

# TIMSS

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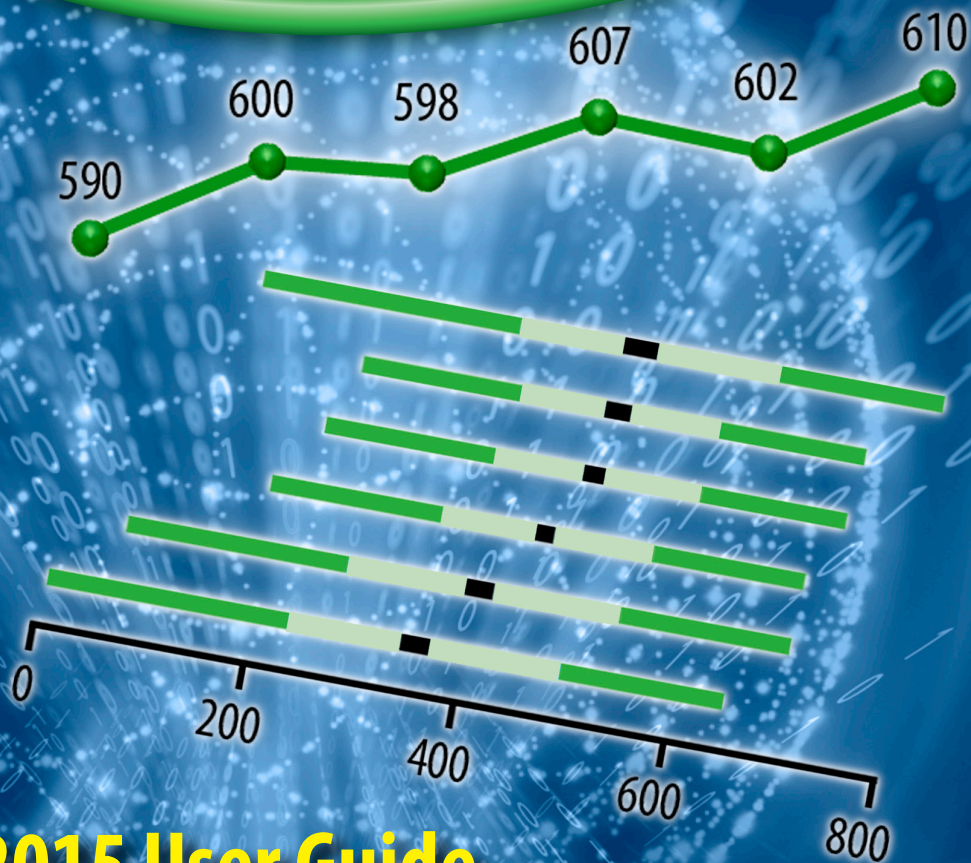
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## TIMSS Advanced 2015 User Guide for the International Database

# SUPPLEMENT 2

National Adaptations of International  
Context Questionnaires

# Supplement 2

## *National Adaptations of International Context Questionnaires*

### **Overview**

This supplement describes national adaptations made to the international version of the TIMSS Advanced 2015 context questionnaires. This information provides users with a guide to evaluate the availability of internationally comparable data for use in secondary analyses involving the TIMSS Advanced 2015 background variables. Context questionnaire national adaptations include questions that countries were required to adapt, questions that were not administered, and questions that countries modified to suit their national context.

National adaptations are presented in six sections corresponding to the TIMSS Advanced 2015 context questionnaire.

- Section 1: Advanced Mathematics Student Questionnaire
- Section 2: Physics Student Questionnaire
- Section 3: Advanced Mathematics Teacher Questionnaire
- Section 4: Physics Teacher Questionnaire
- Section 5: School Questionnaire - Advanced Mathematics & Physics

For each background question that was adapted, a national entry is included if the version of the question administered in a country was different from the international version. For each question, the following information is provided:

- Question number
- Question stem and response options
- Variable name(s)
- National adaptation, listed by country

Each entry is assigned either Code D or Code X representing the following meaning.

- Code D      National data for the country are included in the international database. This code is used for national adaptations that are considered comparable to the international version.
- Code X      National data for the country are not included in the international database. This code is used for questions that were not administered, not applicable, or deleted for any of several reasons (e.g., not internationally comparable, removed per country request, or removed due to other data problems).



# SECTION 1: ADVANCED MATHEMATICS STUDENT QUESTIONNAIRE

TIMSS ADVANCED 2015 USER GUIDE  
FOR THE INTERNATIONAL DATABASE



**IEA**

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

**SQG-06A-J**

**Question:**

Do you have any of these things?

- A: Your own computer
- B: Your own tablet
- C: Your own smartphone
- D: Your own graphing calculator
- E: A gaming system (e.g., PlayStation®, Wii®, Xbox®)
- F: Study desk/table for your use
- G: Your own room
- H: <country-specific indicator of wealth>
- I: <country-specific indicator of wealth>
- J: <country-specific indicator of wealth>

1 = Yes  
2 = No

**Variable Name(s):** MSBG06A, MSBG06B, MSBG06C, MSBG06D, MSBG06E, MSBG06F, MSBG06G, MSBG06H, MSBG06I, MSBG06J

Country	Item ID	Code	Documentation
France	SQG-06H-J	X	Option not administered or data not available
Italy	SQG-06H	D	Home alarm system
Italy	SQG-06I	D	Air conditioning
Italy	SQG-06J	D	A Jacuzzi
Lebanon	SQG-06H	D	An Internet connection
Lebanon	SQG-06I	D	More than one bathroom in the house
Lebanon	SQG-06J	D	Home cinema
Norway	SQG-06H	D	Access to Internet
Norway	SQG-06I	D	Musical instrument (e.g., piano or violin)
Norway	SQG-06J	D	Cabin and/or large boat in the family
Portugal	SQG-06H	D	Your own transportation
Portugal	SQG-06I	D	Plasma or LCD TV
Portugal	SQG-06J	D	Air conditioning
Russian Federation	SQG-06H	D	Musical instruments (e.g., guitar, piano)
Russian Federation	SQG-06I	D	A car (one or more)
Russian Federation	SQG-06J	D	A flat (or house) with 4 or more rooms
Slovenia	SQG-06H	D	Your own advanced sports equipment (for skiing, tennis, mountain biking, etc.)
Slovenia	SQG-06I	D	Artwork, musical instruments, encyclopedias (e.g., pictures, statues, piano, etc.)
Slovenia	SQG-06J	D	Go on family trips or mountain hiking, have family outings in a restaurant for lunch, dinner, or do sport activities together (e.g., skiing, tennis, golf)

Sweden	SQG-06H	D	A piano
Sweden	SQG-06I-J	X	Option not administered or data not available
United States	SQG-06H	D	Your own car
United States	SQG-06I-J	X	Option not administered or data not available

**SQG-07A**

**Question:**

What is the highest level of education completed by your mother (or stepmother or female guardian)?

- 1 = Some <Primary education—ISCED Level 1 or Lower secondary education—ISCED Level 2> or did not go to school
- 2 = <Lower secondary education—ISCED Level 2>
- 3 = <Upper secondary education—ISCED Level 3>
- 4 = <Post-secondary, non-tertiary education—ISCED Level 4>
- 5 = <Short-cycle tertiary education—ISCED Level 5>
- 6 = <Bachelor's or equivalent level—ISCED Level 6>
- 7 = <Master's or equivalent level—ISCED Level 7>
- 8 = <Doctor or equivalent level—ISCED Level 8>
- 9 = I don't know

**Variable Name(s):** MSBG07A

Country	Item ID	Code	Documentation
France	SQG-07A	D	Nationally defined options: 1 = Primary level or did not finish lower secondary school or did not go to school 2 = Lower secondary school 3 = Upper secondary school 4 = Pre-university level 5 = Short cycle tertiary education 6 = Degree or equivalent level 7 = Master's or equivalent level 8 = Doctor or equivalent level 9 = I don't know
Italy	SQG-07A	D	Nationally defined options: 1 = Primary education, or some lower secondary education (secondary level 1), or did not go to school 2 = Lower secondary education (secondary level 1) 3 = Upper secondary education (secondary level 2) 4 = Post-secondary, non-tertiary education 5 = Tertiary education level I 6 = Tertiary education level II or equivalent 7 = Postgraduate Master's or equivalent 8 = PhD or equivalent qualification 9 = I don't know

Lebanon	SQG-07A	D	<p>Nationally defined options:</p> <p>1 = Some primary education or Grade 9 basic education, or did not go to school</p> <p>2 = Grade 9 basic education (lower secondary education)</p> <p>3 = Cycle 4 or secondary education</p> <p>4 = Normal school - primary education (1 year after secondary cycle)</p> <p>5 = Normal school - middle education (2 years after secondary cycle)</p> <p>6 = Bachelor's or equivalent (1st university cycle)</p> <p>7 = Master's or equivalent (2nd university cycle)</p> <p>8 = Doctorate or PhD (3rd university cycle)</p> <p>9 = I don't know</p>
Norway	SQG-07A	D	<p>Nationally defined options:</p> <p>1 = Primary school or less, or did not go to school</p> <p>2 = Lower secondary school</p> <p>3 = Upper secondary school</p> <p>4 = Education beyond upper secondary school (not university or university college)</p> <p>5 = Short education at university college (1-2 years)</p> <p>6 = University or university college (at least 3 years) Bachelor's or equivalent</p> <p>7 = University or university college (at least 5 years) Master's or equivalent</p> <p>8 = Doctor or equivalent</p> <p>9 = I don't know</p>
Portugal	SQG-07A	D	<p>Nationally defined options:</p> <p>1 = Some 1st cycle, 2nd cycle, or the 3rd cycle of basic education, or did not go to school</p> <p>2 = 3rd cycle of basic education</p> <p>3 = High school</p> <p>4 = Technological Specialization Course</p> <p>5 = Baccalaureate</p> <p>6 = License</p> <p>7 = Master</p> <p>8 = Doctor</p> <p>9 = I don't know</p>
Russian Federation	SQG-07A	D	<p>Nationally defined options:</p> <p>1 = Did not finish primary or basic education, or did not go to school</p> <p>2 = Basic general education (9 grades)</p> <p>3 = Secondary general education (11 grades)</p> <p>4 = Initial vocational education</p> <p>5 = Incomplete higher education (two years or more)</p> <p>6 = Higher education: Bachelor's or equivalent (three years or more)</p> <p>7 = Higher education: Master's or equivalent (five years or more), second higher education</p> <p>8 = Candidate or Doctor degree or equivalent</p> <p>9 = I don't know</p>
Slovenia	SQG-07A	D	<p>Nationally defined options:</p> <p>1 = Primary education or did not go to school</p> <p>2 = Lower secondary education</p> <p>3 = Upper secondary education</p> <p>4 = Post-secondary, non-tertiary education (high school)</p> <p>5 = Short-cycle tertiary education (2-year study programs, also teacher college or vocational oriented study)</p> <p>6 = University study of the first Bologna degree</p> <p>7 = University 4 year study (old programs), or university study of the second Bologna degree, or Master of Science</p> <p>8 = Doctorate of Science</p> <p>9 = I don't know</p>

Sweden	SQG-07A	D	<p>Nationally defined options:</p> <p>1 = No education or less than 9 years in primary school</p> <p>2 = Lower secondary education</p> <p>3 = High school education</p> <p>4 = Post-secondary, non-tertiary education</p> <p>5 = Higher education up to 2 years (e.g., university college degree)</p> <p>6 = University or university college degree, equivalent to a Bachelor's degree (3 years)</p> <p>7 = Higher university degree, equivalent to a Master's degree (4-5 years)</p> <p>8 = Postgraduate education (licentiate or PhD)</p> <p>9 = I don't know</p>
United States	SQG-07A	D	<p>National options recoded for international comparability:</p> <p>1 = Less than high school</p> <p>2 = Some high school</p> <p>3 = High school graduate</p> <p>4 = Option not administered or data not available</p> <p>5 = Associate's degree (2-year college program)</p> <p>6 = Bachelor's degree (4-year college program)</p> <p>7 = Master's degree or professional degree (MD, DDS, lawyer, minister)</p> <p>8 = Doctorate (Ph.D., or Ed.D.)</p> <p>9 = I don't know</p>

**SQG-07B**

**Question:**

What is the highest level of education completed by your father (or stepfather or male guardian)?

- 1 = Some <Primary education—ISCED Level 1 or Lower secondary education—ISCED Level 2> or did not go to school
- 2 = <Lower secondary education—ISCED Level 2>
- 3 = <Upper secondary education—ISCED Level 3>
- 4 = <Post-secondary, non-tertiary education—ISCED Level 4>
- 5 = <Short-cycle tertiary education—ISCED Level 5>
- 6 = <Bachelor's or equivalent level—ISCED Level 6>
- 7 = <Master's or equivalent level—ISCED Level 7>
- 8 = <Doctor or equivalent level—ISCED Level 8>
- 9 = I don't know

**Variable Name(s):** MSBG07B

<b>Country</b>	<b>Item ID</b>	<b>Code</b>	<b>Documentation</b>
France	SQG-07B	D	<p>Nationally defined options:</p> <p>1 = Primary level or did not finish lower secondary school or did not go to school</p> <p>2 = Lower secondary school</p> <p>3 = Upper secondary school</p> <p>4 = Pre-university level</p> <p>5 = Short cycle tertiary education</p> <p>6 = Degree or equivalent level</p> <p>7 = Master's or equivalent level</p> <p>8 = Doctor or equivalent level</p> <p>9 = I don't know</p>



Italy	SQG-07B	D	<p>Nationally defined options:</p> <p>1 = Primary education, or some lower secondary education (secondary level 1), or did not go to school</p> <p>2 = Lower secondary education (secondary level 1)</p> <p>3 = Upper secondary education (secondary level 2)</p> <p>4 = Post-secondary, non-tertiary education</p> <p>5 = Tertiary education level I</p> <p>6 = Tertiary education level II or equivalent</p> <p>7 = Postgraduate Master's or equivalent</p> <p>8 = PhD or equivalent qualification</p> <p>9 = I don't know</p>
Lebanon	SQG-07B	D	<p>Nationally defined options:</p> <p>1 = Some primary education or Grade 9 basic education, or did not go to school</p> <p>2 = Grade 9 basic education (lower secondary education)</p> <p>3 = Cycle 4 or secondary education</p> <p>4 = Normal school - primary education (1 year after secondary cycle)</p> <p>5 = Normal school - middle education (2 years after secondary cycle)</p> <p>6 = Bachelor's or equivalent (1st university cycle)</p> <p>7 = Master's or equivalent (2nd university cycle)</p> <p>8 = Doctorate or PhD (3rd university cycle)</p> <p>9 = I don't know</p>
Norway	SQG-07B	D	<p>Nationally defined options:</p> <p>1 = Primary school or less, or did not go to school</p> <p>2 = Lower secondary school</p> <p>3 = Upper secondary school</p> <p>4 = Education beyond upper secondary school (not university or university college)</p> <p>5 = Short education at university college (1-2 years)</p> <p>6 = University or university college (at least 3 years) Bachelor's or equivalent</p> <p>7 = University or university college (at least 5 years) Master's or equivalent</p> <p>8 = Doctor or equivalent</p> <p>9 = I don't know</p>
Portugal	SQG-07B	D	<p>Nationally defined options:</p> <p>1 = Some 1st cycle, 2nd cycle, or the 3rd cycle of basic education, or did not go to school</p> <p>2 = 3rd cycle of basic education</p> <p>3 = High school</p> <p>4 = Technological Specialization Course</p> <p>5 = Baccalaureate</p> <p>6 = License</p> <p>7 = Master</p> <p>8 = Doctor</p> <p>9 = I don't know</p>
Russian Federation	SQG-07B	D	<p>Nationally defined options:</p> <p>1 = Did not finish primary or basic education, or did not go to school</p> <p>2 = Basic general education (9 grades)</p> <p>3 = Secondary general education (11 grades)</p> <p>4 = Initial vocational education</p> <p>5 = Incomplete higher education (two years or more)</p> <p>6 = Higher education: Bachelor's or equivalent (three years or more)</p> <p>7 = Higher education: Master's or equivalent (five years or more), second higher education</p> <p>8 = Candidate or Doctor degree or equivalent</p> <p>9 = I don't know</p>

Slovenia	SQG-07B	D	Nationally defined options: 1 = Primary education or did not go to school 2 = Lower secondary education 3 = Upper secondary education 4 = Post-secondary, non-tertiary education (high school) 5 = Short-cycle tertiary education (2-year study programs, also teacher college or vocational oriented study) 6 = University study of the first Bologna degree 7 = University 4 year study (old programs), or university study of the second Bologna degree, or Master of Science 8 = Doctorate of Science 9 = I don't know
Sweden	SQG-07B	D	Nationally defined options: 1 = No education or less than 9 years in primary school 2 = Lower secondary education 3 = High school education 4 = Post-secondary, non-tertiary education 5 = Higher education up to 2 years (e.g., university college degree) 6 = University or university college degree, equivalent to a Bachelor's degree (3 years) 7 = Higher university degree, equivalent to a Master's degree (4-5 years) 8 = Postgraduate education (licentiate or PhD) 9 = I don't know
United States	SQG-07B	D	National options recoded for international comparability: 1 = Less than high school 2 = Some high school 3 = High school graduate 4 = Option not administered or data not available 5 = Associate's degree (2-year college program) 6 = Bachelor's degree (4-year college program) 7 = Master's degree or professional degree (MD, DDS, lawyer, minister) 8 = Doctorate (Ph.D., or Ed.D.) 9 = I don't know

**SQG-09**

**Question:**

How far in your education do you expect to go?

- 1 = <Upper secondary education—ISCED Level 3>
- 2 = <Post-secondary, non-tertiary education—ISCED Level 4>
- 3 = <Short-cycle tertiary education—ISCED Level 5>
- 4 = <Bachelor's or equivalent level—ISCED Level 6>
- 5 = <Master's or equivalent level—ISCED Level 7>
- 6 = <Doctor or equivalent level—ISCED Level 8>

**Variable Name(s):** MSBG09

Country	Item ID	Code	Documentation
France	SQG-09	D	Nationally defined options: 1 = Upper secondary school 2 = Pre-university level 3 = Short cycle tertiary education 4 = Degree or equivalent level 5 = Master's or equivalent level 6 = Doctor or equivalent level

Italy	SQG-09	D	Nationally defined options: 1 = Upper secondary education (secondary level 2) 2 = Post-secondary, non-tertiary education 3 = Tertiary education level I 4 = Tertiary education level II or equivalent 5 = Postgraduate Master's or equivalent 6 = PhD or equivalent qualification
Lebanon	SQG-09	D	Nationally defined options: 1 = Cycle 4 or secondary education 2 = Normal school - primary education (1 year after secondary cycle) 3 = Normal school - middle education (2 years after secondary cycle) 4 = Bachelor's or equivalent (1st university cycle) 5 = Master's or equivalent (2nd university cycle) 6 = Doctorate or PhD (3rd university cycle)
Norway	SQG-09	D	Nationally defined options: 1 = Upper secondary school 2 = Education beyond upper secondary school (not university or university college) 3 = Short education at university college (1-2 years) 4 = University or university college (at least 3 years) Bachelor's or equivalent 5 = University or university college (at least 5 years) Master's or equivalent 6 = Doctor or equivalent
Portugal	SQG-09	D	National options recoded for international comparability: 1 = High school 2 = Technological Specialization Course 3 = Option not administered or data not available 4 = License 5 = Master 6 = Doctor
Russian Federation	SQG-09	D	National options recoded for international comparability: 1 = Secondary general education (11 grades) 2 = Initial vocational education 3 = Option not administered or data not available 4 = Higher education: Bachelor's or equivalent (three years or more) 5 = Higher education: Master's or equivalent (five years or more) 6 = Candidate or Doctor degree
Slovenia	SQG-09	D	Nationally defined options: 1 = I want to finish gymnasias and get a job 2 = After gymnasias I want to finish non-tertiary education (high school) and get a job 3 = I want to finish 3-year short cycle tertiary study and get a job 4 = I want to finish university study of the first Bologna degree and get a job 5 = I want to finish university study of the second Bologna degree 6 = I want to achieve a Doctorate of Science
Sweden	SQG-09	D	Nationally defined options: 1 = High school education 2 = Post-secondary, non-tertiary education 3 = Higher education up to 2 years (e.g., university college degree) 4 = University or university college degree, equivalent to a Bachelor's degree (3 years) 5 = Higher university degree, equivalent to a Master's degree (4-5 years) 6 = Postgraduate education (licentiate or PhD)

United States	SQG-09	D	National options recoded for international comparability: 1 = High school 2 = Option not administered or data not available 3 = Associate's degree (2-year college program) 4 = Bachelor's degree (4-year college program) 5 = Master's degree or professional degree (MD, DDS, lawyer, minister) 6 = Doctorate (Ph.D., or Ed.D.)
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**SQM-21A-I**

**Question:**

How much do you agree with these statements about the mathematics you are studying?

- A: Learning mathematics will help me get ahead in the world
- B: It is important to do well in my mathematics class
- C: The mathematics I am studying is not useful for my future
- D: My parents are pleased that I am taking advanced mathematics
- E: Doing well in mathematics will help me get into the <university> of my choice
- F: Learning advanced mathematics does not seem to be a worthwhile exercise
- G: My parents think that it is important that I do well in my mathematics class
- H: I like telling people I am studying advanced mathematics
- I: Learning advanced mathematics will give me more job opportunities

- 1 = Agree a lot
- 2 = Agree a little
- 3 = Disagree a little
- 4 = Disagree a lot

**Variable Name(s):** MSBM21A, MSBM21B, MSBM21C, MSBM21D, MSBM21E, MSBM21F, MSBM21G, MSBM21H, MSBM21I

Country	Item ID	Code	Documentation
France	SQM-21E	D	University, high school, or school
Norway	SQM-21E	D	Education
Portugal	SQM-21E	D	Tertiary education course
Russian Federation	SQM-21E	D	Higher education establishment

**SECTION 2:**  
**PHYSICS STUDENT**  
**QUESTIONNAIRE**

TIMSS ADVANCED 2015 USER GUIDE  
FOR THE INTERNATIONAL DATABASE



**IEA**

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

**SQG-06A-J**

**Question:**

Do you have any of these things?

- A: Your own computer
- B: Your own tablet
- C: Your own smartphone
- D: Your own graphing calculator
- E: A gaming system (e.g., PlayStation®, Wii®, Xbox®)
- F: Study desk/table for your use
- G: Your own room
- H: <country-specific indicator of wealth>
- I: <country-specific indicator of wealth>
- J: <country-specific indicator of wealth>

1 = Yes

2 = No

**Variable Name(s):** PSBG06A, PSBG06B, PSBG06C, PSBG06D, PSBG06E, PSBG06F, PSBG06G, PSBG06H, PSBG06I, PSBG06J

Country	Item ID	Code	Documentation
France	SQG-06H-J	X	Option not administered or data not available
Italy	SQG-06H	D	Home alarm system
Italy	SQG-06I	D	Air conditioning
Italy	SQG-06J	D	A Jacuzzi
Lebanon	SQG-06H	D	An Internet connection
Lebanon	SQG-06I	D	More than one bathroom in the house
Lebanon	SQG-06J	D	Home cinema
Norway	SQG-06H	D	Access to Internet
Norway	SQG-06I	D	Musical instrument (e.g., piano or violin)
Norway	SQG-06J	D	Cabin and/or large boat in the family
Portugal	SQG-06H	D	Your own transportation
Portugal	SQG-06I	D	Plasma or LCD TV
Portugal	SQG-06J	D	Air conditioning
Russian Federation	SQG-06H	D	Musical instruments (e.g., guitar, piano)
Russian Federation	SQG-06I	D	A car (one or more)
Russian Federation	SQG-06J	D	A flat (or house) with 4 or more rooms
Slovenia	SQG-06H	D	Your own advanced sports equipment (for skiing, tennis, mountain biking, etc.)
Slovenia	SQG-06I	D	Artwork, musical instruments, encyclopedias (e.g., pictures, statues, piano, etc.)
Slovenia	SQG-06J	D	Go on family trips or mountain hiking, have family outings in a restaurant for lunch, dinner, or do sport activities together (e.g., skiing, tennis, golf)

Sweden	SQG-06H	D	A piano
Sweden	SQG-06I-J	X	Option not administered or data not available
United States	SQG-06H	D	Your own car
United States	SQG-06I-J	X	Option not administered or data not available

**SQG-07A**

**Question:**

What is the highest level of education completed by your mother (or stepmother or female guardian)?

- 1 = Some <Primary education—ISCED Level 1 or Lower secondary education—ISCED Level 2> or did not go to school
- 2 = <Lower secondary education—ISCED Level 2>
- 3 = <Upper secondary education—ISCED Level 3>
- 4 = <Post-secondary, non-tertiary education—ISCED Level 4>
- 5 = <Short-cycle tertiary education—ISCED Level 5>
- 6 = <Bachelor's or equivalent level—ISCED Level 6>
- 7 = <Master's or equivalent level—ISCED Level 7>
- 8 = <Doctor or equivalent level—ISCED Level 8>
- 9 = I don't know

**Variable Name(s):** PSBG07A

Country	Item ID	Code	Documentation
France	SQG-07A	D	Nationally defined options: 1 = Primary level or did not finish lower secondary school or did not go to school 2 = Lower secondary school 3 = Upper secondary school 4 = Pre-university level 5 = Short cycle tertiary education 6 = Degree or equivalent level 7 = Master's or equivalent level 8 = Doctor or equivalent level 9 = I don't know
Italy	SQG-07A	D	Nationally defined options: 1 = Primary education, or some lower secondary education (secondary level 1), or did not go to school 2 = Lower secondary education (secondary level 1) 3 = Upper secondary education (secondary level 2) 4 = Post-secondary, non-tertiary education 5 = Tertiary education level I 6 = Tertiary education level II or equivalent 7 = Postgraduate Master's or equivalent 8 = PhD or equivalent qualification 9 = I don't know

Lebanon	SQG-07A	D	<p>Nationally defined options:</p> <p>1 = Some primary education or Grade 9 basic education, or did not go to school</p> <p>2 = Grade 9 basic education (lower secondary education)</p> <p>3 = Cycle 4 or secondary education</p> <p>4 = Normal school - primary education (1 year after secondary cycle)</p> <p>5 = Normal school - middle education (2 years after secondary cycle)</p> <p>6 = Bachelor's or equivalent (1st university cycle)</p> <p>7 = Master's or equivalent (2nd university cycle)</p> <p>8 = Doctorate or PhD (3rd university cycle)</p> <p>9 = I don't know</p>
Norway	SQG-07A	D	<p>Nationally defined options:</p> <p>1 = Primary school or less, or did not go to school</p> <p>2 = Lower secondary school</p> <p>3 = Upper secondary school</p> <p>4 = Education beyond upper secondary school (not university or university college)</p> <p>5 = Short education at university college (1-2 years)</p> <p>6 = University or university college (at least 3 years) Bachelor's or equivalent</p> <p>7 = University or university college (at least 5 years) Master's or equivalent</p> <p>8 = Doctor or equivalent</p> <p>9 = I don't know</p>
Portugal	SQG-07A	D	<p>Nationally defined options:</p> <p>1 = Some 1st cycle, 2nd cycle, or the 3rd cycle of basic education, or did not go to school</p> <p>2 = 3rd cycle of basic education</p> <p>3 = High school</p> <p>4 = Technological Specialization Course</p> <p>5 = Baccalaureate</p> <p>6 = License</p> <p>7 = Master</p> <p>8 = Doctor</p> <p>9 = I don't know</p>
Russian Federation	SQG-07A	D	<p>Nationally defined options:</p> <p>1 = Did not finish primary or basic education, or did not go to school</p> <p>2 = Basic general education (9 grades)</p> <p>3 = Secondary general education (11 grades)</p> <p>4 = Initial vocational education</p> <p>5 = Incomplete higher education (two years or more)</p> <p>6 = Higher education: Bachelor's or equivalent (three years or more)</p> <p>7 = Higher education: Master's or equivalent (five years or more), second higher education</p> <p>8 = Candidate or Doctor degree or equivalent</p> <p>9 = I don't know</p>
Slovenia	SQG-07A	D	<p>Nationally defined options:</p> <p>1 = Primary education or did not go to school</p> <p>2 = Lower secondary education</p> <p>3 = Upper secondary education</p> <p>4 = Post-secondary, non-tertiary education (high school)</p> <p>5 = Short-cycle tertiary education (2-year study programs, also teacher college or vocational oriented study)</p> <p>6 = University study of the first Bologna degree</p> <p>7 = University 4 year study (old programs), or university study of the second Bologna degree, or Master of Science</p> <p>8 = Doctorate of Science</p> <p>9 = I don't know</p>



Sweden	SQG-07A	D	Nationally defined options: 1 = No education or less than 9 years in primary school 2 = Lower secondary education 3 = High school education 4 = Post-secondary, non-tertiary education 5 = Higher education up to 2 years (e.g., university college degree) 6 = University or university college degree, equivalent to a Bachelor's degree (3 years) 7 = Higher university degree, equivalent to a Master's degree (4-5 years) 8 = Postgraduate education (licentiate or PhD) 9 = I don't know
United States	SQG-07A	D	National options recoded for international comparability: 1 = Less than high school 2 = Some high school 3 = High school graduate 4 = Option not administered or data not available 5 = Associate's degree (2-year college program) 6 = Bachelor's degree (4-year college program) 7 = Master's degree or professional degree (MD, DDS, lawyer, minister) 8 = Doctorate (Ph.D., or Ed.D.) 9 = I don't know

**SQG-07B**

**Question:**

What is the highest level of education completed by your father (or stepfather or male guardian)?

- 1 = Some <Primary education—ISCED Level 1 or Lower secondary education—ISCED Level 2> or did not go to school
- 2 = <Lower secondary education—ISCED Level 2>
- 3 = <Upper secondary education—ISCED Level 3>
- 4 = <Post-secondary, non-tertiary education—ISCED Level 4>
- 5 = <Short-cycle tertiary education—ISCED Level 5>
- 6 = <Bachelor's or equivalent level—ISCED Level 6>
- 7 = <Master's or equivalent level—ISCED Level 7>
- 8 = <Doctor or equivalent level—ISCED Level 8>
- 9 = I don't know

**Variable Name(s):** PSBG07B

<b>Country</b>	<b>Item ID</b>	<b>Code</b>	<b>Documentation</b>
France	SQG-07B	D	Nationally defined options: 1 = Primary level or did not finish lower secondary school or did not go to school 2 = Lower secondary school 3 = Upper secondary school 4 = Pre-university level 5 = Short cycle tertiary education 6 = Degree or equivalent level 7 = Master's or equivalent level 8 = Doctor or equivalent level 9 = I don't know

Italy	SQG-07B	D	<p>Nationally defined options:</p> <p>1 = Primary education, or some lower secondary education (secondary level 1), or did not go to school</p> <p>2 = Lower secondary education (secondary level 1)</p> <p>3 = Upper secondary education (secondary level 2)</p> <p>4 = Post-secondary, non-tertiary education</p> <p>5 = Tertiary education level I</p> <p>6 = Tertiary education level II or equivalent</p> <p>7 = Postgraduate Master's or equivalent</p> <p>8 = PhD or equivalent qualification</p> <p>9 = I don't know</p>
Lebanon	SQG-07B	D	<p>Nationally defined options:</p> <p>1 = Some primary education or Grade 9 basic education, or did not go to school</p> <p>2 = Grade 9 basic education (lower secondary education)</p> <p>3 = Cycle 4 or secondary education</p> <p>4 = Normal school - primary education (1 year after secondary cycle)</p> <p>5 = Normal school - middle education (2 years after secondary cycle)</p> <p>6 = Bachelor's or equivalent (1st university cycle)</p> <p>7 = Master's or equivalent (2nd university cycle)</p> <p>8 = Doctorate or PhD (3rd university cycle)</p> <p>9 = I don't know</p>
Norway	SQG-07B	D	<p>Nationally defined options:</p> <p>1 = Primary school or less, or did not go to school</p> <p>2 = Lower secondary school</p> <p>3 = Upper secondary school</p> <p>4 = Education beyond upper secondary school (not university or university college)</p> <p>5 = Short education at university college (1-2 years)</p> <p>6 = University or university college (at least 3 years) Bachelor's or equivalent</p> <p>7 = University or university college (at least 5 years) Master's or equivalent</p> <p>8 = Doctor or equivalent</p> <p>9 = I don't know</p>
Portugal	SQG-07B	D	<p>Nationally defined options:</p> <p>1 = Some 1st cycle, 2nd cycle, or the 3rd cycle of basic education, or did not go to school</p> <p>2 = 3rd cycle of basic education</p> <p>3 = High school</p> <p>4 = Technological Specialization Course</p> <p>5 = Baccalaureate</p> <p>6 = License</p> <p>7 = Master</p> <p>8 = Doctor</p> <p>9 = I don't know</p>
Russian Federation	SQG-07B	D	<p>Nationally defined options:</p> <p>1 = Did not finish primary or basic education, or did not go to school</p> <p>2 = Basic general education (9 grades)</p> <p>3 = Secondary general education (11 grades)</p> <p>4 = Initial vocational education</p> <p>5 = Incomplete higher education (two years or more)</p> <p>6 = Higher education: Bachelor's or equivalent (three years or more)</p> <p>7 = Higher education: Master's or equivalent (five years or more), second higher education</p> <p>8 = Candidate or Doctor degree or equivalent</p> <p>9 = I don't know</p>

Slovenia	SQG-07B	D	Nationally defined options: 1 = Primary education or did not go to school 2 = Lower secondary education 3 = Upper secondary education 4 = Post-secondary, non-tertiary education (high school) 5 = Short-cycle tertiary education (2-year study programs, also teacher college or vocational oriented study) 6 = University study of the first Bologna degree 7 = University 4 year study (old programs), or university study of the second Bologna degree, or Master of Science 8 = Doctorate of Science 9 = I don't know
Sweden	SQG-07B	D	Nationally defined options: 1 = No education or less than 9 years in primary school 2 = Lower secondary education 3 = High school education 4 = Post-secondary, non-tertiary education 5 = Higher education up to 2 years (e.g., university college degree) 6 = University or university college degree, equivalent to a Bachelor's degree (3 years) 7 = Higher university degree, equivalent to a Master's degree (4-5 years) 8 = Postgraduate education (licentiate or PhD) 9 = I don't know
United States	SQG-07B	D	National options recoded for international comparability: 1 = Less than high school 2 = Some high school 3 = High school graduate 4 = Option not administered or data not available 5 = Associate's degree (2-year college program) 6 = Bachelor's degree (4-year college program) 7 = Master's degree or professional degree (MD, DDS, lawyer, minister) 8 = Doctorate (Ph.D., or Ed.D.) 9 = I don't know

**SQG-09**

**Question:**

How far in your education do you expect to go?

