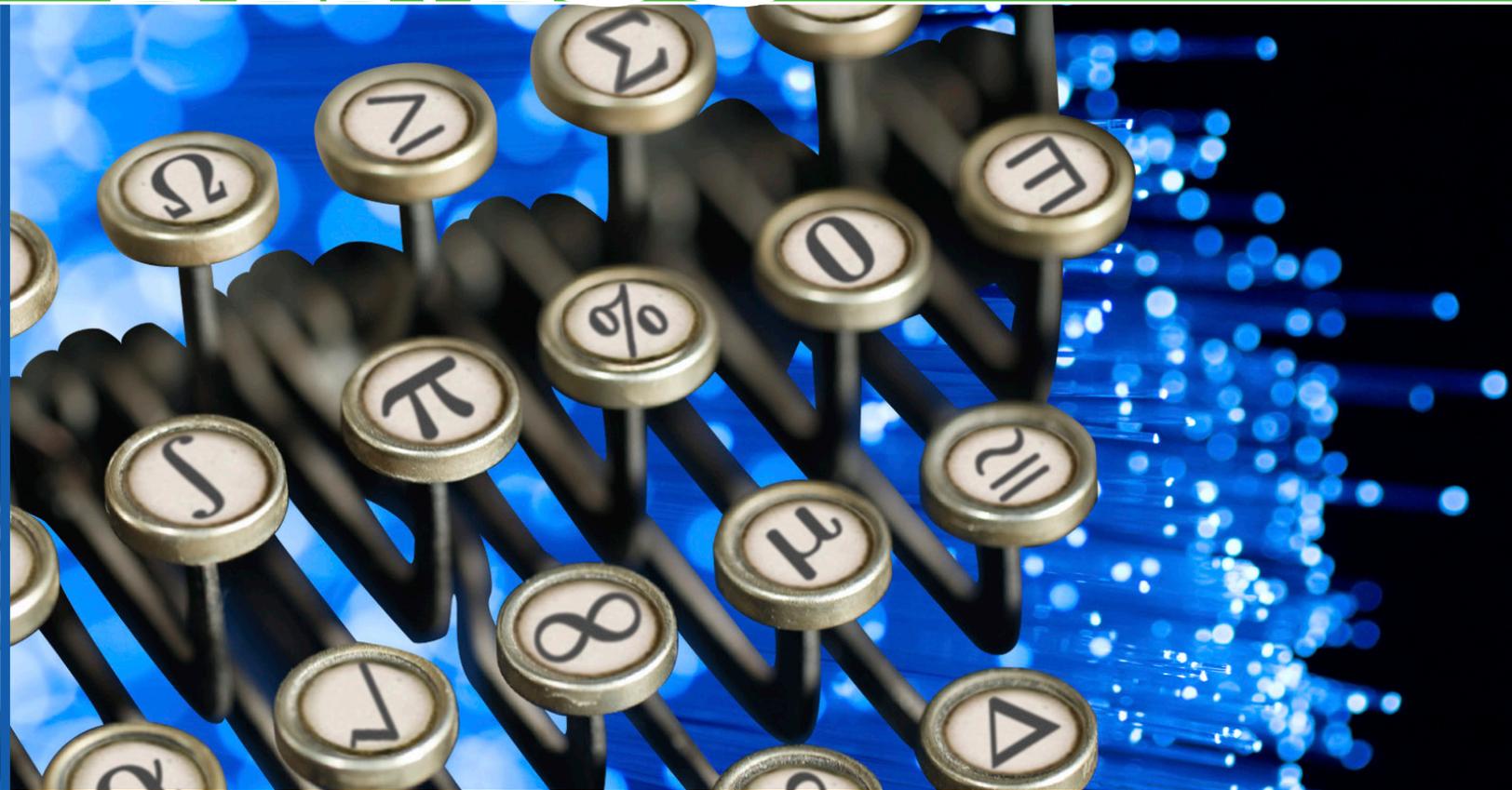


TRENDS IN INTERNATIONAL MATHEMATICS AND SCIENCE STUDY

# TIMSS



## TIMSS Advanced 2008 User Guide

for the International Database

# Supplement 2

National Adaptations of International Background  
Questionnaires



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

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# Supplement 2

## National Adaptations of International Background Questionnaires

### Overview

This supplement describes national adaptations made to the international version of the TIMSS Advanced 2008 background 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 2008 background variables. Background questionnaire 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 2008 background questionnaire types.

- 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 Schools)
- Section 6: School Questionnaire (Physics Schools)

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 with the following meanings:

**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 at the request of the country, or removed due to other data problems).

# Section 1

Advanced Mathematics  
Student Questionnaire

**SQM3-01A-B****Question:**

When were you born?

A: Year

B: Month

1 = 1986

2 = 1987

3 = 1988

4 = 1989

5 = 1990

6 = 1991

7 = 1992

8 = 1993

9 = Other

1 = January

2 = February

3 = March

4 = April

5 = May

6 = June

7 = July

8 = August

9 = September

10 = October

11 = November

12 = December

**Variable Name(s):** MS2GBRTY, MS2GBRTM

Country	Item ID	Code	Documentation
ARMENIA	SQM3-01A	D	National options recoded to fit international categories: 1 = 1986 2 = 1987 3 = 1988 4 = 1989 5 = 1990 6 = 1991 7 = 1992 8 = Option not administered or data not available 9 = 1985/Other
ITALY	SQM3-01A	D	National options recoded to fit international categories: 1 = Option not administered or data not available 2 = Option not administered or data not available 3 = Option not administered or data not available 4 = 1989 5 = 1990 6 = 1991 7 = 1992 8 = 1993 9 = Other

**SQM3-04****Question:**

About how many books are there in your home? (Do not count magazines, newspapers, or your school books.)

1 = None or very few (0-10 books)

2 = Enough to fill one shelf (11-25 books)

3 = Enough to fill one bookcase (26-100 books)

4 = Enough to fill two bookcases (101-200 books)

5 = Enough to fill three or more bookcases (more than 200 books)

**Variable Name(s):** MS2GBOOK

Country	Item ID	Code	Documentation
RUSSIAN FEDERATION	SQM3-04	D	National options recoded to fit international categories: 1 = None or very few books (0-10 books) 2 = Enough to fill one shelf (11-25 books) 3 = Enough to fill one bookcase (26-100 books) 4 = Enough to fill two bookcases (101-200 books) 5 = Enough to fill three or more bookcases (201-1000 books)/Large library (more than 1000 books)

**SQM3-05A-I****Question:**

Do you have any of these things at your home?

A: Computer (do not include PlayStation®, GameCube®, Xbox®, or other TV/video game computers)

B: Internet connection

C: Your own computer

D: Your own graphing calculator

E: Study desk/table for your use

F: <country-specific>

G: <country-specific>

H: <country-specific>

I: <country-specific>

1 = Yes

2 = No

**Variable Name(s):** MS2GTH01, MS2GTH02, MS2GTH03, MS2GTH04, MS2GTH05, MS2GTH06, MS2GTH07, MS2GTH08, MS2GTH09

Country	Item ID	Code	Documentation
ARMENIA	SQM3-05F	D	Bible
ARMENIA	SQM3-05G-I	X	Option not administered or data not available
IRAN, ISLAMIC REP.	SQM3-05F	D	Private room
IRAN, ISLAMIC REP.	SQM3-05G	D	Car
IRAN, ISLAMIC REP.	SQM3-05H	D	Cell phone
IRAN, ISLAMIC REP.	SQM3-05I	D	Camera recorder
ITALY	SQM3-05F	D	A room on your own
ITALY	SQM3-05G	D	Anti theft system
ITALY	SQM3-05H	D	Air-conditioner
ITALY	SQM3-05I	D	A video camera of your own
LEBANON	SQM3-05F	D	Scientific encyclopedia
LEBANON	SQM3-05G	D	Scientific magazines
LEBANON	SQM3-05H	D	Dictionary
LEBANON	SQM3-05I	D	Scientific computer programs
NETHERLANDS	SQM3-05F-I	X	Option not administered or data not available
NORWAY	SQM3-05C	X	Option not administered or data not available
NORWAY	SQM3-05F	D	Dictionary
NORWAY	SQM3-05G	D	Encyclopedia
NORWAY	SQM3-05H	D	Atlas
NORWAY	SQM3-05I	D	Globe
PHILIPPINES	SQM3-05F	D	Radio
PHILIPPINES	SQM3-05G	D	Television (without cable)
PHILIPPINES	SQM3-05H	D	Cable TV
PHILIPPINES	SQM3-05I	D	VHS/VCD/DVD
RUSSIAN FEDERATION	SQM3-05F	D	Digital camera or camera-recorder
RUSSIAN FEDERATION	SQM3-05G	D	A dishwasher
RUSSIAN FEDERATION	SQM3-05H	D	A home cinema



RUSSIAN FEDERATION	SQM3-05I	D	A satellite television
SLOVENIA	SQM3-05F	D	Your own room
SLOVENIA	SQM3-05G	D	Your own car
SLOVENIA	SQM3-05H	D	Real estate (not including your home)
SLOVENIA	SQM3-05I	D	Artistic objects
SWEDEN	SQM3-05F	D	Dictionary
SWEDEN	SQM3-05G	D	Encyclopedia
SWEDEN	SQM3-05H	D	Subscription for a magazine about nature or technics
SWEDEN	SQM3-05I	X	Option not administered or data not available

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**SQM3-06A-B****Question:**

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

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

1 = Some <ISCED Level 1 or 2 > or did not go to school

2 = <ISCED 2>

3 = <ISCED 3>

4 = <ISCED 4>

5 = <ISCED 5B>

6 = <ISCED 5A, first degree>

7 = Beyond <ISCED 5A, first degree>

8 = I don't know

**Variable Name(s):** MS2GHLEM, MS2GHLEF

Country	Item ID	Code	Documentation
ARMENIA	SQM3-06A-B	D	National options recoded to fit international categories: 1 = Elementary school/1 or 2 years of school or did not go to school 2 = Basic general (8 years) 3 = Secondary school (10 years) 4 = Preliminary professional 5 = Option not administered or data not available 6 = Higher education 7 = Ph.D. or Doctor of Science 8 = I don't know
IRAN, ISLAMIC REP.	SQM3-06A-B	D	Nationally defined options: 1 = Did not go to school or did not complete primary education 2 = Low secondary 3 = High school 4 = Pre university course or short time professional course such as computer 5 = Associate degree 6 = First degree 7 = Beyond first degree 8 = I don't know
ITALY	SQM3-06A-B	D	National options recoded to fit international categories: 1 = Some years of elementary school or some secondary school 2 = Lower secondary school diploma 3 = High school diploma or vocational training certificate 4 = Option not administered or data not available 5 = Courses after secondary school diploma or higher educational degree (ISEF - stands for Physical Education Higher Institution - Academy of Arts, Conservatory) 6 = University diploma 7 = Educational degree higher than university diploma (doctoral degree, specialization school, advanced training course or master) 8 = I don't know
LEBANON	SQM3-06A-B	D	National options recoded to fit international categories: 1 = Did not go to school/Some primary or middle school 2 = Some of the secondary level 3 = Secondary level 4 = Part of a professional or technical training program 5 = Option not administered or data not available 6 = Bachelor degree 7 = Master degree or higher 8 = I don't know



NETHERLANDS	SQM3-06A-B	D	<p>National options recoded to fit international categories:</p> <p>1 = Finished/not finished primary school, not been to school  2 = Lower secondary general and lower vocational education  3 = Upper secondary general and vocational education  4 = Option not administered or data not available  5 = Higher vocational education, 2-3 years training  6 = Higher vocational education (4 years, equivalent to bachelor)  7 = University/University and PHD  8 = I don't know</p>
NORWAY	SQM3-06A-B	D	<p>National options recoded to fit international categories:</p> <p>1 = Did go to or did not complete primary school/Primary school  2 = Lower secondary school  3 = Upper secondary school  4 = Option not administered or data not available  5 = Short study at college (1-2 years)  6 = University or college (at least 3 years)  7 = University or college (at least 5 years)  8 = I don't know</p>
PHILIPPINES	SQM3-06A-B	D	<p>Nationally defined options:</p> <p>1 = Some primary education or did not go to school  2 = Primary education (elementary)  3 = Secondary education (1st to 4th year high school)  4 = Vocational/technical program (1-2 years)  5 = Vocational/technical program (3-4 years)  6 = Academic bachelor's degree  7 = MA/Ph.D.  8 = I don't know</p>
RUSSIAN FEDERATION	SQM3-06A-B	D	<p>Nationally defined options:</p> <p>1 = Not complete basic education or did not go to school  2 = Basic education (finish Grade 9)  3 = Secondary general education (finish Grade 11)  4 = Primary vocational education  5 = Secondary vocational education  6 = Higher education  7 = Candidate or doctor of sciences (PhD)  8 = I don't know</p>
SLOVENIA	SQM3-06A-B	D	<p>Nationally defined options:</p> <p>1 = Some elementary school or did not go to school  2 = Elementary school  3 = Secondary school  4 = Vocational course after secondary school  5 = 2-3 years study  6 = 4-5 years study  7 = Master or PhD  8 = I don't know</p>
SWEDEN	SQM3-06A	D	<p>Stem of the question changed:  What is the highest level of education completed by your mother (or female guardian)?</p> <p>Nationally defined options:</p> <p>1 = No education or less than 9 years in school  2 = 9 year compulsory school  3 = Upper secondary school leaving certificate  4 = Post secondary non-tertiary education  5 = University Certificate (at least 80 points, less than 120 points)  6 = University degree (120 - 160 points)  7 = University degree (more than 160 points)  8 = I don't know</p>

SWEDEN	SQM3-06B	D	<p>Stem of the question changed: What is the highest level of education completed by your father (or male guardian)?</p> <p>Nationally defined options: 1 = No education or less than 9 years in school 2 = 9 year compulsory school 3 = Upper secondary school leaving certificate 4 = Post secondary non-tertiary education 5 = University Certificate (at least 80 points, less than 120 points) 6 = University degree (120 - 160 points) 7 = University degree (more than 160 points) 8 = I don't know</p>
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**SQM3-07A-B****Question:**

A: Was your mother (or stepmother or female guardian) born in <country>?

B: Was your father (or stepfather or male guardian) born in <country>?

1 = Yes

2 = No

**Variable Name(s):** MS2GMBRN, MS2GFBRN

Country	Item ID	Code	Documentation
NETHERLANDS	SQM3-07A	D	<p>Stem of the question changed: In which country is your mother who lives at your home, born? Your mother can also be your stepmother or foster mother. Home is where you live most days of the week.</p> <p>National options recoded to fit international categories: 1 = Netherlands 2 = The Netherlands Antilles/Surinam/Morocco/ Turkey/Moluccas/Other country</p>
NETHERLANDS	SQM3-07B	D	<p>Stem of the question changed: In which country is your father, who lives at your home, born? Your father can also be your stepfather or foster father. Home is where you live most days of the week.</p> <p>National options recoded to fit international categories: 1 = Netherlands 2 = The Netherlands Antilles/Surinam/Morocco/Turkey/Moluccas/Other country</p>



**SQM3-08A-B****Question:**

A: Were you born in <country>?

1 = Yes

2 = No

B: If you were not born in <country>, how old were you when you came to <country>?

1 = Older than 10 years old

2 = 5 to 10 years old

3 = Younger than 5 years old

**Variable Name(s):** MS2GBORN, MS2GBRNC

Country	Item ID	Code	Documentation
NETHERLANDS	SQM3-08A	D	Stem of the question changed: In which country are you born?  National options recoded to fit international categories: 1 = Netherlands 2 = The Netherlands Antilles/Surinam/Morocco/Turkey/Mold country

**SQM3-09****Question:**

After <secondary school>, do you intend to continue your education?

1 = Yes

2 = Yes, but not immediately

3 = No

**Variable Name(s):** MS2GITCE

Country	Item ID	Code	Documentation
IRAN, ISLAMIC REP.	SQM3-09	D	After pre university, do you intend to continue your education?
NETHERLANDS	SQM3-09	D	After VWO, do you intend to continue your education?
PHILIPPINES	SQM3-09	D	After fourth year high school, do you intend to continue your education?
RUSSIAN FEDERATION	SQM3-09	D	After school, do you intend to continue your education?



**SQM3-10****Question:**

If you plan to continue your education, which of the following comes closest to the area you intend to study most?

- 1 = SCIENCE (e.g., physics, chemistry, biological, earth sciences)
- 2 = HEALTH SCIENCES (e.g., dentistry, medicine, pharmacy, veterinary medicine)
- 3 = ENGINEERING (e.g., chemical engineering, civil engineering, electrical engineering, mechanical engineering)
- 4 = BUSINESS (e.g., accounting, marketing, finance, administration, management)
- 5 = COMPUTER and INFORMATION SCIENCES (e.g., systems analyst)
- 6 = MATHEMATICS (e.g., calculus, statistics)
- 7 = SOCIAL SCIENCES (e.g., psychology, economics, sociology, law)
- 8 = OTHER FIELD OF STUDY

**Variable Name(s):** MS2GIAOS

Country	Item ID	Code	Documentation
SLOVENIA	SQM3-10	D	National options recoded to fit international options: 1 = Science (e.g., physics, chemistry, biological, earth sciences) 2 = Health sciences (e.g., dentistry, medicine, pharmacy, veterinary medicine) 3 = Engineering (e.g., chemical engineering, civil engineering, electrical engineering, mechanical engineering) 4 = Business (e.g., accounting, marketing, finance, administration, management) 5 = Computer and information sciences(e.g., systems analyst) 6 = Mathematics (e.g., calculus, statistics) 7 = Social sciences (e.g., psychology, economics, sociology, law)/Languages (e.g., Slovene, English, German...) 8 = Other

**SQM3-12A-F****Question:**

On a normal school day, how much time, on average, do you spend before or after school doing each of these things?

- A: I do schoolwork (study or homework)
  - B: I take part in organized activities (e.g., sports, music, clubs, community service, etc.)
  - C: I use a computer for things other than schoolwork (e.g., messaging, email, gaming, music, etc.)
  - D: I spend time with friends
  - E: I work at a paid job
  - F: I watch movies or television
- 1 = No time
  - 2 = Less than 1 hour
  - 3 = 1-2 hours
  - 4 = More than 2 but less than 4 hours
  - 5 = 4 or more hours

**Variable Name(s):** MS2GSTSW, MS2GSTAC, MS2GSTUC, MS2GSTFR, MS2GSTPJ, MS2GSTTV

Country	Item ID	Code	Documentation
SLOVENIA	SQM3-12B	X	Option not administered or data not available



**SQM3-13A-M****Question:**

Why are you studying advanced mathematics?

A: I enjoy solving mathematical problems

B: I usually do well in mathematics

C: Advanced mathematics lessons are interesting

D: Studying or doing mathematics homework does not take me a lot of time

E: I need advanced mathematics to pursue the career of my choice

F: Advanced mathematics has good teachers

G: My parents advised me to study advanced mathematics

H: I expect that I will easily pass the tests

I: I like the way advanced mathematics is taught in my school

J: Studying advanced mathematics will give me more options after finishing <secondary school>

K: A teacher advised me to study advanced mathematics

L: My friends also are studying advanced mathematics

M: The <study coordinator/mentor> of my school advised me to study advanced mathematics

1 = Very important

2 = Important

3 = Unimportant

4 = Very unimportant

**Variable Name(s):** MS2MWSEC, MS2MWSWM, MS2MWSMI, MS2MWSLT, MS2MWSPC, MS2MWSGT, MS2MWSPA, MS2MWSEP, MS2MWSWT, MS2MWSMO, MS2MWSTA, MS2MWSFA, MS2MWSMA

Country	Item ID	Code	Documentation
ARMENIA	SQM3-13M	D	The class-mentor of my school advised me to study advanced mathematics
IRAN, ISLAMIC REP.	SQM3-13J	D	Studying advanced mathematics will give me more options after finishing pre university course
IRAN, ISLAMIC REP.	SQM3-13M	D	The counselor of my school advised me to study advanced mathematics
ITALY	SQM3-13F	D	The mathematics teachers are good
ITALY	SQM3-13J	D	Studying advanced mathematics will give me more options after finishing secondary high school
ITALY	SQM3-13M	X	Option not administered or data not available
NETHERLANDS	SQM3-13J	D	Studying advanced mathematics will give me more options after finishing VWO
NETHERLANDS	SQM3-13M	D	The study mentor of my school advised me to study advanced mathematics
NORWAY	SQM3-13J	D	Studying advanced mathematics will give me more options after finishing upper secondary school
NORWAY	SQM3-13M	D	The study coordinator of my school advised me to take this course
PHILIPPINES	SQM3-13J	D	Studying advanced mathematics will give me more options after finishing fourth year high school
PHILIPPINES	SQM3-13M	D	The mathematics teacher/adviser/guidance counselor of my school advised me to study advanced mathematics
RUSSIAN FEDERATION	SQM3-13H	D	I think it will be easy for me to cope with mathematics works
RUSSIAN FEDERATION	SQM3-13M	D	The head of the teaching/curriculum department or teacher of my school advised me to study advanced mathematics
SLOVENIA	SQM3-13M	D	The class mentor of my school advised me to study advanced mathematics

**SQM3-14A-B****Question:**

A: How much time do you spend in mathematics class each week?

