational objectives -----()—()—() achievement ----o) Collaboration between e) Teachers' ability to school leadership and inspire students ----teachers to plan instruction --- () — () — () — () f) Parental involvement p) Amount of instructional in school activities ----support provided to teachers by school leadership ----g) Parental commitment to ensure that students are q) School leadership's ready to learn ----- support for teachers' professional development ----- — — — — — h) Parental expectations for student achievement ----i) Parental support for student achievement ----j) Parental pressure for the school to maintain high academic standards -----()—()—()—()

School Environment

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

Check **one** circle for each line.

		Agre	e a lot		
			Agree	a little	
				Disagre	e a little
					Disagree a lot
a)	This school is located in a safe neighborhood	- 🔾 –	-0-		
b)	I feel safe at this school	- () -	-0-	· O — (\supset
c)	This school's security policies and practices are sufficient	- () -	-0-	· ()—(\supset
d)	The students behave in an orderly manner	- () -	-0-	· ()—(\supset
e)	The students are respectful of the teachers	- () -	-0-		\sim
f)	The students respect school property	- () -	-0-	· (\sim
g)	This school has clear rules about student conduct	- () -	-0-	· ()—(\supset
h)	This school's rules are enforced in a fair and consistent manner			\cap	$\overline{}$

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In your current school, how severe is each problem?

		Not a problem	
		Minor pr	oblem
			Moderate problem
			Serious problem
a)	The school building needs significant repair	0-0-0	
b)	Teachers do not have adequate workspace (e.g., for preparation, collaboration, or meeting with students)	0-0-0)-0
c)	Teachers do not have adequate instructional materials and supplies	0-0-0)-0
d)	The school classrooms are not cleaned often enough	0-0-0)-0
e)	The school classrooms need maintenance work	0-0-0)-()
f)	Teachers do not have adequate technological resources	0-0-0)-0
g)	Teachers do not have adequate support for using technology)-()

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

Check **one** circle for each line.

		Very o	often	
			Often	
				Sometimes
				Neve almo neve
ĉ	a) Discuss how to teach a particular topic	-	<u> </u>	$\bigcirc -\bigcirc$
k	o) Collaborate in planning and preparing instructional materials	- () –	· O –	0-0
(c) Share what I have learned about my teaching experiences	-	· O —	$\bigcirc -\bigcirc$
(d) Visit another classroom to learn more about teaching	-	<u> </u>	$\bigcirc -\bigcirc$
6	e) Work together to try out new ideas	-	-O-	$\bigcirc -\bigcirc$
f	Work as a group on implementing the curriculum	- () –	· O –	0-0
Ç	 Work with teachers from other grades to ensure continuity in learning 	-	-O-	0-0

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How often do you feel the following way about being a teacher?

Very of	ften
	Often
	Sometimes
	Never or almost never
a) I am content with my profession as a teacher	0-0-0
b) I am satisfied with being a teacher at this school	0-0-0
c) I find my work full of meaning and purpose —	0-0-0
d) I am enthusiastic about my job —	0-0-0
e) My work inspires me —	$\bigcirc -\bigcirc -\bigcirc$
f) I am proud of the work I do —	0-0-0
g) I am going to continue teaching for as long as I can —	0-0-0

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Indicate the extent to which you agree or disagree with each of the following statements.

		Agree a lot	
		Agree a li	ttle
		1	Disagree a little
			Disagree a lot
a)	There are too many students in the classes)-0
b)	I have too much material to cover in class	0-0-0)-0
c)	I have too many teaching hours	0-0-0)-()
d)	I need more time to prepare for class	0-0-0)-()
e)	I need more time to assist individual students	0-0-0)-()
f)	I feel too much pressure from parents	0-0-0)-()
g)	I have difficulty keeping up with all of the changes to the curriculum	0-0-0)-()
h)	I have too many administrative tasks)-()