- 1 = <Upper secondary education—ISCED Level 3>
- 2 = <Post-secondary, non-tertiary education—ISCED Level 4>
- 3 = <Short-cycle tertiary education—ISCED Level 5>
- 4 = <Bachelor's or equivalent level—ISCED Level 6>
- 5 = <Master's or equivalent level—ISCED Level 7>
- 6 = <Doctor or equivalent level—ISCED Level 8>

**Variable Name(s):** PSBG09

Country	Item ID	Code	Documentation
France	SQG-09	D	Nationally defined options: 1 = Upper secondary school 2 = Pre-university level 3 = Short cycle tertiary education 4 = Degree or equivalent level 5 = Master's or equivalent level 6 = Doctor or equivalent level

Italy	SQG-09	D	Nationally defined options: 1 = Upper secondary education (secondary level 2) 2 = Post-secondary, non-tertiary education 3 = Tertiary education level I 4 = Tertiary education level II or equivalent 5 = Postgraduate Master's or equivalent 6 = PhD or equivalent qualification
Lebanon	SQG-09	D	Nationally defined options: 1 = Cycle 4 or secondary education 2 = Normal school - primary education (1 year after secondary cycle) 3 = Normal school - middle education (2 years after secondary cycle) 4 = Bachelor's or equivalent (1st university cycle) 5 = Master's or equivalent (2nd university cycle) 6 = Doctorate or PhD (3rd university cycle)
Norway	SQG-09	D	Nationally defined options: 1 = Upper secondary school 2 = Education beyond upper secondary school (not university or university college) 3 = Short education at university college (1-2 years) 4 = University or university college (at least 3 years) Bachelor's or equivalent 5 = University or university college (at least 5 years) Master's or equivalent 6 = Doctor or equivalent
Portugal	SQG-09	D	National options recoded for international comparability: 1 = High school 2 = Technological Specialization Course 3 = Option not administered or data not available 4 = License 5 = Master 6 = Doctor
Russian Federation	SQG-09	D	National options recoded for international comparability: 1 = Secondary general education (11 grades) 2 = Initial vocational education 3 = Option not administered or data not available 4 = Higher education: Bachelor's or equivalent (three years or more) 5 = Higher education: Master's or equivalent (five years or more) 6 = Candidate or Doctor degree
Slovenia	SQG-09	D	Nationally defined options: 1 = I want to finish gymnasias and get a job 2 = After gymnasias I want to finish non-tertiary education (high school) and get a job 3 = I want to finish 3-year short cycle tertiary study and get a job 4 = I want to finish university study of the first Bologna degree and get a job 5 = I want to finish university study of the second Bologna degree 6 = I want to achieve a Doctorate of Science
Sweden	SQG-09	D	Nationally defined options: 1 = High school education 2 = Post-secondary, non-tertiary education 3 = Higher education up to 2 years (e.g., university college degree) 4 = University or university college degree, equivalent to a Bachelor's degree (3 years) 5 = Higher university degree, equivalent to a Master's degree (4-5 years) 6 = Postgraduate education (licentiate or PhD)

United States	SQG-09	D	National options recoded for international comparability: 1 = High school 2 = Option not administered or data not available 3 = Associate's degree (2-year college program) 4 = Bachelor's degree (4-year college program) 5 = Master's degree or professional degree (MD, DDS, lawyer, minister) 6 = Doctorate (Ph.D., or Ed.D.)
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**SQP-14**

**Question:**

How much time do you spend in physics class each week?

**Variable Name(s):** PSBP14

Country	Item ID	Code	Documentation
France	SQP-14	X	Question not administered or data not available

**SQP-21A-I**

**Question:**

How much do you agree with these statements about the physics you are studying?

- A: Learning physics will help me get ahead in the world
- B: It is important to do well in my physics class
- C: The physics I am studying is not useful for my future
- D: My parents are pleased that I am taking physics
- E: Doing well in physics will help me get into the <university> of my choice
- F: Learning physics does not seem to be a worthwhile exercise
- G: My parents think that it is important that I do well in my physics class
- H: I like telling people I am studying physics
- I: Learning physics will give me more job opportunities

- 1 = Agree a lot
- 2 = Agree a little
- 3 = Disagree a little
- 4 = Disagree a lot

**Variable Name(s):** PSBP21A, PSBP21B, PSBP21C, PSBP21D, PSBP21E, PSBP21F, PSBP21G, PSBP21H, PSBP21I

Country	Item ID	Code	Documentation
France	SQP-21E	D	University, high school, or school
Norway	SQP-21E	D	Education
Portugal	SQP-21E	D	Tertiary education course
Russian Federation	SQP-21E	D	Higher education establishment

**SECTION 3:**  
**ADVANCED MATHEMATICS**  
**TEACHER QUESTIONNAIRE**

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**TQG-04**

**Question:**

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

- 1 = Did not complete <tertiary> education (If you have not completed <tertiary> education, go to #6)
- 2 = <Short-cycle tertiary education—ISCED Level 5>
- 3 = <Bachelor's or equivalent level—ISCED Level 6>
- 4 = <Master's or equivalent level—ISCED Level 7>
- 5 = <Doctor or equivalent level—ISCED Level 8>

**Variable Name(s):** MTBG04

Country	Item ID	Code	Documentation
France	TQG-04	D	Nationally defined options: 1 = Did not complete tertiary education 2 = Short cycle tertiary diploma 3 = Degree or equivalent level 4 = Master's or equivalent level 5 = Doctor or equivalent level
Italy	TQG-04	D	Nationally defined options: 1 = High school - (secondary level 2) 2 = Tertiary education level 1 (3 years or equivalent) 3 = Tertiary education level II (specialization) or equivalent level 4 = Master's or equivalent level 5 = Doctor or equivalent level
Lebanon	TQG-04	D	Nationally defined options: 1 = Did not complete 1 year after secondary education (cycle 4) 2 = Normal school - middle education (2 years after secondary cycle) 3 = First university cycle (Bachelor) 4 = Second university cycle (Master) 5 = Doctorate or PhD
Norway	TQG-04	D	Nationally defined options: 1 = Did not complete education at university or university college 2 = Short education at university or university college 3 = Bachelor's or equivalent 4 = Master's or equivalent 5 = Doctor or equivalent
Portugal	TQG-04	D	National options recoded for international comparability: 1 = Option not administered or data not available 2 = Baccalaureate (3-year university degree) 3 = License (5-year university degree) 4 = Master's degree 5 = Doctoral degree
Russian Federation	TQG-04	D	Nationally defined options: 1 = Secondary general education 2 = Not completed higher education (two years or more) 3 = Higher education: Bachelor's or equivalent (three years or more) 4 = Higher education: Master's or equivalent (five years or more), second university degree 5 = Candidate or Doctor degree

Slovenia	TQG-04	D	Nationally defined options: 1 = Did not complete university education 2 = Short-cycle tertiary education (2-year old study programs, also teacher college) or vocational oriented study (3-years) 3 = University study of the first Bologna degree 4 = University 4 year study (old programs), or university study of the second Bologna degree, or Master of Science 5 = Doctorate of Science
Sweden	TQG-04	D	Nationally defined options: 1 = Did not complete secondary school 2 = Higher education up to 2 years (e.g., university college degree) 3 = University or university college degree, equivalent to a Bachelor's degree 4 = Higher university degree, equivalent to a Master's degree 5 = Postgraduate education (licentiate or PhD)
United States	TQG-04	D	Nationally defined options: 1 = Did not complete a college degree 2 = Associate's degree (2-year college program) 3 = Bachelor's degree (4-year college program) 4 = Master's degree or professional degree (MD, DDS, lawyer, minister) 5 = Doctorate (Ph.D., or Ed.D.)

**TQG-05A-K**

**Question:**

During your <post-secondary> education, what was your major or main area(s) of study?