B: Are you taking or have you taken <the physics track/course that defines the physics population>?

1 = Yes

2 = No

**Variable Name(s):** MS2MHMMW, MS2MPHCO

Country	Item ID	Code	Documentation
ITALY	SQM3-14B	D	Are you attending or have attended a course in physics?
NETHERLANDS	SQM3-14B	D	Physics 2
NORWAY	SQM3-14B	D	3 FY
PHILIPPINES	SQM3-14B	X	Question not administered or data not available
RUSSIAN FEDERATION	SQM3-14B	D	Are you taking or have you taken the advanced physics course with 4 lessons per week or more?
SLOVENIA	SQM3-14B	D	Do you have physics or preparation for physics Matura exam this year?

**SQM3-15A-F****Question:**

How often do you do these activities in your mathematics lessons?

A: We listen to the teacher present new material

B: We work problems on our own

C: We work on problems together with other students

D: We review what has been taught

E: We review homework

F: We have oral or written tests or quizzes

1 = Every or almost every lessons

2 = About half the lessons

3 = Some lessons

4 = Never

**Variable Name(s):** MS2MACLT, MS2MACWP, MS2MACWT, MS2MACRT, MS2MACRH, MS2MACTQ

Country	Item ID	Code	Documentation
SLOVENIA	SQM3-15F	X	Option not administered or data not available



**SQM3-17AA-AC****Question:**

How often do you use the following in your mathematics lessons?

A: Calculator

B: Computer

C: Other computing technology

1 = Every or almost every lessons

2 = About half the lessons

3 = Some lessons

4 = Never

**Variable Name(s):** MS2MULCA, MS2MULCO, MS2MULOT

Country	Item ID	Code	Documentation
SWEDEN	SQM3-17AC	X	Option not administered or data not available

**SQM3-20****Question:**

How often do you work with a mathematics tutor?

1 = More than once a week

2 = About once a week

3 = About once a month

4 = Once in a while when I need extra help

5 = Never

**Variable Name(s):** MS2MWTUT

Country	Item ID	Code	Documentation
NORWAY	SQM3-20	X	Question not administered or data not available
SWEDEN	SQM3-20	X	Question not administered or data not available

**ITLANG****Question:**

LANGUAGE OF TEST

**Variable Name(s):** ITLANG

Country	Item ID	Code	Documentation
ARMENIA	ITLANG	D	1 = Armenian
IRAN, ISLAMIC REP.	ITLANG	D	1 = Farsi
ITALY	ITLANG	D	1 = Italian
LEBANON	ITLANG	D	1 = French 2 = English
NETHERLANDS	ITLANG	D	1 = Dutch
NORWAY	ITLANG	D	1 = Bokmal/Nynorsk
PHILIPPINES	ITLANG	D	1 = English
RUSSIAN FEDERATION	ITLANG	D	1 = Russian
SLOVENIA	ITLANG	D	1 = Slovene
SWEDEN	ITLANG	D	1 = Swedish

# Section 2

Physics Student  
Questionnaire

**SQP3-01A-B****Question:**

When were you born?

A: Year

B: Month

1 = 1986

1 = January

2 = 1987

2 = February

3 = 1988

3 = March

4 = 1989

4 = April

5 = 1990

5 = May

6 = 1991

6 = June

7 = 1992

7 = July

8 = 1993

8 = August

9 = Other

9 = September

10 = October

11 = November

12 = December

**Variable Name(s):** PS2GBRTY, PS2GBRTM

Country	Item ID	Code	Documentation
ARMENIA	SQP3-01A	D	National options recoded to fit international categories: 1 = 1986 2 = 1987 3 = 1988 4 = 1989 5 = 1990 6 = 1991 7 = 1992 8 = Option not administered or data not available 9 = 1985/Other
ITALY	SQP3-01A	D	National options recoded to fit international categories: 1 = Option not administered or data not available 2 = Option not administered or data not available 3 = Option not administered or data not available 4 = 1989 5 = 1990 6 = 1991 7 = 1992 8 = 1993 9 = Other

**SQP3-04****Question:**

About how many books are there in your home? (Do not count magazines, newspapers, or your school books.)

1 = None or very few (0-10 books)

2 = Enough to fill one shelf (11-25 books)

3 = Enough to fill one bookcase (26-100 books)

4 = Enough to fill two bookcases (101-200 books)

5 = Enough to fill three or more bookcases (more than 200 books)

**Variable Name(s):** PS2GBOOK

Country	Item ID	Code	Documentation
RUSSIAN FEDERATION	SQP3-04	D	National options recoded to fit international categories: 1 = None or very few books (0-10 books) 2 = Enough to fill one shelf (11-25 books) 3 = Enough to fill one bookcase (26-100 books) 4 = Enough to fill two bookcases (101-200 books) 5 = Enough to fill three or more bookcases (201-1000 books)/Large library (more than 1000 books)

**SQP3-05A-I****Question:**

Do you have any of these things at your home?

A: Computer (do not include PlayStation®, GameCube®, Xbox®, or other TV/video game computers)

B: Internet connection

C: Your own computer

D: Your own graphing calculator

E: Study desk/table for your use

F: <country-specific>

G: <country-specific>

H: <country-specific>

I: <country-specific>

1 = Yes

2 = No

**Variable Name(s):** PS2GTH01, PS2GTH02, PS2GTH03, PS2GTH04, PS2GTH05, PS2GTH06, PS2GTH07, PS2GTH08, PS2GTH09

Country	Item ID	Code	Documentation
ARMENIA	SQP3-05F	D	Bible
ARMENIA	SQP3-05G-I	X	Option not administered or data not available
IRAN, ISLAMIC REP.	SQP3-05F	D	Private room
IRAN, ISLAMIC REP.	SQP3-05G	D	Car
IRAN, ISLAMIC REP.	SQP3-05H	D	Cell phone
IRAN, ISLAMIC REP.	SQP3-05I	D	Camera recorder
ITALY	SQP3-05F	D	A room on your own
ITALY	SQP3-05G	D	Anti theft system
ITALY	SQP3-05H	D	Air-conditioner
ITALY	SQP3-05I	D	A video camera of your own
LEBANON	SQP3-05F	D	Scientific encyclopedia
LEBANON	SQP3-05G	D	Scientific magazines
LEBANON	SQP3-05H	D	Dictionary
LEBANON	SQP3-05I	D	Scientific computer programs
NETHERLANDS	SQP3-05F-I	X	Option not administered or data not available
NORWAY	SQP3-05C	X	Option not administered or data not available
NORWAY	SQP3-05F	D	Dictionary
NORWAY	SQP3-05G	D	Encyclopedia
NORWAY	SQP3-05H	D	Atlas
NORWAY	SQP3-05I	D	Globe
RUSSIAN FEDERATION	SQP3-05F	D	Digital camera or camera-recorder
RUSSIAN FEDERATION	SQP3-05G	D	A dishwasher
RUSSIAN FEDERATION	SQP3-05H	D	A home cinema
RUSSIAN FEDERATION	SQP3-05I	D	A satellite television
SLOVENIA	SQP3-05F	D	Your own room
SLOVENIA	SQP3-05G	D	Your own car
SLOVENIA	SQP3-05H	D	Real estate (not including your home)



SLOVENIA	SQP3-05I	D	Artistic objects
SWEDEN	SQP3-05F	D	Dictionary
SWEDEN	SQP3-05G	D	Encyclopedia
SWEDEN	SQP3-05H	D	Subscription for a magazine about nature or technics
SWEDEN	SQP3-05I	X	Option not administered or data not available

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**SQP3-06A-B****Question:**

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

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

1 = Some <ISCED Level 1 or 2 > or did not go to school

2 = <ISCED 2>

3 = <ISCED 3>

4 = <ISCED 4>

5 = <ISCED 5B>

6 = <ISCED 5A, first degree>

7 = Beyond <ISCED 5A, first degree>

8 = I don't know

**Variable Name(s):** PS2GHLEM, PS2GHLEF

Country	Item ID	Code	Documentation
ARMENIA	SQP3-06A-B	D	National options recoded to fit international categories: 1 = Elementary school/1 or 2 years of school or did not go to school 2 = Basic general (8 years) 3 = Secondary school (10 years) 4 = Preliminary professional 5 = Option not administered or data not available 6 = Higher education 7 = Ph.D. or Doctor of Science 8 = I don't know
IRAN, ISLAMIC REP.	SQP3-06A-B	D	Nationally defined options: 1 = Did not go to school or did not complete primary education 2 = Low secondary 3 = High school 4 = Pre university course or short time professional course such as computer 5 = Associate degree 6 = First degree 7 = Beyond first degree
ITALY	SQP3-06A-B	D	National options recoded to fit international categories: 1 = Some years of elementary school or some secondary school 2 = Lower secondary school diploma 3 = High school diploma or vocational training certificate 4 = Option not administered or data not available 5 = Courses after secondary school diploma or higher educational degree (ISEF - stands for Physical Education Higher Institution - Academy of Arts, Conservatory) 6 = University diploma 7 = Educational degree higher than university diploma (doctoral degree, specialization school, advanced training course or master) 8 = I don't know
LEBANON	SQP3-06A-B	D	National options recoded to fit international categories: 1 = Did not go to school/Some primary or middle school 2 = Some of the secondary level 3 = Secondary level 4 = Part of a professional or technical training program 5 = Option not administered or data not available 6 = Bachelor degree 7 = Master degree or higher 8 = I don't know



