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TIMSS 2019
Curriculum Questionnaire

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TIMSS 2019 Curriculum Questionnaire – Eighth Grade

The TIMSS 2019 Curriculum Questionnaire is designed to collect basic information about the structure of the education system as well as the organization, content, and implementation of the mathematics and/or science curricula in each country.

The questionnaire should be completed by the National Research Coordinators, drawing on the expertise of curriculum specialists and educators. Please submit this questionnaire no later than October 30, 2019.

To begin the questionnaire, please click on the “Next” button. When navigating through the questionnaire, make sure to confirm your responses by clicking on the “Next” or “Previous” button. To go to a particular section or item, please click on the corresponding link in the “Table of Contents.” When you have completed the questionnaire, please make sure to click the “Submit” button to submit your answers.

Please note that the General Module is the same across the fourth and eighth grades, and therefore National Research Coordinators of countries participating in TIMSS 2019 at both the fourth and eighth grade are advised to complete the General Module at only one of the grade levels. The Mathematics and Science Modules should be completed at both grade levels.

If you have any questions about the content of this questionnaire, please contact the TIMSS & PIRLS International Study Center at Boston College: timss@bc.edu

If you have any technical questions on how to complete this questionnaire, please contact the IEA Hamburg (TIMSS email account): tmss@iea-hamburg.de

Table of Contents

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TIMSS 2019 Curriculum Questionnaire – Eighth Grade - GENERAL MODULE

To be completed by all countries participating in TIMSS

Please note: if you already have completed the General Module of the Grade 4 Curriculum Questionnaire, please skip the General Module using the Table of Contents.
TIMSS 2019 Curriculum Questionnaire – Eighth Grade - Grade Structure and Student Flow

G1. What is your country’s name for the grade(s) tested in TIMSS 2019, in English (e.g., grade 4, grade 8)?

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G2. A. In your country, what is the stated official policy or regulation on students’ age of entry to primary school (ISCED Level 1)?

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.”

B. If the official policy allows some parental discretion or choice, please describe the usual practice.

Example: “Even though the official policy is that students can begin school in the year when they turn 6 years old, children typically begin primary school at age 7 because their parents feel they will benefit from being more mature.”
G3. A. Has the stated official policy changed in the last 10 years?
Check one circle only:

- Yes
- No

If Yes....
B. How did the policy change, and what is the status of implementation?
G4. What are the ages (or grades) of compulsory education in your country?

Example: "Ages 6-16 (or Grades 1-9)."
G5. Beginning with ISCED Level 1, what grades of schooling are provided to students through ISCED Level 3 (upper secondary)?

Example: "Grades 1-12"
G6. Does your country have a policy on the promotion and retention of students across grades 1-8?

Example: “Automatic promotion for grades 1-5, dependent on academic progress for grades 6-8.”

Check one circle only:
- Yes
- No

Please describe:
TIMSS 2019 Curriculum Questionnaire – Eighth Grade - Grade Structure and Student Flow

G7. Does your country have a nationally mandated number of school days per year?

Check one circle only:

- YES
- NO

Please describe:

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G8. A. State the official language(s) and describe the major language subgroups.

B. Describe the languages of instruction for mathematics and science in the fourth and eighth grades. For example, is the instruction in these grades for these subjects presented to the students in their native language or in a second language?
Early Childhood Education

Early childhood education (ISCED Level 0) is subdivided into:
- Early childhood educational development (ECED) programs for children under age 3; and
- Pre-primary education (PPE) programs including Kindergarten for children age 3 or older.

G9. A. Does your country provide universal ECED or PPE coverage?
Programs with universal coverage are accessible and available to all children, although in some cases parents may choose not to enroll their children.

Check one circle for each line:

- a) ECED programs for children under age 3
- b) PPE programs for children age 3 or older

B. How many years can children attend these programs altogether?
Check one circle only:
- 1 year
- 2 years
- 3 years
- 4 or more years

Comments:
C. Does your country provide targeted ECED or PPE coverage?

Programs with targeted coverage are only available for certain subgroups (e.g., for children from low-income families, for children whose language spoken at home is different from the national language).

Check one circle for each line.

a) ECED programs for children under age 3  
   Yes ☐  No ☐

b) PPE programs for children age 3 or older  
   Yes ☐  No ☐

Please describe:


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TIMSS 2019 Curriculum Questionnaire – Eighth Grade - Early Childhood Education

Early childhood education (ISCED Level 0) is subdivided into:
• Early childhood educational development (ECED) programs for children under age 3, and
• Pre-primary education (PPE) programs including Kindergarten for children age 3 or older.

G10. A. Does your country have national curriculum guidance documents for ECED or PPE programs?

<table>
<thead>
<tr>
<th>Check one circle for each line</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) ECED programs for children under age 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b) PPE programs for children age 3 or older</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(Continued on Next Page)
If Yes....
B. Do the curriculum guidance documents cover any of the following topic areas?

Check one circle for ECED programs, AND one circle for PPE programs.

<table>
<thead>
<tr>
<th>ECED programs</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>b) Physical development and health education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c) Oral language development and communication skills</td>
<td></td>
<td></td>
</tr>
<tr>
<td>d) Reading and literacy skills</td>
<td></td>
<td></td>
</tr>
<tr>
<td>e) Mathematics and numeracy skills</td>
<td></td>
<td></td>
</tr>
<tr>
<td>f) Science including understanding the natural world (e.g., weather)</td>
<td></td>
<td></td>
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<tr>
<td>g) Other</td>
<td></td>
<td></td>
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</tbody>
</table>

Please specify below:

Comments:

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Examinations

G11. A. Does an educational authority in your country (e.g., National Ministry of Education) administer examinations that have consequences for individual students, such as entry to a higher school system, entry to a university, and/or exiting or graduating from secondary school?

Check one circle only
- Yes
- No

If Yes....
B. Please describe the grades at which the exams are given, the subjects that are assessed, and the purpose of each exam.

Example: "There is an exam including language and mathematics given at the end of grade 8 to determine placement for entry to secondary school."
G12. A. What is the main preparation route(s) for teachers of students in the fourth grade?

Example: “Most teachers receive their education through a university degree program. Some have attended a teacher college program, but that is becoming less common.”
B. According to the main teacher preparation route, what are the current requirements for being a teacher of students in the fourth grade?

Check one circle for each line.

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Supervised practicum during the teacher education program</td>
<td></td>
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<tr>
<td>If yes, how long is this period?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b) Passing a qualifying examination (e.g., licensing, certification)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c) Completion of a probationary teaching period</td>
<td></td>
<td></td>
</tr>
<tr>
<td>If yes, how long is this period?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>d) Completion of a mentoring or induction program (e.g., experienced teachers work with novice teachers to provide instructional guidance)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>e) Other</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Please specify below:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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(Continued on Next Page)
C. Are there additional requirements for teachers of mathematics and science in the fourth grade?

Check one circle only:

- Yes
- No

If Yes...

D. What are they?


E. In the last 10 years, has there been a change in the stated official policy about the requirements for being a teacher of students in the fourth grade?

Check one circle only:

- Yes
- No

If Yes....

F. How did the policy change, and what is the status of implementation?

Example: "A master's degree will be required in 2020; an oral examination has been required since 2013."
G13. A. Is the main preparation route(s) for teachers of students in the *eighth grade* different from the main preparation route(s) at the *fourth grade*?

Check one circle only:

- Yes
- No

If Yes....
B. If the main preparation route(s) for teachers of students in the *eighth grade* is different, what is their main preparation route?
C. If the requirements are different than the fourth grade, what are the current requirements for being a teacher of students in the eighth grade?

Check one circle for each line.

a) Supervised practicum during the teacher education program.
   - Yes
   - No
   If Yes...
   - How long is this period?

b) Passing a qualifying examination (e.g., licensing, certification).
   - Yes
   - No

c) Completion of a probationary teaching period.
   - Yes
   - No
   If Yes...
   - How long is this period?

d) Completion of a mentoring or induction program (e.g., experienced teachers work with novice teachers to provide instructional guidance).
   - Yes
   - No

Other
   - Please specify below:

D. If there are additional requirements for teachers of mathematics and science in the eighth grade that are different than in the fourth grade, what are they?
E. In the last 10 years, has there been a change in the stated official policy about the requirements for being a teacher of students in the eighth grade?

Check one circle only.

- Yes
- No

If Yes....

F. How did the policy change, and what is the status of implementation?
Principal Preparation

G14. A. What is the main preparation route(s) for principals of schools with fourth grade students?

Example: "In addition to receiving their teaching qualifications, most principals have a degree in educational leadership."

B. According to the main principal preparation route, what are the current requirements for being a principal of a school with fourth grade students?

Check one circle for each line:

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Teaching experience</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b) Completion of a specialized school leadership training program (including a school leadership degree program)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c) Other</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Please specify below:

(Continued on Next Page)
C. In the last 10 years, has there been a change in the stated official policy about the requirements for being a principal of a school with fourth grade students?

Check one circle only.

☐ Yes
☐ No

If Yes....

D. How did the policy change, and what is the status of implementation?
G15. A. Is the main preparation route(s) for principals of schools with eighth grade students different from the main preparation route(s) for principals of schools with fourth grade students?

Check one circle only:

☐ Yes
☐ No

If Yes:

B. If the main preparation route(s) for principals of schools with eighth grade students is different, what is their main preparation route?

Example: "In addition to receiving their teaching qualifications, most principals have a degree in educational leadership."

C. According to the main principal preparation route, what are the current requirements for being a principal of a school with eighth grade students?

Check one circle for each line:

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Teaching experience</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b) Completion of a specialized school leadership training program (including a school leadership degree program)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c) Other</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Please specify below:

...
D. In the last 10 years, has there been a change in the stated official policy about the requirements for being a principal of a school with eighth grade students?

Check one circle only.

- Yes
- No

If Yes....
E. How did the policy change, and what is the status of implementation?
TIMSS 2019 Curriculum Questionnaire – Eighth Grade - MATHEMATICS MODULE - GRADE 8

**MATHEMATICS MODULE - GRADE 8**

To be completed by all countries participating in TIMSS at the eighth grade

This mathematics module refers to the national curriculum that was in effect for the eighth grade students assessed in TIMSS 2019—the curriculum that covers mathematics instruction at the eighth grade of formal schooling for the majority of students. If you do not have a national curriculum, please summarize for your state or provincial curricula.
TIMSS 2019 Curriculum Questionnaire – Eighth Grade - About the Eighth Grade Mathematics Curriculum

About the Eighth Grade Mathematics Curriculum

This mathematics module refers to the national curriculum that was in effect for the eighth grade students assessed in TIMSS 2019—the curriculum that covers mathematics instruction at the eighth grade of formal schooling for the majority of students. If you do not have a national curriculum, please summarize for your state or provincial curricula.

M1. 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 Yes...
Comments:

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?

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TIMSS 2019 Curriculum Questionnaire – Eighth Grade - About the Eighth Grade Mathematics Curriculum

M2. A. In what year was the 2018/2019 mathematics curriculum introduced?

Comments (e.g., status of implementation):

(Continued on Next Page)
B. Is the mathematics curriculum currently being revised?

Check one circle only.

- Yes
- No

If Yes...
Please explain:

[Blank space for explanation]

If No...
Comments:

[Blank space for comments]
TIMSS 2019 Curricular Questionnaire - Eighth Grade - Curricular Specifications

**Curriculum Specifications**

This mathematics module refers to the national curriculum that was in effect for the eighth grade students assessed in TIMSS 2019—the curriculum that covers mathematics instruction at the eighth grade of formal schooling for the majority of students. If you do not have a national curriculum, please summarize for your state or provincial curricula.

**M3.** Does the curriculum or any other official document prescribe the percentage of total instructional time to be devoted to mathematics instruction at the eighth grade of formal schooling?

Check one circle only:

- Yes
- No

If Yes...

Please specify the percentage:

Comments:
M4. How is the mathematics curriculum implementation evaluated?

Check one circle for each line

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Visits by inspectors</td>
<td></td>
</tr>
<tr>
<td>b) Research programs</td>
<td></td>
</tr>
<tr>
<td>c) School self-evaluation</td>
<td></td>
</tr>
<tr>
<td>d) National or regional examinations</td>
<td></td>
</tr>
<tr>
<td>e) Other</td>
<td></td>
</tr>
</tbody>
</table>

Please specify below:

Comments:

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Use of Digital Devices

This mathematics module refers to the national curriculum that was in effect for the eighth grade students assessed in TIMSS 2019—the curriculum that covers mathematics instruction at the eighth grade of formal schooling for the majority of students. If you do not have a national curriculum, please summarize for your state or provincial curricula.

M5. A. Does the national curriculum contain statements/policies about the use of digital devices (e.g., computers, tablets, calculators) in grade 8 mathematics instruction?

Check one circle only:

- Yes
- No

If Yes...
What are the statements/policies?
B. Does the national curriculum contain statements/policies about student use of digital devices (e.g., computers, tablets, calculators) in grade 8 mathematics tests or examinations?

Check one circle only.

☐ Yes
☐ No

If Yes...

What are the statements/policies?

Comments:
35

Grade 8
TIMSS & PIRLS
Lynch School of Education
International Study Center

TIMSS 2019 - English
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TIMSS 2019 Curriculum Questionnaire – Eighth Grade - Specialist Mathematics Teachers

[Image of question: M6. At what grade(s) are students first taught by mathematics subject specialists rather than general classroom teachers?]

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Eighth Grade Mathematics Topics Covered

This mathematics module refers to the national curricula that was in effect for the eighth grade students assessed in TIMSS 2019—the curricula that cover mathematics instruction at the eighth grade of formal schooling for the majority of students. If you do not have a national curriculum, please summarize for your state or provincial curricula.

M7. (i) 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?

Be sure to include curriculum expectations for all grades up to and including grade 8. Grades represent years of formal schooling. For example, if "Year 9" in your country corresponds to the eighth year of formal schooling, please choose grade 8.

(ii) Across grades from preprimary through upper secondary education, at what grade(s) are the topics primarily intended to be taught?

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., fractions in part A topic (b)), please explain in the comment field.

<table>
<thead>
<tr>
<th>(i) Proportion of grade 8 students expected to be taught topic</th>
<th>(ii) Grade(s) topic is expected to be taught preprimary (PP) through the end of upper secondary (G12)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Computing with negative numbers</td>
<td>PP G1 G2 G3 G4 G5 G6 G7 G8 G9 G10 G11 G12</td>
</tr>
<tr>
<td>(b) Concepts of fractions and decimals</td>
<td>PP G1 G2 G3 G4 G5 G6 G7 G8 G9 G10 G11 G12</td>
</tr>
<tr>
<td>(c) Solving problems involving proportions and percents</td>
<td>PP G1 G2 G3 G4 G5 G6 G7 G8 G9 G10 G11 G12</td>
</tr>
</tbody>
</table>

Comments:
TIMSS 2019 Curriculum Questionnaire – Eighth Grade - Eighth Grade Mathematics Topics Covered

M7. (continued)
(i) 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?

Be sure to include curriculum expectations for all grades up to and including grade 8. Grades represent years of formal schooling. For example, if “Year 9” in your country corresponds to the eighth year of formal schooling, please choose grade 8.