About Teaching the TIMSS Class

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How many students are in this class?	In your view, to what extent do the following lim how you teach this class?
students	Check one circle for each line.
Write in the number.	Not at all
	Some
	A lot
ow many <eighth grade=""> students experience ficulties understanding <u>spoken</u> <language of<="" th=""><th>a) Students lacking prerequisite knowledge or skills</th></language></eighth>	a) Students lacking prerequisite knowledge or skills
st>?	b) Students suffering from lack of basic nutrition
students in this class rite in the number.	c) Students suffering from not enough sleep
	d) Disruptive students
	e) Uninterested students — — —
ow often do you do the following in teaching this ass?	f) Students with physical disabilities
Check one circle for each line.	g) Students with mental,
Every or almost every lesson About half the lessons	emotional, or psychological disabilities
Some lessons	disabilities
Never	
Relate the lesson to students' daily lives	
Ask students to explain their answers	
Ask students to complete challenging exercises that require them to go beyond the instruction	
Encourage classroom discussions among students	
Link new content to students' prior knowledge — — — — — —	
Ask students to decide their own problem solving procedures	
Encourage students to express their ideas in class — — — — — —	

Teaching Mathematics to the TIMSS Class

	nuch time do you spend s to the students in this class?	In teaching mathematics you ask students to do the	
minute	es per week		Check one circle for each line
Write in the number of minu Please convert the number o			Every or almost every lesson About half the lessons
rease convert the namber of	n nodis into minutes.		Some lessons
			Neve
		a) Listen to me explain new mathematics content	
you characterize your	tics to this class, how would confidence in doing the	b) Listen to me explain how to solve problems	0-0-0
following?	Check one circle for each line.	c) Memorize rules, procedures, and facts	0-0-0
	Very high High Medium	d) Work problems (individually or with peers) with my quidance	<u> </u>
) Inspiring students to learn mathematics	Low	e) Work problems together in the whole class with direct guidance from me	
o) Showing students a variety		f) Work problems (individually or with peers) while I am occupied by other tasks	
 Providing challenging tasks for the highest achieving students 	s O—O—O	g) Work on problems for which there is no immediately obvious method of solution (
d) Adapting my teaching to	0-0-0	h) Take a written test or quiz	
e) Helping students appreciat the value of learning		i) Work in mixed ability groups (
f) Assessing student		j) Work in same ability groups (
mathematics	0-0-0		
g) Improving the understandi of struggling students			
n) Making mathematics	0-0-0		

Using Calculators and Computers for Teaching Mathematics to the TIMSS Class

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

Yes, with unrestricted use --
Yes, with restricted use --
No, calculators are not permitted --
(If No, go to #20)

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

Check one circle for each line.

Every or almost every lesson

About half the lessons

Some lessons

Never

a) Check answers ----
c) Solve complex problems ----
d) Explore number concepts -----

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A. Do the students in this class have computers (including tablets) available to use during their mathematics lessons?

Yes --- (If No, go to #21)

If Yes,	
B. What access do the students have	e to computers?
Check on	e circle for each line.
	Yes
	No
a) Each student has a computer	
b) The class has computers that students can share	
c) The school has computers that the class can use sometimes	
	s during e circle for each line. Imost every day
0	nce or twice a week
	Once or twice a month
	Never or almost never
a) Explore mathematics principles and concepts	
b) Practice skills and procedures - 🔾 — 🤇)-0-0
c) Look up ideas and information)-0-0
d) Process and analyze data)-0-0

Mathematics Topics Taught to the TIMSS Class

21₁

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 <<u>eighth grade</u>>, 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."

	Check one circle for each lin
	Mostly taught before this year
	Mostly taught this year
	Not yet taught or just introduced
A. Number	
a) Computing with whole numbers	
b) Comparing and ordering rational numbers	
c) Computing with rational numbers (fractions, decimals, and integers)	
d) Concepts of irrational numbers	
e) Problem solving involving percents or proportions	
B. Algebra	
a) Simplifying and evaluating algebraic expressions	
b) Simple linear equations and inequalities	
c) Simultaneous (two variables) equations	
d) Numeric, algebraic, and geometric patterns or sequences (extension, missing terms, generalization of patterns)	
e) Representation of functions as ordered pairs, tables, graphs, words, or equations	
f) Properties of functions (slopes, intercepts, etc.)	
C. Geometry	
a) Geometric properties of angles and geometric shapes (triangles, quadrilaterals, and other common polygons)	
b) Congruent figures and similar triangles	
c) Relationship between three-dimensional shapes and their two-dimensional representations	
d) Using appropriate measurement formulas for perimeters, circumferences, areas, surface areas, and volumes	
e) Points on the Cartesian plane	
f) Translation, reflection, and rotation	
D. Data and Chance	
a) Characteristics of data sets (mean, median, mode, and shape of distributions)	
b) Interpreting data sets (e.g., draw conclusions, make predictions, and estimate values between and beyond given data points)	
c) Judging, predicting, and determining the chances of possible outcomes	