NETHERLANDS	SQP3-06A-B	D	<p>National options recoded to fit international categories:</p> <p>1 = Finished/not finished primary school, not been to school  2 = Lower secondary general and lower vocational education  3 = Upper secondary general and vocational education  4 = Option not administered or data not available  5 = Higher vocational education, 2-3 years training  6 = Higher vocational education (4 years, equivalent to bachelor's)  7 = University/University and PHD  8 = I don't know</p>
NORWAY	SQP3-06A-B	D	<p>National options recoded to fit international categories:</p> <p>1 = Did go to or did not complete primary school/Primary school  2 = Lower secondary school  3 = Upper secondary school  4 = Option not administered or data not available  5 = Short study at college (1-2 years)  6 = University or college (at least 3 years)  7 = University or college (at least 5 years)  8 = I don't know</p>
RUSSIAN FEDERATION	SQP3-06A-B	D	<p>Nationally defined options:</p> <p>1 = Not complete basic education or did not go to school  2 = Basic education (finish Grade 9)  3 = Secondary general education (finish Grade 11)  4 = Primary vocational education  5 = Secondary vocational education  6 = Higher education  7 = Candidate or doctor of sciences (PhD)  8 = I don't know</p>
SLOVENIA	SQP3-06A-B	D	<p>Nationally defined options:</p> <p>1 = Some elementary school or did not go to school  2 = Elementary school  3 = Secondary school  4 = Vocational course after secondary school  5 = 2-3 years study  6 = 4-5 years study  7 = Master or PhD  8 = I don't know</p>
SWEDEN	SQP3-06A	D	<p>Stem of the question changed:  What is the highest level of education completed by your mother  (or female guardian)?</p> <p>Nationally defined options:</p> <p>1 = No education or less than 9 years in school  2 = 9 year compulsory school  3 = Upper secondary school leaving certificate  4 = Post secondary non-tertiary education  5 = University Certificate (at least 80 points, less than 120 points)  6 = University degree (120 - 160 points)  7 = University degree (more than 160 points)  8 = I don't know</p>
SWEDEN	SQP3-06B	D	<p>Stem of the question changed:  What is the highest level of education completed by your father  (or male guardian)?</p> <p>Nationally defined options:</p> <p>1 = No education or less than 9 years in school  2 = 9 year compulsory school  3 = Upper secondary school leaving certificate  4 = Post secondary non-tertiary education  5 = University Certificate (at least 80 points, less than 120 points)  6 = University degree (120 - 160 points)  7 = University degree (more than 160 points)  8 = I don't know</p>

**SQP3-07A-B****Question:**

A: Was your mother (or stepmother or female guardian) born in <country>?

B: Was your father (or stepfather or male guardian) born in <country>?

1 = Yes

2 = No

**Variable Name(s):** PS2GMBRN, PS2GFBRN

Country	Item ID	Code	Documentation
NETHERLANDS	SQP3-07A	D	<p>Stem of the question changed: In which country is your mother who lives at your home, born? Your mother can also be your stepmother or foster mother. Home is where you live most days of the week.</p> <p>National options recoded to fit international categories: 1 = Netherlands 2 = The Netherlands Antilles/Surinam/Morocco/Turkey/Moluccas/Other country</p>
NETHERLANDS	SQP3-07B	D	<p>Stem of the question changed: In which country is your father, who lives at your home, born? Your father can also be your stepfather or foster father. Home is where you live most days of the week.</p> <p>National options recoded to fit international categories: 1 = Netherlands 2 = The Netherlands Antilles/Surinam/Morocco/Turkey/Moluccas/Other country</p>

**SQP3-08A-B****Question:**

A: Were you born in <country>?

1 = Yes

2 = No

B: If you were not born in <country>, how old were you when you came to <country>?

1 = Older than 10 years old

2 = 5 to 10 years old

3 = Younger than 5 years old

**Variable Name(s):** PS2GBORN, PS2GBRNC

Country	Item ID	Code	Documentation
NETHERLANDS	SQP3-08A	D	<p>Stem of the question changed: In which country are you born?</p> <p>National options recoded to fit international categories: 1 = Netherlands 2 = The Netherlands Antilles/Surinam/Morocco/Turkey/Moluccas/Other country</p>



**SQP3-09****Question:**

After <secondary school>, do you intend to continue your education?

1 = Yes

2 = Yes, but not immediately

3 = No

**Variable Name(s):** PS2GITCE

Country	Item ID	Code	Documentation
IRAN, ISLAMIC REP.	SQP3-09	D	After pre university, do you intend to continue your education?
NETHERLANDS	SQP3-09	D	After VWO, do you intend to continue your education?
RUSSIAN FEDERATION	SQP3-09	D	After school, do you intend to continue your education?

**SQP3-10****Question:**

If you plan to continue your education, which of the following comes closest to the area you intend to study most?

1 = SCIENCE (e.g., physics, chemistry, biological, earth sciences)

2 = HEALTH SCIENCES (e.g., dentistry, medicine, pharmacy, veterinary medicine)

3 = ENGINEERING (e.g., chemical engineering, civil engineering, electrical engineering, mechanical engineering)

4 = BUSINESS (e.g., accounting, marketing, finance, administration, management)

5 = COMPUTER and INFORMATION SCIENCES (e.g., systems analyst)

6 = MATHEMATICS (e.g., calculus, statistics)

7 = SOCIAL SCIENCES (e.g., psychology, economics, sociology, law)

8 = OTHER FIELD OF STUDY

**Variable Name(s):** PS2GIAOS

Country	Item ID	Code	Documentation
SLOVENIA	SQP3-10	D	National options recoded to fit international options: 1 = Science (e.g., physics, chemistry, biological, earth sciences) 2 = Health sciences (e.g., dentistry, medicine, pharmacy, veterinary medicine) 3 = Engineering (e.g., chemical engineering, civil engineering, electrical engineering, mechanical engineering) 4 = Business (e.g., accounting, marketing, finance, administration, management) 5 = Computer and information sciences(e.g., systems analyst) 6 = Mathematics (e.g., calculus, statistics) 7 = Social sciences (e.g., psychology, economics, sociology, law)/Languages (e.g., Slovene, English, German...) 8 = Other

**SQP3-12A-F****Question:**

On a normal school day, how much time, on average, do you spend before or after school doing each of these things?

A: I do schoolwork (study or homework)

B: I take part in organized activities (e.g., sports, music, clubs, community service, etc.)

C: I use a computer for things other than schoolwork (e.g., messaging, email, gaming, music, etc.)

D: I spend time with friends

E: I work at a paid job

F: I watch movies or television

1 = No time

2 = Less than 1 hour

3 = 1-2 hours

4 = More than 2 but less than 4 hours

5 = 4 or more hours

**Variable Name(s):** PS2GSTSW, PS2GSTAC, PS2GSTUC, PS2GSTFR, PS2GSTPJ, PS2GSTTV

Country	Item ID	Code	Documentation
SLOVENIA	SQP3-12B	X	Option not administered or data not available



**SQP3-13A-M****Question:**

Why are you studying physics?

Please indicate how important each reason was for you.

A: I enjoy conducting experiments or investigations for physics

B: I usually do well in physics

C: Physics lessons are interesting

D: Studying or doing physics homework does not take me a lot of time

E: I need physics to pursue the career of my choice

F: Physics has good teachers

G: My parents advised me to study physics

H: I expect that I will easily pass the tests

I: I like the way physics is taught in my school

J: Studying physics will give me more options after finishing <secondary school>

K: A teacher advised me to study physics

L: My friends also are studying physics

M: The <study coordinator/mentor> of my school advised me to study physics

1 = Very important

2 = Important

3 = Unimportant

4 = Very unimportant

**Variable Name(s):** PS2PWSEC, PS2PWSWP, PS2PWSPI, PS2PWSLT, PS2PWSPC, PS2PWSGT, PS2PWSPA, PS2PWSEP, PS2PWSWT, PS2PWSMO, PS2PWSTA, PS2PWSFA, PS2PWSMA

Country	Item ID	Code	Documentation
ARMENIA	SQP3-13M	D	The class-mentor of my school advised to study physics
IRAN, ISLAMIC REP.	SQP3-13J	D	Studying advanced mathematics will give me more options after finishing pre university course
IRAN, ISLAMIC REP.	SQP3-13M	D	The counselor of my school advised me to study advanced mathematics
ITALY	SQP3-13F	D	The physics teachers are good
ITALY	SQP3-13J	D	Studying physics will give me more options after finishing secondary high school
ITALY	SQP3-13M	X	Option not administered or data not available
NETHERLANDS	SQP3-13J	D	Studying advanced mathematics will give me more options after finishing VWO
NETHERLANDS	SQP3-13M	D	The study mentor of my school advised me to study advanced physics
NORWAY	SQP3-13J	D	To take the course 3FY gives me more options after finishing upper secondary school
NORWAY	SQP3-13M	D	The study coordinator of my school advised me to take this course
RUSSIAN FEDERATION	SQP3-13H	D	I think that it will be easy for me to cope with physics works
RUSSIAN FEDERATION	SQP3-13M	D	The head of the teaching/curriculum department or teacher of my school advised me to study physics
SLOVENIA	SQP3-13M	D	The mentor of my class advised me to study physics

**SQP3-14A-B****Question:**

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

B: Are you taking or have you taken <the advanced mathematics track/course that defines the advanced mathematics population>?

1 = Yes

2 = No

**Variable Name(s):** PS2PHMMW, PS2PMACO

Country	Item ID	Code	Documentation
ITALY	SQP3-14B	D	Are you attending or have attended a course in mathematics?
NETHERLANDS	SQP3-14B	D	Mathematics B2
NORWAY	SQP3-14B	D	Are you taking one of these courses?  National options recoded to fit international categories: 1 = Yes (3MX) 2 = No (3MZ)
RUSSIAN FEDERATION	SQP3-14B	D	Are you taking or have you taken the advanced mathematics course (8 lessons per week or more)?
SLOVENIA	SQP3-14B	D	Are you taking advanced mathematics in Matura exam?

**SQP3-15A-F****Question:**

How often do you do these activities in your physics lessons?