- A: Mathematics
- B: Physics
- C: Biology
- D: Chemistry
- E: <Earth Science>
- F: Engineering
- G: Education–Mathematics
- H: Education–Physics
- I: Education–Science
- J: Education–General
- K: Other

- 1 = Yes
- 2 = No

**Variable Name(s):** MTBG05A, MTBG05B, MTBG05C, MTBG05D, MTBG05E, MTBG05F, MTBG05G, MTBG05H, MTBG05I, MTBG05J, MTBG05K

Country	Item ID	Code	Documentation
France	TQG-05A-K	D	University
France	TQG-05E	D	Geology
Italy	TQG-05A-K	D	Stem of the question changed: If you continued the study after secondary education, what was your major or main area(s) of study?
Lebanon	TQG-05E	D	Geology
Norway	TQG-05A-K	D	Stem of the question changed: In what subjects do you have 20 "credits" or more from university or university college? (20 "credits" = 60 ECT points = 1 year fulltime study)
Norway	TQG-05E	D	Geo-science



Portugal	TQG-05A-K	D	Higher education
Russian Federation	TQG-05A-K	D	Professional education
Russian Federation	TQG-05E	D	Geography
Slovenia	TQG-05A-K	D	Stem of the question changed: What was your major area(s) of study?
Slovenia	TQG-05E	D	Geography

**TQM-18A-I**

**Question:**

In teaching advanced mathematics to this class, how would you characterize your confidence in doing the following?

- A: Inspiring students to learn advanced mathematics
- B: Showing students a variety of problem solving strategies
- C: Providing challenging tasks for the highest achieving students
- D: Adapting my teaching to engage students' interest
- E: Helping students appreciate the value of learning advanced mathematics
- F: Assessing student comprehension of advanced mathematics
- G: Improving the understanding of struggling students
- H: Making advanced mathematics relevant to students
- I: Developing students' higher-order thinking skills

- 1 = Very high
- 2 = High
- 3 = Medium
- 4 = Low

**Variable Name(s):** MTBM18A, MTBM18B, MTBM18C, MTBM18D, MTBM18E, MTBM18F, MTBM18G, MTBM18H, MTBM18I

Country	Item ID	Code	Documentation
Russian Federation	TQM-18A-I	D	Stem of the question changed: How confident do you feel to do the following in teaching advanced mathematics to the tested class?  Nationally defined categories: 1 = Absolutely confident 2 = Very confident 3 = Confident 4 = Somewhat confident

**TQM-20BA-BH**

**Question:**

How often do you have the students do the following activities on computers, tablets, calculators, or smartphones during advanced mathematics lessons?

- A: Read the textbook or course materials in digital format
- B: Look up ideas and information
- C: Process and analyze data
- D: Draw graphs of functions
- E: Solve equations
- F: Manipulate algebraic expressions
- G: Conduct modeling and simulations
- H: Perform numerical integration

- 1 = Every or almost every day
- 2 = Once or twice a week
- 3 = Once or twice a month
- 4 = Never or almost never

**Variable Name(s):** MTBM20BA, MTBM20BB, MTBM20BC, MTBM20BD, MTBM20BE, MTBM20BF, MTBM20BG, MTBM20BH

Country	Item ID	Code	Documentation
Sweden	TQM-20BA-BH	D	Nationally defined categories: 1 = Every or almost every lesson 2 = About half of the lessons 3 = Some lessons 4 = Never

**TQM-21AA-AH**

**Question:**

The following list includes the main topics addressed by the TIMSS Advanced 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 this year, 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."

- A: Operations with exponential, logarithmic, polynomial, rational, and radical expressions
- B: Operations with complex numbers
- C: Evaluating algebraic expressions (e.g., exponential, logarithmic, polynomial, rational, and radical)
- D: The nth term of arithmetic and geometric sequences and the sums of finite and infinite series
- E: Linear, simultaneous, and quadratic equations and inequalities; radical equations, logarithmic, and exponential equations
- F: Slopes, y-axis intercepts, and points of intersection of straight lines
- G: Equivalent representations of functions, including composite functions, as ordered pairs, tables, graphs, formulas, or words
- H: Properties of functions including domain and range

- 1 = Mostly taught before this year
- 2 = Mostly taught this year
- 3 = Not yet taught or just introduced

**Variable Name(s):** MTBM21AA, MTBM21AB, MTBM21AC, MTBM21AD, MTBM21AE, MTBM21AF, MTBM21AG, MTBM21AH

Country	Item ID	Code	Documentation
Russian Federation	TQM-21AA-AH	X	Option not administered or data not available

**TQM-21BA-BG**

**Question:**

The following list includes the main topics addressed by the TIMSS Advanced 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 this year, 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.”

- A: Limits of functions
  - B: Conditions for continuity and differentiability of functions
  - C: Differentiation of functions (including polynomial, exponential, logarithmic, trigonometric, rational, and radical functions); differentiation of products, quotients, and composite functions
  - D: Using derivatives to solve problems (e.g., in optimization and rates of change)
  - E: Using first and second derivatives to determine slope and local extrema of functions
  - F: Using derivatives to determine points of inflection of functions
  - G: Integrating functions (including polynomial, exponential, trigonometric, and rational functions); evaluating definite integrals, including calculation of areas
- 1 = Mostly taught before this year  
2 = Mostly taught this year  
3 = Not yet taught or just introduced

**Variable Name(s):** MTBM21BA, MTBM21BB, MTBM21BC, MTBM21BD, MTBM21BE, MTBM21BF, MTBM21BG

Country	Item ID	Code	Documentation
Russian Federation	TQM-21BA-BG	X	Option not administered or data not available

**TQM-21CA-CD**

**Question:**

The following list includes the main topics addressed by the TIMSS Advanced 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 this year, 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.”

- A: Properties of geometric figures in two and three dimensions
  - B: Properties of vectors and their sums and differences
  - C: Trigonometric properties of triangles (sine, cosine, and tangent)
  - D: Trigonometric functions and their graphs
- 1 = Mostly taught before this year  
2 = Mostly taught this year  
3 = Not yet taught or just introduced

**Variable Name(s):** MTBM21CA, MTBM21CB, MTBM21CC, MTBM21CD

Country	Item ID	Code	Documentation
Russian Federation	TQM-21CA-CD	X	Option not administered or data not available

**TQM-24**

**Question:**

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?

- 1 = None
- 2 = Less than 6 hours
- 3 = 6–15 hours
- 4 = 16–35 hours
- 5 = More than 35 hours

**Variable Name(s):** MTBM24

Country	Item ID	Code	Documentation
France	TQM-24	D	Teacher training
Russian Federation	TQM-24	D	Stem of the question changed: How many hours total have you spent participating in courses or seminars in mathematics during the last two years?
Slovenia	TQM-24	D	Stem of the question changed: In the past two years, how many hours in total have you spent in education (e.g., workshops, seminars, etc.) for teaching mathematics?

**TQM-26A**

**Question:**

Are you a member of <professional organization for mathematics teachers>?

- 1 = Yes
- 2 = No

**Variable Name(s):** MTBM26A

Country	Item ID	Code	Documentation
Norway	TQM-26A	D	LAMIS (The Norwegian counterpart of NCTM)
Slovenia	TQM-26A	D	The Society of Mathematicians, Physicists and Astronomers (DMFA)

**TQM-26B**

**Question:**

In the past two years, have you regularly participated in activities sponsored by <professional organization for mathematics teachers>?

- 1 = Yes
- 2 = No

**Variable Name(s):** MTBM26B

Country	Item ID	Code	Documentation
Norway	TQM-26B	D	LAMIS (The Norwegian Association of Mathematics Teachers)
Slovenia	TQM-26B	D	The Society of Mathematicians, Physicists and Astronomers (DMFA)

**SECTION 4:**  
**PHYSICS TEACHER**  
**QUESTIONNAIRE**

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**TQG-04**

**Question:**

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

- 1 = Did not complete <tertiary> education (If you have not completed <tertiary> education, go to #6)
- 2 = <Short-cycle tertiary education—ISCED Level 5>
- 3 = <Bachelor's or equivalent level—ISCED Level 6>
- 4 = <Master's or equivalent level—ISCED Level 7>
- 5 = <Doctor or equivalent level—ISCED Level 8>

**Variable Name(s):** PTBG04

Country	Item ID	Code	Documentation
France	TQG-04	D	Nationally defined options: 1 = Did not complete tertiary education 2 = Short cycle tertiary diploma 3 = Degree or equivalent level 4 = Master's or equivalent level 5 = Doctor or equivalent level
Italy	TQG-04	D	Nationally defined options: 1 = High school - (secondary level 2) 2 = Tertiary education level 1 (3 years or equivalent) 3 = Tertiary education level II (specialization) or equivalent level 4 = Master's or equivalent level 5 = Doctor or equivalent level
Lebanon	TQG-04	D	Nationally defined options: 1 = Did not complete 1 year after secondary education (cycle 4) 2 = Normal school - middle education (2 years after secondary cycle) 3 = First university cycle (Bachelor) 4 = Second university cycle (Master) 5 = Doctorate or PhD
Norway	TQG-04	D	Nationally defined options: 1 = Did not complete education at university or university college 2 = Short education at university or university college 3 = Bachelor's or equivalent 4 = Master's or equivalent 5 = Doctor or equivalent
Portugal	TQG-04	D	National options recoded for international comparability: 1 = Option not administered or data not available 2 = Baccalaureate (3-year university degree) 3 = License (5-year university degree) 4 = Master's degree 5 = Doctoral degree
Russian Federation	TQG-04	D	Nationally defined options: 1 = Secondary general education 2 = Not completed higher education (two years or more) 3 = Higher education: Bachelor's or equivalent (three years or more) 4 = Higher education: Master's or equivalent (five years or more), second university degree 5 = Candidate or Doctor degree