Mathematics Homework for the TIMSS Class

Mathematics Assessment of the TIMSS Class

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

Check **one** circle only.

I do not assign mathematics homework
(Go to #23)
Less than once a week
1 or 2 times a week
3 or 4 times a week
Every day 🔘

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.)

Check **one** circle only.

15 minutes or less	\bigcirc
16–30 minutes	\bigcirc
31–60 minutes	\bigcirc
61–90 minutes	\bigcirc
More than 90 minutes	\bigcirc

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

	Check one circle for each line.
	Always or almost always
	Sometimes
	Never or almost never
a)	Correct assignments and give feedback to students
b)	Have students correct their own homework
c)	Discuss the homework in class
d)	Monitor whether or not the homework was completed — — —
e)	Use the homework to contribute towards

students' grades or marks ----- — — — —

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

check one chele for each inte.				
	Major emphasis			
	Some emphasis			
	Little or no emphasis			
a) Assessment of students' ongoing work				
b) Classroom tests (for example, teacher-made or textbook tests)				
c) National or regional achievement tests				

Preparation to Teach Mathematics

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

Check **one** circle for each line.

	Yes
	No
a) Mathematics content	$)-\dot{\bigcirc}$
b) Mathematics pedagogy/instruction ($\bigcirc -\bigcirc$
c) Mathematics curriculum	$\bigcirc -\bigcirc$
d) Integrating information technology into mathematics)-()
e) Improving students' critical thinking or problem solving skills)-()
f) Mathematics assessment ($)-\bigcirc$
g) Addressing individual students' needs	$\bigcirc -\bigcirc$

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In the past two years, how many hours in total have you spent in formal <in-service/professional development> (e.g., workshops, seminars, etc.) for mathematics?

Check	one	circ	ما	on	W

None 〇
Less than 6 hours 🔘
6–15 hours 🔘
16–35 hours 🔘
More than 35 hours 〇

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How well prepared do you feel you are to teach the following mathematics topics? If a topic is not in the <<u>eighth grade</u>> curriculum or you are not responsible for teaching this topic, please choose "Not applicable."

Check one circle for each line. Not applicable Very well prepared Somewhat prepared Not well prepared A. Number a) Computing with whole numbers -----b) Comparing and ordering rational numbers ----c) Computing with rational numbers (fractions, decimals, and integers) -----d) Concepts of irrational numbers ----- — — — — e) Problem solving involving percents or proportions ------B. Algebra a) Simplifying and evaluating algebraic expressions -----b) Simple linear equations and inequalities ----c) Simultaneous (two variables) equations ----d) Numeric, algebraic, and geometric patterns or sequences (extension, missing terms, generalization of patterns) ------ — — — — e) Representation of functions as ordered pairs, tables, graphs, words, or equations -----f) Properties of functions (slopes, intercepts, etc.) -----C. Geometry a) Geometric properties of angles and geometric shapes (triangles, quadrilaterals, and other common polygons) ------b) Congruent figures and similar triangles ----c) Relationship between three-dimensional shapes and their two-dimensional representations------ — — — — — — d) Using appropriate measurement formulas for perimeters, circumferences, areas, surface areas, and volumes ------ — — — — e) Points on the Cartesian plane-----f) Translation, reflection, and rotation ------ — — — — — — D. Data and Chance a) Characteristics of data sets (mean, median, mode, and shape of distributions) -----b) Interpreting data sets (e.g., draw conclusions, make predictions, and estimate values between and beyond given data points)-----c) Judging, predicting, and determining the chances of possible outcomes------

Thank You

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



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<Grade 8>