A: We listen to the teacher present new material

B: We work problems on our own

C: We work on problems together with other students

D: We review what has been taught

E: We review homework

F: We have oral or written tests or quizzes

1 = Every or almost every lessons

2 = About half the lessons

3 = Some lessons

4 = Never

**Variable Name(s):** PS2PACLT, PS2PACWP, PS2PACWT, PS2PACRT, PS2PACRH, PS2PACTQ

Country	Item ID	Code	Documentation
SLOVENIA	SQP3-15F	X	Option not administered or data not available
SWEDEN	SQP3-15F	X	Option not administered or data not available



**SQP3-16A-H****Question:**

- How often do you do the following in your physics lessons?
- A: We watch the teacher demonstrate an experiment or investigation
  - B: We conduct an experiment or investigation
  - C: We use laws and formulas of physics to solve problems
  - D: We give explanations about what we are studying
  - E: We relate what we are learning in physics to our daily lives
  - F: We memorize formulas and procedures of physics
  - G: We read our physics textbooks and other resource materials
  - H: We watch the teacher demonstrate physics on a computer
    - 1 = Every or almost every lessons
    - 2 = About half the lessons
    - 3 = Some lessons
    - 4 = Never

**Variable Name(s):** PS2PDL01, PS2PDL02, PS2PDL03, PS2PDL04, PS2PDL05, PS2PDL06, PS2PDL07, PS2PDL08

Country	Item ID	Code	Documentation
LEBANON	SQP3-16A-H	X	Question not administered or data not available

**SQP3-17AA-AC****Question:**

- How often do you use the following in your physics lessons?
- A: Calculator
  - B: Computer
  - C: Other computing technology
    - 1 = Every or almost every lessons
    - 2 = About half the lessons
    - 3 = Some lessons
    - 4 = Never

**Variable Name(s):** PS2PULCA, PS2PULCO, PS2PULOT

Country	Item ID	Code	Documentation
SWEDEN	SQP3-17AC	X	Option not administered or data not available

**SQP3-20****Question:**

How often do you work with a physics tutor?

1 = More than once a week

2 = About once a week

3 = About once a month

4 = Once in a while when I need extra help

5 = Never

**Variable Name(s):** PS2PWSUT

Country	Item ID	Code	Documentation
NORWAY	SQP3-20	X	Question not administered or data not available
SWEDEN	SQP3-20	X	Question not administered or data not available

**ITLANG****Question:**

LANGUAGE OF TEST

**Variable Name(s):** ITLANG

Country	Item ID	Code	Documentation
ARMENIA	ITLANG	D	1 = Armenian
IRAN, ISLAMIC REP.	ITLANG	D	1 = Farsi
ITALY	ITLANG	D	1 = Italian
LEBANON	ITLANG	D	1 = French 2 = English
NETHERLANDS	ITLANG	D	1 = Dutch
NORWAY	ITLANG	D	1 = Bokmal/Nynorsk
PHILIPPINES	ITLANG	D	1 = English
RUSSIAN FEDERATION	ITLANG	D	1 = Russian
SLOVENIA	ITLANG	D	1 = Slovene
SWEDEN	ITLANG	D	1 = Swedish



# Section 3

Advanced Mathematics  
Teacher Questionnaire

**TQM3-03A-B****Question:**

A: By the end of this school year, how many years will you have been teaching altogether?  
 B: How many years will you have taught mathematics at the advanced level?

**Variable Name(s):** MT2GTAUT, MT2MTMAT

Country	Item ID	Code	Documentation
PHILIPPINES	TQM3-03A	D	Stem of the question changed: By the end of this school year, how many years will you have been teaching altogether? (Exclude the number of years you were on leave.)
SLOVENIA	TQM3-03B	D	Stem of the question changed: How many years are you teaching math in program of general Matura which started in 1993/1994 or equivalent program before that
SWEDEN	TQM3-03B	D	National options recoded to fit international question Total number of years taught = Total number of years taught mathematics D/mathematics E

**TQM3-04****Question:**

How long do you plan to continue teaching advanced mathematics?  
 1 = I plan to continue teaching as long as I can  
 2 = I plan to continue teaching until the opportunity for a better job in education comes along  
 3 = I plan to continue teaching for awhile but probably will leave the field of education  
 4 = I am undecided at this time

**Variable Name(s):** MT2MPCTM

Country	Item ID	Code	Documentation
ITALY	TQM3-04	D	National options recoded to fit international categories: 1 = I plan to continue teaching until I retire 2 = I plan to continue teaching until the opportunity for a better job in education comes along 3 = I plan to continue teaching for awhile but probably will leave the field of education 4 = I am undecided at this time
NETHERLANDS	TQM3-04	D	National options recoded to fit international categories: 1 = I plan to continue teaching as long as I can 2 = I plan to continue teaching until the opportunity for a better job in education comes along 3 = I plan to continue teaching for awhile but probably will leave the field of education 4 = I am undecided at this time



**TQM3-05****Question:**

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

- 1 = Did not complete <ISCED 3>
- 2 = Finished <ISCED 3>
- 3 = Finished <ISCED 4>
- 4 = Finished <ISCED 5B>
- 5 = Finished <ISCED 5A, first degree>
- 6 = Finished <ISCED 5A, second degree> or higher

**Variable Name(s):** MT2GFEDC

Country	Item ID	Code	Documentation
ARMENIA	TQM3-05	D	National options recoded to fit international categories: 1 = Did not complete secondary school 2 = Secondary school 3 = Secondary professional college (preliminary professional) 4 = Option not administered or data not available 5 = Higher general 6 = Higher professional/Ph.D. or Doctor of Science
IRAN, ISLAMIC REP.	TQM3-05	D	Nationally defined options: 1 = Did not complete high school 2 = High school 3 = Pre university 4 = Associate degree in technical subjects or in theoretical subjects 5 = First degree 6 = Master's degree or higher
ITALY	TQM3-05	D	National options recoded to fit international categories: 1 = Option not administered or data not available 2 = Secondary school diploma 3 = Vocational training course after secondary school diploma (e.g. technical and scientific training and instruction) 4 = Courses after secondary school diploma or higher educational degree (ISEF - stands for Physical Education Higher Institution - Academy of Arts, Conservatory) 5 = University diploma 6 = Educational degree higher than university diploma (doctoral degree, specialization school, advanced training course or master)
LEBANON	TQM3-05	D	Nationally defined options: 1 = Did not complete secondary education 2 = Secondary education 3 = Post-secondary education 4 = Vocational education at university level 5 = Bachelor degree 6 = Master degree or higher
NETHERLANDS	TQM3-05	D	National options recoded to fit international categories: 1 = Option not administered or data not available 2 = Upper Secondary general/vocational education (is asked, but will not be applicable as well) 3 = Option not administered or data not available 4 = Option not administered or data not available 5 = Higher vocational education (4 years, equal to bachelor) 6 = University (bachelor or master)/University and PHD
NORWAY	TQM3-05	D	National options recoded to fit international categories: 1 = Primary school 2 = Upper secondary school 3 = Option not administered or data not available 4 = Teacher college 5 = Candidates' examination, lower degree/Bachelor 6 = Candidates' examination, higher degree/Master



PHILIPPINES	TQM3-05	D	National options recoded to fit international categories: 1 = Option not administered or data not available 2 = Option not administered or data not available 3 = Vocational/technical program (1-2 years) (after high school)/Vocational/technical program (4 years) (after high school) 4 = Option not administered or data not available 5 = Academic bachelor's degree 6 = MA or higher
RUSSIAN FEDERATION	TQM3-05	D	National options recoded to fit international categories: 1 = Did not complete secondary education 2 = Secondary general education 3 = Secondary professional education 4 = Option not administered or data not available 5 = Higher education, 4 years 6 = Higher education, 5-6 years/Second higher education or PhD
SLOVENIA	TQM3-05	D	National options recoded to fit international categories: 1 = Option not administered or data not available 2 = Finished secondary school 3 = Option not administered or data not available 4 = Finished 2-3 year of study 5 = Finished 4-5 years of study 6 = Master of Science/PHD
SWEDEN	TQM3-05	D	Nationally defined options: 1 = Did not complete upper secondary school 2 = Upper secondary school leaving certificate 3 = Post secondary non-tertiary education 4 = University Certificate (at least 80 points, less than 120 points) 5 = University degree (120 - 160 points) 6 = University degree (more than 160 points)

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**TQM3-06A-G****Question:**

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

A: Mathematics

B: Education - Mathematics

C: Physics

D: Education - Science

E: Engineering

F: Education - General

G: Other

1 = Yes

2 = No

**Variable Name(s):** MT2GPSMA, MT2GPSEM, MT2GPSPH, MT2GPSES, MT2GPSEN, MT2GPSEG, MT2GPSOT

Country	Item ID	Code	Documentation
IRAN, ISLAMIC REP.	TQM3-06A-G	D	Stem of the question changed: During your education after finishing high school, what was your major or main area(s) of study?
ITALY	TQM3-06A	D	Stem of the question changed: Please indicate the university degree with which you teach
ITALY	TQM3-06B	X	Option not administered or data not available
ITALY	TQM3-06C	D	Stem of the question changed: Please indicate the university degree with which you teach
ITALY	TQM3-06D	X	Option not administered or data not available
ITALY	TQM3-06E	D	Stem of the question changed: Please indicate the university degree with which you teach
ITALY	TQM3-06F	X	Option not administered or data not available
ITALY	TQM3-06G	D	Stem of the question changed: Please indicate the university degree with which you teach
NETHERLANDS	TQM3-06B	D	Education - Mathematics (higher vocational education or university)
NETHERLANDS	TQM3-06D	D	Education - Physics/Other science (higher vocational education or university)
NETHERLANDS	TQM3-06F	X	Option not administered or data not available
NETHERLANDS	TQM3-06G	D	Other science subjects/Other
NORWAY	TQM3-06A-G	D	If you have a Bachelor or Master degree, in which subject(s) do you have more than 20 "credits" or 60 "study points"
PHILIPPINES	TQM3-06A-G	D	During your bachelors education, what was your major or main area(s) of study?
RUSSIAN FEDERATION	TQM3-06A-G	D	During your professional education, what was your major or main area(s) of study?
SLOVENIA	TQM3-06A-G	D	Stem of the question changed: What was your major area of study?

**TQM3-07****Question:**

Do you have a teaching license or certificate?

1 = Yes

2 = No

**Variable Name(s):** MT2GTLCE

Country	Item ID	Code	Documentation
ITALY	TQM3-07	D	Stem of the question changed: Have you received certification/eligibility (following certification confidential ordinary contest, SSIS, EU)?
NETHERLANDS	TQM3-07	X	Question not administered or data not available
PHILIPPINES	TQM3-07	D	Gang punched to "Yes"
SWEDEN	TQM3-07	X	Question not administered or data not available

**TQM3-08AA-AF****Question:**

How well prepared do you feel you are to teach the following topics?