Slovenia	TQG-04	D	Nationally defined options: 1 = Did not complete university education 2 = Short-cycle tertiary education (2-year old study programs, also teacher college) or vocational oriented study (3-years) 3 = University study of the first Bologna degree 4 = University 4 year study (old programs), or university study of the second Bologna degree, or Master of Science 5 = Doctorate of Science
Sweden	TQG-04	D	Nationally defined options: 1 = Did not complete secondary school 2 = Higher education up to 2 years (e.g., university college degree) 3 = University or university college degree, equivalent to a Bachelor's degree 4 = Higher university degree, equivalent to a Master's degree 5 = Postgraduate education (licentiate or PhD)
United States	TQG-04	D	Nationally defined options: 1 = Did not complete a college degree 2 = Associate's degree (2-year college program) 3 = Bachelor's degree (4-year college program) 4 = Master's degree or professional degree (MD, DDS, lawyer, minister) 5 = Doctorate (Ph.D., or Ed.D.)

**TQG-05A-K**

**Question:**

During your <post-secondary> education, what was your major or main area(s) of study?

- A: Mathematics
  - B: Physics
  - C: Biology
  - D: Chemistry
  - E: <Earth Science>
  - F: Engineering
  - G: Education–Mathematics
  - H: Education–Physics
  - I: Education–Science
  - J: Education–General
  - K: Other
- 1 = Yes  
2 = No

**Variable Name(s):** PTBG05A, PTBG05B, PTBG05C, PTBG05D, PTBG05E, PTBG05F, PTBG05G, PTBG05H, PTBG05I, PTBG05J, PTBG05K

Country	Item ID	Code	Documentation
France	TQG-05A-K	D	University
France	TQG-05E	D	Geology
Italy	TQG-05A-K	D	Stem of the question changed: If you continued the study after secondary education, what was your major or main area(s) of study?
Lebanon	TQG-05E	D	Geology
Norway	TQG-05A-K	D	Stem of the question changed: In what subjects do you have 20 "credits" or more from university or university college? (20 "credits" = 60 ECT points = 1 year fulltime study)
Norway	TQG-05E	D	Geo-science
Portugal	TQG-05A-K	D	Higher education

Russian Federation	TQG-05A-K	D	Professional education
Russian Federation	TQG-05E	D	Geography
Slovenia	TQG-05A-K	D	Stem of the question changed: What was your major area(s) of study?
Slovenia	TQG-05E	D	Geography

**TQP-16**

**Question:**

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

**Variable Name(s):** PTBP16

Country	Item ID	Code	Documentation
France	TQP-16	D	Stem of the question changed: How much time do you spend teaching physics only (taking chemistry times away) to the students in this class?

**TQP-18A-J**

**Question:**

In teaching physics to this class, how would you characterize your confidence in doing the following?

- A: Inspiring students to learn physics
- B: Explaining physics concepts or principles by doing physics experiments
- C: Providing challenging tasks for the highest achieving students
- D: Adapting my teaching to engage students' interest
- E: Helping students appreciate the value of learning physics
- F: Assessing student comprehension of physics
- G: Improving the understanding of struggling students
- H: Making physics relevant to students
- I: Developing students' higher-order thinking skills
- J: Teaching physics using inquiry methods

- 1 = Very high
- 2 = High
- 3 = Medium
- 4 = Low

**Variable Name(s):** PTBP18A, PTBP18B, PTBP18C, PTBP18D, PTBP18E, PTBP18F, PTBP18G, PTBP18H, PTBP18I, PTBP18J

Country	Item ID	Code	Documentation
Russian Federation	TQP-18A-J	D	Stem of the question changed: How confident do you feel to do the following in teaching physics to the tested class?  Nationally defined categories: 1 = Absolutely confident 2 = Very confident 3 = Confident 4 = Somewhat confident



**TQP-22AA-AI**

**Question:**

The following list includes the main topics addressed by the TIMSS Advanced physics 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 this year, 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."

- A: Applying Newton's laws and laws of motion
- B: Forces, including frictional force, acting on a body
- C: Forces acting on a body moving in a circular path; the body's centripetal acceleration, speed, and circling time
- D: The law of gravitation in relation to the movement of celestial objects
- E: Kinetic and potential energy; conservation of mechanical energy
- F: The law of conservation of momentum; elastic and inelastic collisions
- G: The first law of thermodynamics
- H: Heat transfer and specific heat capacities
- I: The law of ideal gases; expansion of solids and liquids in relation to temperature change

- 1 = Mostly taught before this year
- 2 = Mostly taught this year
- 3 = Not yet taught or just introduced

**Variable Name(s):** PTBP22AA, PTBP22AB, PTBP22AC, PTBP22AD, PTBP22AE, PTBP22AF, PTBP22AG, PTBP22AH, PTBP22AI

Country	Item ID	Code	Documentation
Russian Federation	TQP-22AA-AI	X	Option not administered or data not available

**TQP-22BA-BF**

**Question:**

The following list includes the main topics addressed by the TIMSS Advanced physics 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 this year, 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."

- A: Electrostatic attraction or repulsion between isolated charged particles – Coulomb's law
- B: Charged particles in an electric field
- C: Electrical circuits; using Ohm's law and Joule's law
- D: Charged particles in a magnetic field
- E: Relationship between magnetism and electricity; magnetic fields around electric conductors; electromagnetic induction
- F: Faraday's and Lenz's laws of induction

- 1 = Mostly taught before this year
- 2 = Mostly taught this year
- 3 = Not yet taught or just introduced

**Variable Name(s):** PTBP22BA, PTBP22BB, PTBP22BC, PTBP22BD, PTBP22BE, PTBP22BF

Country	Item ID	Code	Documentation
Russian Federation	TQP-22BA-BF	X	Option not administered or data not available

**TQP-22CA-CG**

**Question:**

The following list includes the main topics addressed by the TIMSS Advanced physics 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 this year, 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."

A: Mechanical waves; the relationship between speed, frequency, and wavelength

B: Electromagnetic radiation; wavelength and frequency of various types of waves (radio, infrared, visible light, x-rays, gamma rays)

C: Thermal radiation, temperature, and wavelength

D: Reflection, refraction, interference, and diffraction

E: The structure of the atom and its nucleus; atomic number and atomic mass; electromagnetic emission and absorption and the behavior of electrons

F: Wave-particle duality and the photoelectric effect; types of nuclear reactions and their role in nature (e.g., in stars) and society; radioactive isotopes

G: Mass-energy equivalence in nuclear reactions and particle transformations

1 = Mostly taught before this year

2 = Mostly taught this year

3 = Not yet taught or just introduced

**Variable Name(s):** PTBP22CA, PTBP22CB, PTBP22CC, PTBP22CD, PTBP22CE, PTBP22CF, PTBP22CG

Country	Item ID	Code	Documentation
Russian Federation	TQP-22CA-CG	X	Option not administered or data not available

**TQP-25**

**Question:**

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 physics?

1 = None

2 = Less than 6 hours

3 = 6–15 hours

4 = 16–35 hours

5 = More than 35 hours

**Variable Name(s):** PTBP25

Country	Item ID	Code	Documentation
France	TQP-25	D	Teacher training
Russian Federation	TQP-25	D	Stem of the question changed: How many hours total have you spent participating in courses or seminars in physics during the last two years?
Slovenia	TQP-25	D	Stem of the question changed: In the past two years, how many hours in total have you spent in education (e.g., workshops, seminars, etc.) for teaching physics?

**TQP-27A**

**Question:**

Are you a member of <professional organization for physics teachers>?

1 = Yes

2 = No

**Variable Name(s):** PTBP27A

Country	Item ID	Code	Documentation
Norway	TQP-27A	D	The Norwegian Physics Teachers' Association
Slovenia	TQP-27A	D	The Society of Mathematicians, Physicists and Astronomers (DMFA)

**TQP-27B**

**Question:**

In the past two years, have you regularly participated in activities sponsored by <professional organization for physics teachers>?

1 = Yes

2 = No

**Variable Name(s):** PTBP27B

Country	Item ID	Code	Documentation
Norway	TQP-27B	D	The Norwegian Physics Teachers' Association
Slovenia	TQP-27B	D	The Society of Mathematicians, Physicists and Astronomers (DMFA)

**SECTION 5:**  
**SCHOOL QUESTIONNAIRE –**  
**ADVANCED MATHEMATICS**  
**& PHYSICS**

TIMSS ADVANCED 2015 USER GUIDE  
FOR THE INTERNATIONAL DATABASE



**IEA**

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

**SCQ-01**

**Question:**

What is the total enrollment of students in your school as of <first day of month TIMSS Advanced testing begins, 2015>?