(ii) Across grades from preprimary through upper secondary education, at what grade(s) are the topics primarily intended to be taught?

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., fractions in part A topic 9), please explain in the comment field.

<table>
<thead>
<tr>
<th>B. Algebra</th>
<th></th>
<th>PP</th>
<th>G1</th>
<th>G2</th>
<th>G3</th>
<th>G4</th>
<th>G5</th>
<th>G6</th>
<th>G7</th>
<th>G8</th>
<th>G9</th>
<th>G10</th>
<th>G11</th>
<th>G12</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Simplifying and evaluating algebraic expressions</td>
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<tr>
<td>b) Simple linear equations</td>
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<td>c) Simple linear inequalities</td>
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<td>d) Simultaneous (two variables) equations</td>
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<td>e) Representation of linear and quadratic functions in tables, graphs,</td>
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<tr>
<td>words, or equations</td>
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<td>f) Properties of functions (slopes, intercepts, etc.)</td>
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<tr>
<td>g) Numeric, algebraic, and geometric patterns or sequences (extension,</td>
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<tr>
<td>missing terms, generalization of patterns)</td>
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</tbody>
</table>

Comments:

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TIMSS 2019 Curriculum Questionnaire – Eighth Grade: Eighth Grade Mathematics Topics Covered

(i) 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?

Be sure to include curriculum expectations for all grades up to and including grade 8. Grades represent years of formal schooling. For example, if “Year 9” in your country corresponds to the eighth year of formal schooling, please choose grade 8.

(ii) Across grades from preprimary through upper secondary education, at what grade(s) are the topics primarily intended to be taught?

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., fractions in part A topic (b)), please explain in the comment field.

<table>
<thead>
<tr>
<th>C. Geometry</th>
<th>(i) Proportion of grade 8 students expected to be taught topic</th>
<th>(ii) Grade(s) topic is expected to be taught: preprimary (PP) through the end of upper secondary (G12)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Geometric properties of angles, pairs of lines, and geometric shapes (triangles, quadrilaterals, and other common polygons)</td>
<td>All or almost all students</td>
<td>PP G1 G2 G3 G4 G5 G6 G7 G8 G9 G10 G11 G12</td>
</tr>
<tr>
<td>b) Solving problems involving perimeters, circumferences, and areas</td>
<td>Only the more able students</td>
<td></td>
</tr>
<tr>
<td>c) Solving problems involving the Pythagorean Theorem</td>
<td>Not included in the curriculum through grade 8</td>
<td></td>
</tr>
<tr>
<td>d) Translation, reflection, and rotation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>e) Congruent figures and similar triangles</td>
<td></td>
<td></td>
</tr>
<tr>
<td>f) Solving problems with three-dimensional shapes</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Comments:

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TIMSS 2019 Curriculum Questionnaire – Eighth Grade - Eighth Grade Mathematics Topics Covered

(i) 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?

Be sure to include curriculum expectations for all grades up to and including grade 8. Grades represent years of formal schooling. For example, if “Year 9” in your country corresponds to the eighth year of formal schooling, please choose grade 8.

(ii) Across grades from preprimary through upper secondary education, at what grade(s) are the topics primarily intended to be taught?

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., fractions in part A topic (b)), please explain in the comment field.

### Table: Proportion of Grade 8 Students Expected to Be Taught Topic

<table>
<thead>
<tr>
<th>Topic Description</th>
<th>Grade(s) Expected to Be Taught</th>
</tr>
</thead>
</table>
| D. Data and Probability
  a) Reading and interpreting data from one or more sources to solve problems (interpolating, extrapolating, drawing conclusions) | G1 G2 G3 G4 G5 G6 G7 G8 G9 G10 G11 G12 |
| b) Identifying appropriate procedures for collecting data | G1 G2 G3 G4 G5 G6 G7 G8 G9 G10 G11 G12 |
| c) Organizing and representing data to help answer questions | G1 G2 G3 G4 G5 G6 G7 G8 G9 G10 G11 G12 |
| e) Calculating and interpreting statistics summarizing data distributions | G1 G2 G3 G4 G5 G6 G7 G8 G9 G10 G11 G12 |
| f) Theoretical and empirical probability of simple events | G1 G2 G3 G4 G5 G6 G7 G8 G9 G10 G11 G12 |
| Theoretical and empirical probability of compound events | G1 G2 G3 G4 G5 G6 G7 G8 G9 G10 G11 G12 |