A: Operations with complex numbers

B: The  $n$ th term of numeric and algebraic series and the sums to  $n$  terms or infinity of series

C: Problems involving permutations, combinations, and probability

D: Linear, simultaneous, and quadratic equations and inequalities; surd (radical) equations, logarithmic, and exponential equations

E: Equivalent representations of functions as ordered pairs, tables, graphs, formulas, or words

F: Values of functions, including rational functions for given values and ranges of the variables; function of a function

1 = Very well prepared

2 = Somewhat prepared

3 = Not well prepared

**Variable Name(s):** MT2MTT01, MT2MTT02, MT2MTT03, MT2MTT04, MT2MTT05, MT2MTT06

Country	Item ID	Code	Documentation
IRAN, ISLAMIC REP.	TQM3-08AD	D	Linear, simultaneous, and quadratic equations and inequalities; surd equations, logarithmic, and exponential equations
RUSSIAN FEDERATION	TQM3-08AA-AF	X	Question not administered or data not available



**TQM3-08BA-BE****Question:**

How well prepared do you feel you are to teach the following topics?

A: Limits of functions including rational functions; conditions for continuity and differentiability of functions

B: Differentiation of functions (including polynomial, exponential, logarithmic, trigonometric, rational, radical, composite, and parametric functions); differentiation of products and quotients

C: Using derivatives to solve problems (e.g., in kinematics, optimization, and rates of change)

D: Using first and second derivatives to determine gradient, turning points, and points of inflection of functions

E: Integrating functions (including polynomial, exponential, trigonometric, and rational functions); evaluating definite integrals

1 = Very well prepared

2 = Somewhat prepared

3 = Not well prepared

**Variable Name(s):** MT2MTT07, MT2MTT08, MT2MTT09, MT2MTT10, MT2MTT11

Country	Item ID	Code	Documentation
RUSSIAN FEDERATION	TQM3-08BA-BE	X	Question not administered or data not available
SLOVENIA	TQM3-08BB	D	Differentiation of functions (including polynomial, exponential, logarithmic, trigonometric, rational, radical, composite); differentiation of products and quotients

**TQM3-08CA-CE****Question:**

How well prepared do you feel you are to teach the following topics?

A: Properties of geometric figures; proving geometric propositions in two and three dimensions

B: Gradients, y-axis intercepts, and points of intersection of straight lines in the Cartesian plane

C: Equations and properties of circles in the Cartesian plane; tangents and normals to given points on a circle

D: Trigonometric properties of triangles (sine, cosine, and tangent); solving equations involving trigonometric functions

E: Properties of vectors and their sums and differences

1 = Very well prepared

2 = Somewhat prepared

3 = Not well prepared

**Variable Name(s):** MT2MTT12, MT2MTT13, MT2MTT14, MT2MTT15, MT2MTT16

Country	Item ID	Code	Documentation
RUSSIAN FEDERATION	TQM3-08CA-CE	X	Question not administered or data not available



**TQM3-10A-B****Question:**

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

B: 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):** MT2MMPOM, MT2MRPPO

Country	Item ID	Code	Documentation
ITALY	TQM3-10A	D	Are you a member of professional organization for mathematics teachers (for example UMI, Mathesis, etc.)?
NETHERLANDS	TQM3-10A-B	D	Professional organization for mathematics teachers (for example UMI, Mathesis, etc.)
PHILIPPINES	TQM3-10A-B	D	Mathematics Teachers Association of the Philippines, Mathematics Teachers' Guild, MathTED and/or Mathematics Society of the Philippines
SLOVENIA	TQM3-10A-B	D	Society of Mathematicians, Physicists and Astronomers of Slovenia

**TQM3-11A-F****Question:**

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

A: Mathematics content

B: Mathematics pedagogy/instruction

C: Mathematics curriculum

D: Integrating information technology into mathematics

E: Improving students' critical thinking or problem-solving skills

F: Mathematics assessment

1 = Yes

2 = No

**Variable Name(s):** MT2MPDMT, MT2MPDMP, MT2MPDMC, MT2MPDIT, MT2MPDCT, MT2MPDMA

Country	Item ID	Code	Documentation
PHILIPPINES	TQM3-11A-E	D	Stem of the question changed: In the past two years, have you participated in professional development (in any activity conducted in school or other sites intended to update and/or upgrade teacher's competencies) in any of the following?
PHILIPPINES	TQM3-11F	X	Option not administered or data not available



**TQM3-16****Question:**

How many students are in the <TIMSS class>?

**Variable Name(s):** MT2MSTUD

Country	Item ID	Code	Documentation
PHILIPPINES	TQM3-16	D	Stem of the question changed: How many students are in your class that is taking this TIMSS test?

**TQM3-19A-B****Question:**

A: Do you use a textbook as the basis for instruction in teaching mathematics to the <TIMSS class>?

B: Does each student have his or her own textbook?

1 = Yes

2 = No

**Variable Name(s):** MT2MTBTC, MT2MOTXB

Country	Item ID	Code	Documentation
NORWAY	TQM3-19B	D	Gang punched to 'Yes'

**TQM3-23A-D****Question:**

For <the advanced mathematics track/course that defines the advanced mathematics population> you are teaching the <TIMSS class>, approximately what percentage of teaching time will you have spent on each of the following mathematics content areas by the end of this school year?

A: Algebra (e.g., patterns, equations, relationships, and functions)

B: Calculus (e.g., limits of functions, first and second derivatives, and evaluating integrals)

C: Geometry (e.g., geometric figures, straight lines and circles in the Cartesian plane, trigonometry, and properties of vectors)

D: Other, please specify:

**Variable Name(s):** MT2MPTAL, MT2MPTCA, MT2MPTGE, MT2MPTOT

Country	Item ID	Code	Documentation
IRAN, ISLAMIC REP.	TQM3-23A-D	D	Pre-university mathematics course
NETHERLANDS	TQM3-23A-D	D	Mathematics B1 and B2
NORWAY	TQM3-23A-D	D	The mathematics course (3MX or 3MZ)

**TQM3-24AA-AF****Question:**

The following list includes the main topics addressed by the TIMSS advanced mathematics test. Choose the response that best describes when students in the <TIMSS class> have been taught each topic. 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 complex numbers
  - B: The  $n$ th term of numeric and algebraic series and the sums to  $n$  terms or infinity of series
  - C: Problems involving permutations, combinations, and probability
  - D: Linear, simultaneous, and quadratic equations and inequalities; surd (radical) equations, logarithmic, and exponential equations
  - E: Equivalent representations of functions as ordered pairs, tables, graphs, formulas, or words
  - F: Values of functions, including rational functions, for given values and ranges of the variable; function of a function
- 1 = Mostly taught before this year  
2 = Mostly taught this year  
3 = Not yet taught or just introduced

**Variable Name(s):** MT2MTP01, MT2MTP02, MT2MTP03, MT2MTP04, MT2MTP05, MT2MTP06

Country	Item ID	Code	Documentation
RUSSIAN FEDERATION	TQM3-24AA-AF	X	Question not administered or data not available

**TQM3-24BA-BE****Question:**

The following list includes the main topics addressed by the TIMSS advanced mathematics test. Choose the response that best describes when students in the <TIMSS class> have been taught each topic. 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 including rational functions; conditions for continuity and differentiability of functions
  - B: Differentiation of functions (including polynomial, exponential, logarithmic, trigonometric, rational, radical, composite, and parametric functions); differentiation of products and quotients
  - C: Using derivatives to solve problems (e.g., in kinematics, optimization, and rates of change)
  - D: Using first and second derivatives to determine gradient, turning points, and points of inflection of functions
  - E: Integrating functions (including polynomial, exponential, trigonometric, and rational functions); evaluating definite integrals
- 1 = Mostly taught before this year  
2 = Mostly taught this year  
3 = Not yet taught or just introduced

**Variable Name(s):** MT2MTP07, MT2MTP08, MT2MTP09, MT2MTP10, MT2MTP11

Country	Item ID	Code	Documentation
RUSSIAN FEDERATION	TQM3-24BA-BE	X	Question not administered or data not available
SLOVENIA	TQM3-24BB	D	Differentiation of functions (including polynomial, exponential, logarithmic, trigonometric, rational, radical, composite); differentiation of products and quotients



**TQM3-24CA-CE****Question:**

The following list includes the main topics addressed by the TIMSS advanced mathematics test. Choose the response that best describes when students in the <TIMSS class> have been taught each topic. 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; proving geometric propositions in two and three dimensions  
 B: Gradients, y-axis intercepts, and points of intersection of straight lines in the Cartesian plane  
 C: Equations and properties of circles in the Cartesian plane; tangents and normals to given points on a circle  
 D: Trigonometric properties of triangles (sine, cosine, and tangent); solving equations involving trigonometric functions  
 E: Properties of vectors and their sums and differences  
 1 = Mostly taught before this year  
 2 = Mostly taught this year  
 3 = Not yet taught or just introduced

**Variable Name(s):** MT2MTP12, MT2MTP13, MT2MTP14, MT2MTP15, MT2MTP16

Country	Item ID	Code	Documentation
RUSSIAN FEDERATION	TQM3-24CA-CE	X	Question not administered or data not available

**TQM3-26AA-AC****Question:**

Do the students in the <TIMSS class> use any of the following during mathematics lessons?

- A: Calculators  
 B: Computers  
 C: Other computing technology  
 1 = Yes  
 2 = No

**Variable Name(s):** MT2MSUCA, MT2MSUCO, MT2MSUOT

Country	Item ID	Code	Documentation
SWEDEN	TQM3-26AC	X	Option not administered or data not available

**TQM3-32A-C****Question:**

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

A: Classroom tests (e.g., teacher-made or textbook tests)

B: Informal assessment

C: <Other test>

1 = Major emphasis

2 = Some emphasis

3 = Little emphasis

4 = No emphasis

**Variable Name(s):** MT2MEPCT, MT2MEPIA, MT2MEPOT

Country	Item ID	Code	Documentation
NETHERLANDS	TQM3-32C	X	Option not administered or data not available
NORWAY	TQM3-32C	D	Option not administered or data not available
PHILIPPINES	TQM3-32B	D	Informal assessment (e.g., ungraded recitation / groupwork activities / interactions)
RUSSIAN FEDERATION	TQM3-32C	D	Other methods
SLOVENIA	TQM3-32C	D	Working on math outside math lessons (e.g. homework, research projects...)
SWEDEN	TQM3-32C	D	National tests

**ITCOURSE****Question:**

TYPE OF COURSE

**Variable Name(s):** ITCOURSE

Country	Item ID	Code	Documentation
ALL COUNTRIES	ITCOURSE	D	1 = Advanced Mathematics



# Section 4

Physics Teacher  
Questionnaire

**TQP3-03A-B****Question:**

A: By the end of this school year, how many years will you have been teaching altogether?  
 B: How many years will you have taught physics?

