

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-----	<input type="radio"/>	<input checked="" type="radio"/>
b) Processes or methods-----	<input type="radio"/>	<input checked="" type="radio"/>
c) Materials-----	<input type="radio"/>	<input checked="" type="radio"/>
d) Percentage of students reaching defined goals-----	<input type="radio"/>	<input checked="" type="radio"/>
e) Other-----	<input type="radio"/>	<input checked="" type="radio"/>
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-----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b) Understanding mathematical concepts and principles-----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c) Applying mathematics in real-life contexts-----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d) Communicating mathematically-----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e) Reasoning mathematically-----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f) Incorporating the experiences of different ethnic/cultural groups-----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g) Integrating mathematics with other subjects-----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
h) Deriving formal proofs-----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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:

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			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	
<i>Check one circle for each line.</i>				
A. Number				
a) Whole numbers including place value, factorization, and the four operations-----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
b) Computations, estimations, or approximations involving whole numbers-----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
c) Common fractions including equivalent fractions and ordering of fractions-----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
d) Decimal including place value, ordering, and converting to common fractions (and vice versa)-----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
e) Representing decimals and fractions using words, numbers, or models (including number lines)-----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____

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:

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	All or almost all students	Only the more able students (top track)	Not included in the curriculum through grade 8	
<i>Check one circle for each line.</i>				
B. Algebra				
a) Numeric, algebraic, and geometric patterns or sequences (extension, missing terms, generalization of patterns)-----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
b) Sums, products, and powers of expressions containing variables-----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
c) Evaluating expressions for given numeric value-----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
d) Simplifying or comparing algebraic expressions-----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
e) Modeling situations using expressions-----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
f) Evaluating functions/formulas for given values of the variables-----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
g) Simple linear equations and inequalities, and simultaneous (two variables) equations-----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
h) Equivalent representations of functions as ordered pairs, tables, graphs, words, or equations-----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____

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Comments:

	Proportion of grade 8 students expected to be taught topic			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	
<i>Check one circle for each line.</i>				
C. Geometry				
a) Angles – acute, right, straight, obtuse, reflex-----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
b) Relationships for angles at a point, angles on a line, vertically opposite angles, angles associated with a transversal cutting parallel lines, and perpendicularity----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
c) Properties of geometric shapes: triangles, quadrilaterals, and other common polygons-----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
d) Construct or draw triangles and rectangles of given dimensions-----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
e) Congruent figures (triangles, quadrilaterals) and their corresponding measures-----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
f) Similar triangles and recall their properties-----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
g) Relationships between two-dimensional and three-dimensional shapes-----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
h) Pythagorean theorem (not proof) to find length of a side	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
i) Measurement, drawing, and estimation of the size of angles, the length of lines, areas, and volumes-----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____

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			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	
<i>Check one circle for each line.</i>				
D. Data and Chance				
a) Reading data from tables, pictographs, bar graphs, pie charts, and line graphs-----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
b) Organizing and displaying data using tables, pictographs, bar graphs, pie charts, and line graphs-----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
c) Characteristics of data sets including mean, median, range, and shape of distribution (in general terms)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
d) Interpreting data sets (e.g., draw conclusions, make predictions, and estimate values between and beyond given data points)-----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
e) Data display that could lead to misinterpretation (e.g., inappropriate grouping and misleading or distorted scales)-----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
f) Using data from experiments to predict chances of future outcomes-----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
g) Using the chances of a particular outcome to solve problems-----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____

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-----	<input type="radio"/>	<input type="radio"/>
b) Ministry notes and directives-----	<input type="radio"/>	<input type="radio"/>
c) Mandated or recommended textbooks-----	<input type="radio"/>	<input type="radio"/>
d) Instructional or pedagogical guide-----	<input type="radio"/>	<input type="radio"/>
e) Specifically developed or recommended instructional activities----	<input type="radio"/>	<input type="radio"/>
f) Other-----	<input type="radio"/>	<input type="radio"/>

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-----	<input type="radio"/>	<input checked="" type="radio"/>
b) Pre-practicum during teacher education program-----	<input type="radio"/>	<input checked="" type="radio"/>
c) Supervised practicum in the field-----	<input type="radio"/>	<input checked="" type="radio"/>
d) Passing a certification examination-----	<input type="radio"/>	<input checked="" type="radio"/>
e) Completion of a probationary teaching period-----	<input type="radio"/>	<input checked="" type="radio"/>
<i>If Yes...</i> How long is this period? _____		
f) Completion of a mentoring or induction program-----	<input type="radio"/>	<input checked="" type="radio"/>
g) Other-----	<input type="radio"/>	<input checked="" type="radio"/>
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-----	<input checked="" type="radio"/>	<input type="radio"/>
b) National/state licensing board-----	<input type="radio"/>	<input checked="" type="radio"/>
c) Universities/colleges-----	<input type="radio"/>	<input checked="" type="radio"/>
d) Teacher organization/union-----	<input type="radio"/>	<input checked="" type="radio"/>
e) Other-----	<input type="radio"/>	<input checked="" type="radio"/>
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----- | <input type="radio"/> | <input type="radio"/> |
| b) Expert teacher/mentor----- | <input type="radio"/> | <input type="radio"/> |
| c) Reduced teaching load for new teachers---- | <input type="radio"/> | <input type="radio"/> |
| d) Other----- | <input type="radio"/> | <input type="radio"/> |

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-----	<input type="radio"/>	<input type="radio"/>
b) Ministry (Department of Education, Government, Board of Education) Website-----	<input type="radio"/>	<input type="radio"/>
c) Printed copies of curriculum distributed to schools-----	<input type="radio"/>	<input type="radio"/>
d) Teachers receive own printed copy-----	<input type="radio"/>	<input type="radio"/>
e) Professional development/in-service education-----	<input type="radio"/>	<input type="radio"/>
f) Ministry Notes-----	<input type="radio"/>	<input type="radio"/>
g) Professional association newsletter-----	<input type="radio"/>	<input type="radio"/>
h) Education journals-----	<input type="radio"/>	<input type="radio"/>
i) Other educational authorities-----	<input type="radio"/>	<input type="radio"/>
j) Other-----	<input type="radio"/>	<input type="radio"/>

Please specify:

Comments:

19. How are parents informed about the mathematics curriculum?

Check **one** circle for each line.

	Yes	No
a) From teachers-----	<input checked="" type="radio"/>	<input type="radio"/>
b) From the school administration-----	<input type="radio"/>	<input checked="" type="radio"/>
c) From public awareness campaigns-----	<input type="radio"/>	<input checked="" type="radio"/>
d) From Ministry Website-----	<input type="radio"/>	<input checked="" type="radio"/>
e) From Ministry brochures and documents-----	<input type="radio"/>	<input checked="" type="radio"/>
f) Through parents' associations/organizations----	<input type="radio"/>	<input checked="" type="radio"/>
g) Other-----	<input type="radio"/>	<input checked="" type="radio"/>
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-----	<input type="radio"/>	<input checked="" type="radio"/>
b) Research programs-----	<input type="radio"/>	<input checked="" type="radio"/>
c) School self-evaluation-----	<input type="radio"/>	<input checked="" type="radio"/>
d) National or regional assessments-----	<input type="radio"/>	<input checked="" type="radio"/>
e) Other-----	<input type="radio"/>	<input checked="" type="radio"/>
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:

