TIMSS 2007 Mathematics Curriculum Questionnaire

Mathematics Curriculum and Instruction in Middle/Lower Secondary Schools

1. Does your country have a national curriculum that covers mathematics instruction at the eighth grade of formal 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 eighth grade of formal schooling?

If Yes…
Comments:

2. What is the grade-to-grade structure of the middle/lower secondary school curriculum that covers mathematics instruction (e.g., grades 1-8; grades 4-8; grades 6-8; grades 7-9)?

Comments:

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

Refers to the national curriculum that covers mathematics instruction at the eighth grade of formal 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 eighth grade of formal 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 eighth grade of formal 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 8 mathematics?

*Check **one** circle only.*

Yes--- ○

No--- ○

Refers to the national curriculum that covers mathematics instruction at the eighth grade of formal 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 8 mathematics?

*Check **one** circle only.*

Yes--- ○

No--- ○

Refers to the national curriculum that covers mathematics instruction at the eighth grade of formal 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----------	○	○	○	○
h) Deriving formal proofs----------	○	○	○	○

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Comments:

9. According to the national mathematics curriculum, what proportion of grade 8 students should have been taught each of the following topics or skills by the end of grade 8?

   Across grades K-12, 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 8. If there are not any specifications to this detail, please indicate national expectations to the best of your ability.

   If part of a topic does not apply (e.g., factorization in part A topic (a)), please explain in the comment field.

	Proportion of grade 8 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 (top track)**	**Not included in the curriculum through grade 8**	
A. Number				
a) Whole numbers including place value, factorization, and the four operations----------	○	○	○	_____
b) Computations, estimations, or approximations involving whole numbers----------	○	○	○	_____
c) Common fractions including equivalent fractions and ordering of fractions----------	○	○	○	_____
d) Decimal including place value, ordering, and converting to common fractions (and vice versa)------	○	○	○	_____
e) Representing decimals and fractions using words, numbers, or models (including number lines)-------	○	○	○	_____

f) Computations with fractions--		_____
g) Computations with decimals--		_____
h) Representing, comparing, ordering, and computing with integers----------		_____
i) Ratios (equivalence, division of a quantity by a given ratio)-		_____
j) Conversion of percents to fractions or decimals and vice versa----------		_____

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Comments:

	Proportion of grade 8 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 (top track)**	**Not included in the curriculum through grade 8**	
B. Algebra				
a) Numeric, algebraic, and geometric patterns or sequences (extension, missing terms, generalization of patterns)----------	○	○	○	_____
b) Sums, products, and powers of expressions containing variables----------	○	○	○	_____
c) Evaluating expressions for given numeric value----------	○	○	○	_____
d) Simplifying or comparing algebraic expressions----------	○	○	○	_____
e) Modeling situations using expressions----------	○	○	○	_____
f) Evaluating functions/formulas for given values of the variables----------	○	○	○	_____
g) Simple linear equations and inequalities, and simultaneous (two variables) equations------	○	○	○	_____
h) Equivalent representations of functions as ordered pairs, tables, graphs, words, or equations----------	○	○	○	_____

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Comments:

	Proportion of grade 8 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 (top track)**	**Not included in the curriculum through grade 8**	
C. Geometry				
a) Angles – acute, right, straight, obtuse, reflex----------	○	○	○	_____
b) Relationships for angles at a point, angles on a line, vertically opposite angles, angles associated with a transversal cutting parallel lines, and perpendicularity----	○	○	○	_____
c) Properties of geometric shapes: triangles, quadrilaterals, and other common polygons----------	○	○	○	_____
d) Construct or draw triangles and rectangles of given dimensions----------	○	○	○	_____
e) Congruent figures (triangles, quadrilaterals) and their corresponding measures-------	○	○	○	_____
f) Similar triangles and recall their properties----------	○	○	○	_____
g) Relationships between two-dimensional and three-dimensional shapes----------	○	○	○	_____
h) Pythagorean theorem (not proof) to find length of a side	○	○	○	_____
i) Measurement, drawing, and estimation of the size of angles, the length of lines, areas, and volumes----------	○	○	○	_____

j) Measurement formulas for perimeters, circumferences, areas of circles, surface areas, and volumes----------		_____
k) Measures of irregular or compound areas (e.g., by covering with grids or dissecting and rearranging pieces)----------		_____
l) Cartesian plane – ordered pairs, equations, intercepts, intersections, and gradient-----		_____
m) Line and rotational symmetry for two-dimensional shapes---		_____
n) Translation, reflection, and rotation----------		_____

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Comments:

	Proportion of grade 8 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 (top track)**	**Not included in the curriculum through grade 8**	
D. Data and Chance				
a) Reading data from tables, pictographs, bar graphs, pie charts, and line graphs---------	○	○	○	_____
b) Organizing and displaying data using tables, pictographs, bar graphs, pie charts, and line graphs----------	○	○	○	_____
c) Characteristics of data sets including mean, median, range, and shape of distribution (in general terms)	○	○	○	_____
d) Interpreting data sets (e.g., draw conclusions, make predictions, and estimate values between and beyond given data points)----------	○	○	○	_____
e) Data display that could lead to misinterpretation (e.g., inappropriate grouping and misleading or distorted scales)----------	○	○	○	_____
f) Using data from experiments to predict chances of future outcomes----------	○	○	○	_____
g) Using the chances of a particular outcome to solve problems----------	○	○	○	_____

Refers to the national curriculum that covers mathematics instruction at the eighth grade of formal 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 eighth grade of formal 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 eighth grade of formal 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 eighth grade of formal schooling?

[ ] hours and [ ] minutes

b) What percentage of total instructional time is supposed to be devoted to **mathematics** instruction at the eighth grade of formal schooling?

[ ] % of total
Write in a number

Comments:

c) Is there a policy to assign mathematics homework at the eighth grade of formal schooling?

*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 eighth grade of formal schooling?

*Check **one** circle only.*

Yes--- ○

No--- ○

If Yes…
What is the policy?

If No…
Comments:

14. Which are the current requirements for being a middle/lower secondary 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 eighth grade.

Comments:

15. Is there a process to license or certify middle/lower secondary grade teachers?

*Check **one** circle only.*

Yes--- ○

No--- ○

Refers to the requirements encompassing eighth grade.

If Yes…
Who certifies/licenses middle/lower secondary 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 eighth-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 1998-1999?

   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 1998-1999? (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