**Variable Name(s):** PT2GTAUT, PT2PTPHY

Country	Item ID	Code	Documentation
SLOVENIA	TQP3-03B	D	Stem of the question changed: How many years are you teaching physics in program of general Matura which started in 1993/1994 or equivalent program before that

**TQP3-04****Question:**

How long do you plan to continue teaching physics?  
 1 = I plan to continue teaching as long as I can  
 2 = I plan to continue teaching until the opportunity for a better job in education comes along  
 3 = I plan to continue teaching for awhile but probably will leave the field of education  
 4 = I am undecided at this time

**Variable Name(s):** PT2PPCTP

Country	Item ID	Code	Documentation
NETHERLANDS	TQP3-04	D	National options recoded to fit international categories: 1 = I plan to continue teaching as long as I can 2 = I plan to continue teaching until the opportunity for a better job in education comes along 3 = I plan to continue teaching for awhile but probably will leave the field of education 4 = I am undecided at this time



**TQP3-05****Question:**

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

- 1 = Did not complete <ISCED 3>
- 2 = Finished <ISCED 3>
- 3 = Finished <ISCED 4>
- 4 = Finished <ISCED 5B>
- 5 = Finished <ISCED 5A, first degree>
- 6 = Finished <ISCED 5A, second degree> or higher

**Variable Name(s):** PT2GFEDC

Country	Item ID	Code	Documentation
ARMENIA	TQP3-05	D	National options recoded to fit international categories: 1 = Did not complete secondary school 2 = Secondary school 3 = Secondary professional college (preliminary professional) 4 = Option not administered or data not available 5 = Higher general 6 = Higher professional/Ph.D. or Doctor of Science
IRAN, ISLAMIC REP.	TQP3-05	D	Nationally defined options: 1 = Did not complete high school 2 = High school 3 = Pre university 4 = Associate degree in technical subjects or in theoretical subjects 5 = First degree 6 = Master's degree or higher
ITALY	TQP3-05	D	National options recoded to fit international categories: 1 = Option not administered or data not available 2 = Secondary school diploma 3 = Vocational training course after secondary school diploma (e.g. technical and scientific training and instruction) 4 = Courses after secondary school diploma or higher educational degree (ISEF - stands for Physical Education Higher Institution - Academy of Arts, Conservatory) 5 = University diploma 6 = Educational degree higher than university diploma (doctoral degree, specialization school, advanced training course or master)
LEBANON	TQP3-05	D	Nationally defined options: 1 = Did not complete secondary education 2 = Secondary education 3 = Post-secondary education 4 = Vocational education at university level 5 = Bachelor degree 6 = Master degree or higher
NETHERLANDS	TQP3-05	D	National options recoded to fit international categories: 1 = Option not administered or data not available 2 = Upper Secondary general/vocational education (is asked, but will not be applicable as well) 3 = Option not administered or data not available 4 = Option not administered or data not available 5 = Higher vocational education (4 years, equal to bachelor) 6 = University (bachelor or master)/University and PHD
NORWAY	TQP3-05	D	National options recoded to fit international categories: 1 = Primary school 2 = Upper secondary school 3 = Option not administered or data not available 4 = Teacher college 5 = Candidates' examination, lower degree/Bachelor 6 = Candidates' examination, higher degree/Master



RUSSIAN FEDERATION	TQP3-05	D	National options recoded to fit international categories: 1 = Did not complete secondary education 2 = Secondary general education 3 = Secondary professional education 4 = Option not administered or data not available 5 = Higher education, 4 years 6 = Higher education, 5-6 years/Second higher education or PhD
SLOVENIA	TQP3-05	D	National options recoded to fit international options: 1 = Option not administered or data not available 2 = Finished secondary school 3 = Option not administered or data not available 4 = Finished 2-3 year of study 5 = Finished 4-5 years of study 6 = Master of Science/PHD
SWEDEN	TQP3-05	D	Nationally defined options: 1 = Did not complete upper secondary school 2 = Upper secondary school leaving certificate 3 = Post secondary non-tertiary education 4 = University Certificate (at least 80 points, less than 120 points) 5 = University degree (120 - 160 points) 6 = University degree (more than 160 points)

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**TQP3-06A-I****Question:**

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

A: Physics

B: Chemistry

C: Biology

D: Engineering

E: Education - Science

F: Mathematics

G: Education - Mathematics

H: Education - General

I: Other

1 = Yes

2 = No

**Variable Name(s):** PT2GPSPH, PT2GPSCH, PT2GPSBI, PT2GPSEN, PT2GPSES, PT2GPSMA, PT2GPSEM, PT2GPSEG, PT2GPSOT

Country	Item ID	Code	Documentation
IRAN, ISLAMIC REP.	TQP3-06A-I	D	Stem of the question changed: During your education after finishing high school, what was your major or main area(s) of study?
ITALY	TQP3-06A-D	D	Stem of the question changed: Please indicate the university degree with which you teach
ITALY	TQP3-06E	X	Option not administered or data not available
ITALY	TQP3-06F	D	Stem of the question changed: Please indicate the university degree with which you teach
ITALY	TQP3-06G-H	X	Option not administered or data not available
ITALY	TQP3-06I	D	Stem of the question changed: Please indicate the university degree with which you teach
NETHERLANDS	TQP3-06E	D	Education-Physics/Chemistry/Biology (higher vocational education or university)
NETHERLANDS	TQP3-06G	D	Education - Mathematics (higher vocational education or university)
NETHERLANDS	TQP3-06H	X	Option not administered or data not available
NORWAY	TQP3-06A-I	D	If you have a Bachelor or Master degree, in which subject(s) do you have more than 20 "credits" or 60 "study points"
RUSSIAN FEDERATION	TQP3-06A-I	D	During your professional education, what was your major or main area(s) of study?
SLOVENIA	TQP3-06A-I	D	Stem of the question changed: What was your major area of study?

**TQP3-07****Question:**

Do you have a teaching license or certificate?

1 = Yes

2 = No

**Variable Name(s):** PT2GTLCE

Country	Item ID	Code	Documentation
ITALY	TQP3-07	D	Stem of the question changed: Have you received certification/eligibility (following certification confidential ordinary contest, SSIS, EU)?
NETHERLANDS	TQP3-07	X	Question not administered or data not available
SWEDEN	TQP3-07	X	Question not administered or data not available

**TQP3-08AA-AG****Question:**

How well prepared do you feel you are to teach the following topics?

A: The conditions for equilibrium and the dynamics of different types of movement

B: Kinetic and potential energy; conservation of mechanical energy

C: Mechanical wave phenomena in sound, water, and strings; the relationship between speed, frequency, and wavelength; refraction

D: Forces, including frictional force, acting on a moving body

E: Forces acting on a body moving in a circular path; the body's centripetal acceleration, speed, and circling time; the law of gravitation in relation to the movement of planets

F: Elastic and inelastic collision; the law of conservation of momentum and the law of conservation of mechanical (i.e., kinetic) energy

G: Aspects of relativity (e.g., length contraction and time dilatation for an object moving with constant speed in relation to the observer)

1 = Very well prepared

2 = Somewhat prepared

3 = Not well prepared

**Variable Name(s):** PT2PTT01, PT2PTT02, PT2PTT03, PT2PTT04, PT2PTT05, PT2PTT06, PT2PTT07

Country	Item ID	Code	Documentation
RUSSIAN FEDERATION	TQP3-08AA-AG	X	Question not administered or data not available



**TQP3-08BA-BD****Question:**

How well prepared do you feel you are to teach the following topics?

A: Electrostatic attraction or repulsion between isolated charged particles – Coulomb's law

B: Electrical circuits – Ohm's law and Joule's law for complex electrical circuits

C: Charged particles in a magnetic field; relationship between magnetism and electricity; Faraday's and Lenz' laws of induction

D: Electromagnetic radiation; wavelength and frequency of various types of waves (e.g., radio, infrared, x-rays, light)

1 = Very well prepared

2 = Somewhat prepared

3 = Not well prepared

**Variable Name(s):** PT2PTT08, PT2PTT09, PT2PTT10, PT2PTT11

Country	Item ID	Code	Documentation
RUSSIAN FEDERATION	TQP3-08BA-BD	X	Question not administered or data not available

**TQP3-08CA-CC****Question:**

How well prepared do you feel you are to teach the following topics?

A: Difference between heat and temperature; heat transfer and specific heat capacities; evaporation and condensation

B: Expansion of solids and liquids in relation to temperature change; the law of ideal gases; the first law of thermodynamics

C: Heat ("black body") radiation and temperature

1 = Very well prepared

2 = Somewhat prepared

3 = Not well prepared

**Variable Name(s):** PT2PTT12, PT2PTT13, PT2PTT14

Country	Item ID	Code	Documentation
RUSSIAN FEDERATION	TQP3-08CA-CC	X	Question not administered or data not available



**TQP3-08DA-DC****Question:**

How well prepared do you feel you are to teach the following topics?

A: The structure of the atom and its nucleus in terms of electrons, protons, and neutrons; atomic number and atomic mass number

B: Light emission and absorption and the behavior of electrons; the photoelectric effect

C: Types of nuclear reactions (i.e., fission, fusion, and radioactive decay) and their role in nature (e.g., in stars) and society (e.g., reactors, bombs); radioactive isotopes

1 = Very well prepared

2 = Somewhat prepared

3 = Not well prepared

**Variable Name(s):** PT2PTT15, PT2PTT16, PT2PTT17

Country	Item ID	Code	Documentation
RUSSIAN FEDERATION	TQP3-08DA-DC	X	Question not administered or data not available

**TQP3-10A-B****Question:**

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

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

1 = Yes

2 = No

**Variable Name(s):** PT2PMPOP, PT2PRPPO

Country	Item ID	Code	Documentation
NETHERLANDS	TQP3-10A-B	D	Professional society or organisation for physics teachers
NORWAY	TQP3-10A-B	D	Physics teachers' national organisation
SLOVENIA	TQP3-10A-B	D	Society of Mathematicians, Physicists and Astronomers of Slovenia

**TQP3-19A-B****Question:**

A: Do you use a textbook as the basis for instruction in teaching physics to the <TIMSS class>?

B: Does each student have his or her own textbook?

1 = Yes

2 = No

**Variable Name(s):** PT2PTBTC, PT2POTXB

Country	Item ID	Code	Documentation
NORWAY	TQP3-19B	D	Gang punched to 'Yes'



**TQP3-23A-E****Question:**

For <the physics track/course that defines the physics population> you are teaching the <TIMSS class>, approximately what percentage of teaching time will you have spent on each of the following physics content areas by the end of this school year?