**Variable Name(s):** MCBG01  
PCBG01

Country	Item ID	Code	Documentation
France	SCQ-01	D	May 1, 2015
Italy	SCQ-01	D	March 1, 2015
Lebanon	SCQ-01	D	April 1, 2015
Norway	SCQ-01	D	February 1, 2015
Portugal	SCQ-01	D	May 1, 2015
Russian Federation	SCQ-01	D	April 1, 2015
Slovenia	SCQ-01	D	Stem of the question changed: What is the total enrollment of high school students in your school?
Sweden	SCQ-01	D	March 1, 2015
United States	SCQ-01	D	March 1, 2015

**SCQ-02**

**Question:**

What is the total enrollment of <twelfth grade> students in your school as of <first day of month TIMSS Advanced testing begins, 2015>?

**Variable Name(s):** MCBG02  
PCBG02

Country	Item ID	Code	Documentation
France	SCQ-02	D	May 1, 2015
Italy	SCQ-02	D	March 1, 2015
Lebanon	SCQ-02	D	April 1, 2015
Norway	SCQ-02	D	February 1, 2015
Portugal	SCQ-02	D	May 1, 2015
Russian Federation	SCQ-02	D	April 1, 2015
Slovenia	SCQ-02	D	Stem of the question changed: What is the total enrollment of 4th year baccalaureate students?
Sweden	SCQ-02	D	March 1, 2015
United States	SCQ-02	D	March 1, 2015

**SCQ-06A-B**

**Question:**

What percentage of <twelfth grade> students in your school are taking each of the following?

A: <Advanced Mathematics>

B: <Physics>

**Variable Name(s):** MCBG06A, MCBG06B  
PCBG06A, PCBG06B

Country	Item ID	Code	Documentation
France	SCQ-06A-B	D	Stem of the question changed: What percentage of twelfth grade students in your school are in the scientific track?
Norway	SCQ-06A	D	Mathematics R2
Norway	SCQ-06B	D	Physics 2
Portugal	SCQ-06A	D	Mathematics A
Russian Federation	SCQ-06A	D	Advanced mathematics (8 hours a week or more)
Russian Federation	SCQ-06B	D	Advanced physics (4 hours a week or more)
Slovenia	SCQ-06A	D	Gang punched to "100"
Sweden	SCQ-06A	D	Advanced Mathematics (minimum math 4)
Sweden	SCQ-06B	D	Physics 2
United States	SCQ-06A	D	Advanced mathematics, such as calculus courses
United States	SCQ-06B	D	Advanced physics, such as college preparatory physics or AP Physics

**SCQ-08A**

**Question:**

Does your school have a school library?

1 = Yes

2 = No

**Variable Name(s):** MCBG08A  
PCBG08A

Country	Item ID	Code	Documentation
United States	SCQ-08A	X	Option not administered or data not available

**SCQ-08BA-BB**

**Question:**

Approximately how many books (print and digital) with different titles does your school library have (exclude magazines and periodicals)?

A: Print

B: Digital

1 = 250 or fewer

2 = 251–500

3 = 501–2,000

4 = 2,001–5,000

5 = 5,001–10,000

6 = More than 10,000

**Variable Name(s):** MCBG08BA, MCBG08BB  
PCBG08BA, PCBG08BB

Country	Item ID	Code	Documentation
United States	SCQ-08BA-BB	X	Option not administered or data not available

**SCQ-08CA-CB**

**Question:**

Approximately how many titles of magazines and other periodicals (print and digital) does your school library have?

A: Print

B: Digital

1 = 0

2 = 1–5

3 = 6–10

4 = 11–30

5 = 31 or more

**Variable Name(s):** MCBG08CA, MCBG08CB  
PCBG08CA, PCBG08CB

Country	Item ID	Code	Documentation
United States	SCQ-08CA-CB	X	Option not administered or data not available

**SCQ-13A-D**

**Question:**

Does your school currently use any incentives (e.g., pay, housing, signing bonus, smaller classes) to recruit or retain <twelfth grade> teachers in the following fields?

- A: Advanced mathematics
- B: Physics
- C: Computer science/information technology
- D: Other

- 1 = Yes
- 2 = No

**Variable Name(s):** MCBG13A, MCBG13B, MCBG13C, MCBG13D  
PCBG13A, PCBG13B, PCBG13C, PCBG13D

Country	Item ID	Code	Documentation
Norway	SCQ-13A-D	D	Advanced level

**SCQ-17**

**Question:**

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

- 1 = Did not complete <Bachelor's or equivalent level—ISCED Level 6>
- 2 = <Bachelor's or equivalent level—ISCED Level 6>
- 3 = <Master's or equivalent level—ISCED Level 7>
- 4 = <Doctor or equivalent level—ISCED Level 8>

**Variable Name(s):** MCBG17  
PCBG17

Country	Item ID	Code	Documentation
France	SCQ-17	D	Nationally defined options: 1 = Did not complete a degree or equivalent level 2 = Degree or equivalent level 3 = Master's or equivalent level 4 = Doctor or equivalent level
Italy	SCQ-17	D	Nationally defined options: 1 = Upper secondary education or short-cycle tertiary education 2 = Tertiary education level II certificate 3 = Master's or equivalent level 4 = Doctor or equivalent level
Lebanon	SCQ-17	D	Nationally defined options: 1 = Did not complete Bachelor's or equivalent level 2 = Bachelor's or equivalent level 3 = Master's or equivalent level 4 = Doctor or equivalent level
Norway	SCQ-17	D	Nationally defined options: 1 = Did not complete Bachelor's or equivalent 2 = Bachelor's or equivalent 3 = Master's or equivalent 4 = Doctor or equivalent



Portugal	SCQ-17	D	Nationally defined options: 1 = Did not complete license 2 = License 3 = Master's 4 = Doctor
Russian Federation	SCQ-17	D	Nationally defined options: 1 = Did not complete higher education or initial vocational education 2 = Higher education: Bachelor or equivalent (three years or more) 3 = Higher education: Master or equivalent (five years or more), second university degree 4 = Candidate or Doctor degree
Slovenia	SCQ-17	D	Nationally defined options: 1 = Did not complete university study of the first Bologna degree 2 = University study of the first Bologna degree 3 = University 4 year study (old programs), or university study of the second Bologna degree, or Master of Science 4 = Doctorate of Science
Sweden	SCQ-17	D	Nationally defined options: 1 = Did not complete higher education (e.g., university or college degree) 2 = University or university college degree (e.g., Bachelor's degree) 3 = Higher university degree (e.g., Master's degree) 4 = Postgraduate education (licentiate or PhD)
United States	SCQ-17	D	Nationally defined options: 1 = Did not complete Bachelor's degree (4-year college program) 2 = Bachelor's degree (4-year college program) 3 = Master's degree or professional degree (MD, DDS, lawyer, minister) 4 = Doctorate (Ph.D., or Ed.D.)

**SCQ-18A-B**

**Question:**

Do you hold the following degrees in educational leadership?

A: <Master's or equivalent level—ISCED Level 7>

B: <Doctor or equivalent level—ISCED Level 8>

1 = Yes

2 = No

**Variable Name(s):** MCBG18A, MCBG18B  
PCBG18A, PCBG18B

Country	Item ID	Code	Documentation
France	SCQ-18A	D	Master's or equivalent level
France	SCQ-18B	D	Doctor or equivalent level
Italy	SCQ-18A	D	Master's or equivalent level
Italy	SCQ-18B	D	Doctor or equivalent level
Lebanon	SCQ-18A	D	Master or equivalent level
Lebanon	SCQ-18B	D	Doctor or equivalent level
Norway	SCQ-18A	D	Master's degree or equivalent
Norway	SCQ-18B	D	Doctor's degree or equivalent

Portugal	SCQ-18A	D	Master
Portugal	SCQ-18B	D	Doctor
Russian Federation	SCQ-18A	D	Higher education: Master or equivalent (five years or more), second university degree
Russian Federation	SCQ-18B	D	Candidate or Doctor degree
Slovenia	SCQ-18A	D	University 4 year study (old programs), or university study of the second Bologna degree, or Master of Science
Slovenia	SCQ-18B	D	Doctorate of Science
Sweden	SCQ-18A	D	Higher university degree, equivalent to a Master's degree
Sweden	SCQ-18B	D	Postgraduate education (licentiate or PhD)
United States	SCQ-18A	D	Master's degree or professional degree (MD, DDS, lawyer, minister)
United States	SCQ-18B	D	Doctorate (Ph.D., or Ed.D.)



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