Comments:
TIMSS 2019 Curriculum Questionnaire – Eighth Grade - SCIENCE MODULE - GRADE 8

To be completed by all countries participating in TIMSS at the eighth grade.

This science module refers to the national curriculum that was in effect for the eighth grade students assessed in TIMSS 2019—the curriculum that covers science instruction at the eighth grade of formal schooling for the majority of students. If you do not have a national curriculum, please summarize for your state or provincial curriculum.
TIMSS 2019 Curriculum Questionnaire – Eighth Grade - About the Eighth Grade Science Curriculum

About the Eighth Grade Science Curriculum

This science module refers to the national curriculum that was in effect for the eighth grade students assessed in TIMSS 2019—the curriculum that covers science instruction at the eighth grade of formal schooling for the majority of students. If you do not have a national curriculum, please summarize for your state or provincial curricula.

S1. Does your country have a national curriculum that covers science instruction at the eighth grade of formal schooling?

Check one circle only:

- Yes
- No

If Yes:
Comments:

If No:
What is the highest level of decision-making authority (e.g., state or province) that provides a curriculum that covers science instruction at the eighth grade of formal schooling?
S2. A. In what year was the 2018/2019 science curriculum introduced?

Comments (e.g., status of implementation):

(Continued on Next Page)
B. Is the science curriculum currently being revised?

Check one circle only.

☐ Yes
☐ No

If Yes...
Please explain:


If No...
Comments:
Curriculum Specifications

This science module refers to the national curriculum that was in effect for the eighth grade students assessed in TIMSS 2019—the curriculum that covers science instruction at the eighth grade of formal schooling for the majority of students. If you do not have a national curriculum, please summarize for your state or provincial curricula.

S3. Does the curriculum or any other official document prescribe the percentage of total instructional time to be devoted to science instruction at the eighth grade of formal schooling?

Check one circle only:

☐ Yes
☐ No

If Yes...
Please specify the percentage:

Comments:
S4. How is the science curriculum implementation evaluated?

Check one choice for each line.

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>a)</td>
<td></td>
<td></td>
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<tr>
<td>b)</td>
<td></td>
<td></td>
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<tr>
<td>c)</td>
<td></td>
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<tr>
<td>d)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>e)</td>
<td></td>
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</tbody>
</table>

Other: Please specify below:

Comments:
Use of Digital Devices

This science module refers to the national curriculum that was in effect for the eighth grade students assessed in TIMSS 2019—the curriculum that covers science instruction at the eighth grade of formal schooling for the majority of students. If you do not have a national curriculum, please summarize for your state or provincial curricula.

5. Does the national curriculum contain statements/policies about the use of digital devices (e.g., computers, tablets, calculators) in grade 8 science instruction?

Check one circle only.

☐ Yes
☐ No

If Yes...
What are the statements/policies?

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$6. At what grade(s) are students first taught by science subject specialists rather than general classroom teachers?
Eighth Grade Science Topics Covered

This science module refers to the national curriculum that was in effect for the eighth grade students assessed in TIMSS 2019—the curriculum that covers science instruction at the eighth grade of formal schooling for the majority of students. If you do not have a national curriculum, please summarize for your state or provincial curricula.

S7. (i) According to the national science curriculum, what proportion of grade 8 students should have been taught each of the following topics or skills by the end of grade 8?

Be sure to include curriculum expectations for all grades up to and including grade 8. Grades represent years of formal schooling. For example, if “Year 9” in your country corresponds to the eighth year of formal schooling, please choose grade 9.

(ii) Across grades from preprimary through upper secondary education, at what grade(s) are the topics primarily intended to be taught?

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., energy flow in part 4 topic (i)), please explain in the comment field.

(ii) Proportion of grade 8 students expected to be taught topic

| Check one circle for each line. | (ii) Grade(s) topic is expected to be taught
| All or almost all students | Only the more able students | Not included in the curriculum through grade 8 |

A. Biology

| a) Differences among major taxonomic groups of organisms (plants, animals, fungi, mammals, birds, reptiles, fish, amphibians, insects) | | |
| b) Major organs and organ systems in humans and other organisms (structure/function, life processes) | | |
| c) Cells: their structure and functions, including respiration and photosynthesis as cellular processes | | |
| d) Life cycles, sexual reproduction, and heredity (inherited versus acquired/learned characteristics) | | |
| e) Role of variation and adaptation in survival/extinction of species (including fossil evidence) | | |

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(Continued on Next Page)
TIMSS 2019 Curriculum Questionnaire – Eighth Grade - Eighth Grade Science Topics Covered

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<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td><strong>f)</strong> Interdependence of populations of organisms in an ecosystem (e.g., carbon and water cycles, energy flow, food webs, competition, predation, human impacts on ecosystems)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>g)</strong> Human health (e.g., causes, transmission, and prevention of common infectious diseases; immunity) and the importance of diet, exercise, and other lifestyle choices in maintaining health</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Comments:

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© IEA Online SurveySystem 2019 - Help
S7. (continued)

(i) According to the national science curriculum, what proportion of grade 8 students should have been taught each of the following topics or skills by the end of grade 8?

Be sure to include curriculum expectations for all grades up to and including grade 8. Grades represent years of formal schooling. For example, if “Year 9” in your country corresponds to the eighth year of formal schooling, please choose grade 8.

(ii) Across grades from preprimary through upper secondary education, at what grade(s) are the topics primarily intended to be taught?

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., energy flow in part A topic (i)), please explain in the comment field.

<table>
<thead>
<tr>
<th>(i) Proportion of grade 8 students expected to be taught topic</th>
<th>(ii) Grade(s) topic is expected to be taught prepriary (FP) through the end of upper secondary (G12)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Check one circle for each line</td>
<td>Check the corresponding grade(s) for each topic</td>
</tr>
<tr>
<td>All or almost all students students</td>
<td>PP G1 G2 G3 G4 G5 G6 G7 G8 G9 G10 G11 G12</td>
</tr>
<tr>
<td>Only the more able students students</td>
<td></td>
</tr>
<tr>
<td>Not included in the curriculum through grade 8</td>
<td></td>
</tr>
</tbody>
</table>

B. Chemistry

a) Particulate structure, classification, and composition of matter (protons, neutrons, electrons, atoms, molecules, elements, compounds, mixtures)

b) The periodic table as an organizing principle for the known elements

c) Physical and chemical properties of matter

d) Mixtures and solutions (e.g., solvent, solute, concentration/dilution)

e) Properties of common acids and bases (e.g., acids have pH less than 7, reactions with indicators produce color changes, acids and bases neutralize each other)

f) Characteristics of chemical reactions (e.g., transformation of reactants, evidence of chemical change)

g) Matter and energy in chemical reactions (conservation of matter, familiar exothermic and endothermic reactions, factors affecting reaction rates)

h) The role of electrons in chemical bonds
TIMSS 2019 Curriculum Questionnaire – Eighth Grade - Eighth Grade Science Topics Covered

Comments:

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S7. (continued)

(i) According to the national science curriculum, what proportion of grade 8 students should have been taught each of the following topics or skills by the end of grade 8?

Be sure to include curriculum expectations for all grades up to and including grade 8. Grades represent years of formal schooling. For example, if “Year 9” in your country corresponds to the eighth year of formal schooling, please choose grade 8.

(ii) Across grades from preprimary through upper secondary education, at what grade(s) are the topics primarily intended to be taught?

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., energy flow in part A topic (?)), please explain in the comment field.

<table>
<thead>
<tr>
<th>C. Physics</th>
<th>(i) Proportion of grade 8 students expected to be taught topic</th>
<th>(ii) Grade(s) topic is expected to be taught preprimary (FP) through the end of upper secondary (G12)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Check one circle for each line</td>
<td>Check the corresponding grade(s) for each topic</td>
</tr>
<tr>
<td></td>
<td>All or almost all students</td>
<td>Only the more able students</td>
</tr>
<tr>
<td>a) Physical states and changes in matter (explanations of properties in terms of movement and distance between particles; phase change, changes in volume and/or pressure, physical changes)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b) Energy transformation and transfer (e.g., forms of energy, energy conservation, heat temperature, equilibrium)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c) Basic properties/behaviors of light (reflection, refraction, color, shadows, simple ray diagrams)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>d) Basic properties/behaviors of sound (vibrations that produce sound, transmission through media, loudness, pitch)</td>
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<tr>
<td>e) Electric circuits (e.g., electrical conductors/insulators and the flow of electricity in series/parallel circuits)</td>
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<tr>
<td>f) Properties and uses of permanent magnets and electromagnets</td>
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<td></td>
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<tr>
<td>g) Motion and forces (e.g., basic description of motion, common mechanical forces, properties of forces, effects of forces, simple machines, buoyancy, effects of density and pressure)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### S7. (continued)

(i) According to the national science curriculum, what proportion of grade 8 students should have been taught each of the following topics or skills by the end of grade 8?

Be sure to include curriculum expectations for all grades up to and including grade 8. Grades represent years of formal schooling. For example, if "Year 9" in your country corresponds to the eighth year of formal schooling, please choose grade 8.

(ii) Across grades from preprimary through upper secondary education, at what grade(s) are the topics primarily intended to be taught?

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., energy flow in part A topic (c)), please explain in the comment field.

<table>
<thead>
<tr>
<th>D. Earth Science</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Earth's structure and physical features (e.g., Earth's crust, mantle, and core, composition and relative distribution of water, composition of Earth's atmosphere)</td>
</tr>
<tr>
<td>All or almost all students</td>
</tr>
<tr>
<td>Not included in the curriculum grade 8</td>
</tr>
<tr>
<td>PP G1 G2 G3 G4 G5 G6 G7 G8 G9 G10 G11 G12</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>D. Earth Science</th>
</tr>
</thead>
<tbody>
<tr>
<td>b) Earth's processes, cycles, and history (e.g., rock cycle, major geological events, formation of fossils and fossil fuels, water cycle, weather versus climate)</td>
</tr>
<tr>
<td>PP G1 G2 G3 G4 G5 G6 G7 G8 G9 G10 G11 G12</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>D. Earth Science</th>
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</thead>
<tbody>
<tr>
<td>c) Earth's resources, their use, and conservation (e.g., renewable/nonrenewable resources, human use of land and water resources)</td>
</tr>
<tr>
<td>PP G1 G2 G3 G4 G5 G6 G7 G8 G9 G10 G11 G12</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>D. Earth Science</th>
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</thead>
<tbody>
<tr>
<td>d) Earth in the Solar System and the universe (phenomena on Earth: seasons, solstices, tides, phases of moon; members of the Solar System, physical features of Earth)</td>
</tr>
<tr>
<td>PP G1 G2 G3 G4 G5 G6 G7 G8 G9 G10 G11 G12</td>
</tr>
</tbody>
</table>
Thank you for completing the TIMSS 2019 Curriculum Questionnaire.

Your information has been stored successfully.