- A: Mechanics (e.g., conditions for equilibrium and dynamics of movement, kinetic and potential energy, mechanical waves, forces on moving bodies, conservation of energy, and aspects of relativity)  
 B: Electricity and Magnetism (e.g., Coulomb's law, Ohm's law, Joule's law, charged particles in magnetic fields, Faraday's and Lenz' laws of induction, and electromagnetic radiation)  
 C: Heat and Temperature (e.g., heat transfer and specific heat, expansion of solids and liquids, the ideal gas laws, the first law of thermodynamics, heat radiation and temperature)  
 D: Atomic and Nuclear Physics (e.g., structure of the atom and its nucleus, atomic number and atomic mass number, the photoelectric effect and the behavior of electrons, types of nuclear reaction and their role in nature and society)  
 E: Other, please specify:

**Variable Name(s):** PT2PPTME, PT2PPTTEL, PT2PPTHE, PT2PPTAT, PT2PPTOT

Country	Item ID	Code	Documentation
IRAN, ISLAMIC REP.	TQP3-23A-E	D	Pre-university physics course
NETHERLANDS	TQP3-23A-E	D	Physics 1 and 2
NORWAY	TQP3-23A-E	D	For the physics course 3FY

**TQP3-26AA-AC****Question:**

Do the students in the <TIMSS class> use any of the following during physics lessons?

- A: Calculators  
 B: Computers  
 C: Other computing technology  
 1 = Yes  
 2 = No

**Variable Name(s):** PT2PSUCA, PT2PSUCO, PT2PSUOT

Country	Item ID	Code	Documentation
SWEDEN	TQP3-26AC	X	Option not administered or data not available

**TQP3-30****Question:**

When you assign physics homework to the <TIMSS class>, about how many minutes do you usually assign? (Consider the time it would take an average student in your class.)

- 1 = 30 minutes or less
- 2 = 31-60 minutes
- 3 = 61-90 minutes
- 4 = More than 90 minutes

**Variable Name(s):** PT2PHWKM

Country	Item ID	Code	Documentation
SLOVENIA	TQP3-30	D	National options recoded to fit international options: 1 = 30 minutes or less 2 = 31-60 minutes 3 = 61-90 minutes 4 = Option not administered or data not available

**TQP3-32A-C****Question:**

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

A: Classroom tests (e.g., teacher-made or textbook tests)

B: Informal assessment

C: <Other test>

- 1 = Major emphasis
- 2 = Some emphasis
- 3 = Little emphasis
- 4 = No emphasis

**Variable Name(s):** PT2PEPCT, PT2PEPIA, PT2PEPOT

Country	Item ID	Code	Documentation
NETHERLANDS	TQP3-32C	X	Option not administered or data not available
NORWAY	TQP3-32C	X	Option not administered or data not available
RUSSIAN FEDERATION	TQP3-32C	D	Other methods
SLOVENIA	TQP3-32C	D	Working on physics outside physics class (e.g. homework, research projects...)
SWEDEN	TQP3-32C	D	National test



**ITCOURSE**

**Question:**

TYPE OF COURSE

**Variable Name(s):** ITCOURSE

Country	Item ID	Code	Documentation
ALL COUNTRIES	ITCOURSE	D	2 = Physics



# Section 5

School Questionnaire  
(Advanced Mathematics Schools)

**SCQ3-02****Question:**

How many people live in the city, town, or area where your school is located?

- 1 = More than 500,000 people
- 2 = 100,001 to 500,000 people
- 3 = 50,001 to 100,000 people
- 4 = 15,001 to 50,000 people
- 5 = 3,001 to 15,000 people
- 6 = 3,000 people or fewer

**Variable Name(s):** MC2GCOMU

Country	Item ID	Code	Documentation
SLOVENIA	SCQ3-02	D	National options recoded to fit international options: 1 = Option not administered or data not available 2 = 100,001 to 500,000 people 3 = 50,001 to 100,000 people 4 = 15,001 to 50,000 people 5 = 3,001 to 15,000 people 6 = 3,000 people or fewer

**SCQ3-03A-B****Question:**

Approximately what percentage of students in your school have the following background?

A: Come from economically disadvantaged homes

B: Come from economically affluent homes

- 1 = 0 to 10%
- 2 = 11 to 25%
- 3 = 26 to 50%
- 4 = More than 50%

**Variable Name(s):** MC2GSBED, MC2GSBEA

Country	Item ID	Code	Documentation
NORWAY	SCQ3-03A-B	D	Question not administered or data not available



**SCQ3-05A-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):** MC2GTGAM, MC2GTGPH

Country	Item ID	Code	Documentation
ARMENIA	SCQ3-05A	D	In-depth mathematics
IRAN, ISLAMIC REP.	SCQ3-05A	D	Pre university mathematics
ITALY	SCQ3-05A-B	D	Last year of school
NETHERLANDS	SCQ3-05A	D	Mathematics B2
NETHERLANDS	SCQ3-05B	D	Physics 2
NORWAY	SCQ3-05A	D	3FY
NORWAY	SCQ3-05B	D	3FY
PHILIPPINES	SCQ3-05A	X	Option not administered or data not available
PHILIPPINES	SCQ3-05B	X	Option not administered or data not available
RUSSIAN FEDERATION	SCQ3-05A	D	Course of advanced mathematics (8 h per week and more)
RUSSIAN FEDERATION	SCQ3-05B	D	Course of advanced physics (4 h per week and more)
SWEDEN	SCQ3-05A	D	Mathematics D
SWEDEN	SCQ3-05B	D	Physics B

**SCQ3-06A-B****Question:**

Does your school have a special policy to encourage students to choose the following courses?

A: <Advanced Mathematics>

B: <Physics>

1 = No

2 = Yes, only for girls

3 = Yes, only for boys

4 = Yes, for all students

**Variable Name(s):** MC2GSPAM, MC2GSPPH

Country	Item ID	Code	Documentation
ARMENIA	SCQ3-06A	D	In-depth mathematics
IRAN, ISLAMIC REP.	SCQ3-06A	D	Pre university mathematics
NETHERLANDS	SCQ3-06A	D	Mathematics B2
NETHERLANDS	SCQ3-06B	D	Physics B2
NORWAY	SCQ3-06A	D	3MX/3MZ
NORWAY	SCQ3-06B	D	3FY
PHILIPPINES	SCQ3-06A	X	Option not administered or data not available
PHILIPPINES	SCQ3-06B	X	Option not administered or data not available
RUSSIAN FEDERATION	SCQ3-06A	D	Course of advanced mathematics (8 h per week and more)
RUSSIAN FEDERATION	SCQ3-06B	D	Course of advanced physics (4 h per week and more)
SWEDEN	SCQ3-06A-B	X	Question not administered or data not available

**SCQ3-07A-G****Question:**

By the end of this school year, approximately what percentage of time in your role as principal will you have spent on these activities?

A: Administrative duties (e.g., hiring, budgeting, scheduling, meetings)

B: Instructional leadership (e.g., developing curriculum and pedagogy)

C: Supervising and evaluating teachers and other staff

D: Issues related to student discipline

E: Teaching

F: Public relations and fundraising

G: Other

**Variable Name(s):** MC2GPAAD, MC2GPALS, MC2GPASU, MC2GPASD, MC2GPATE, MC2GPAPR, MC2GPAOT

Country	Item ID	Code	Documentation
ITALY	SCQ3-07A	D	Administrative duties (e.g., hiring, budgeting, scholastic timetable, meetings)
SWEDEN	SCQ3-07B	D	Instructional leadership (e.g., developing curriculum/syllabus and pedagogy)



**SCQ3-08A-I****Question:**

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

- A: Teachers' job satisfaction
  - B: Teachers' opportunities for professional development
  - C: Teachers' understanding of the school's curricular goals
  - D: Teachers' degree of success in implementing the school's curriculum
  - E: Teachers' expectations for student achievement
  - F: Parental support for student achievement
  - G: Parental involvement in school activities
  - H: Students' regard for school property
  - I: Students' desire to do well in school
- 1 = Very high  
2 = High  
3 = Medium  
4 = Low  
5 = Very low

**Variable Name(s):** MC2GCHTS, MC2GCHPD, MC2GCHTU, MC2GCHDS, MC2GCHES, MC2GCHPS, MC2GCHPI, MC2GCHSR, MC2GCHSD

Country	Item ID	Code	Documentation
SWEDEN	SCQ3-08D	D	Teachers' degree of success in implementing the school's curriculum/syllabus

**SCQ3-10A-D****Question:**

In your school, are any of the following used to evaluate the practice of <twelfth-grade> physics teachers?

- A: Observations by the principal or senior staff
  - B: Observations by inspectors or other persons external to the school
  - C: Student achievement
  - D: Teacher peer review
- 1 = Yes  
2 = No

**Variable Name(s):** MC2GPPT1, MC2GPPT2, MC2GPPT3, MC2GPPT4

Country	Item ID	Code	Documentation
PHILIPPINES	SCQ3-10B	D	Observations by supervisors or other personnel external to the school

**SCQ3-11A-C****Question:**

How difficult was it to fill <twelfth-grade> teaching vacancies for this school year for the following subjects?

A: Mathematics

B: Physics

C: Computer science / information technology

1 = Were no vacancies in this subject

2 = Easy to fill vacancies

3 = Somewhat difficult

4 = Very difficult

**Variable Name(s):** MC2MVAMA, MC2PVAPH, MC2GVACS

Country	Item ID	Code	Documentation
PHILIPPINES	SCQ3-11C	X	Option not administered or data not available

**SCQ3-12A-C****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: Mathematics

B: Physics

C: Other

1 = Yes

2 = No

**Variable Name(s):** MC2GINMA, MC2GINPH, MC2GINOT

Country	Item ID	Code	Documentation
ITALY	SCQ3-12A-C	X	Question not administered or data not available



**SCQ3-13AA-AK****Question:**

How often does each of the following problem behaviors occur among <twelfth-grade> students in your school?

- A: Arriving late at school
  - B: Absenteeism (i.e., unjustified absences)
  - C: Skipping class <hours/periods>
  - D: Classroom disturbance
  - E: Cheating
  - F: Vandalism
  - G: Theft
  - H: Intimidation or verbal abuse of other students
  - I: Physical injury to other students
  - J: Intimidation or verbal abuse of teachers or staff
  - K: Physical injury to teachers or staff
- 1 = Never  
2 = Rarely  
3 = Monthly  
4 = Weekly  
5 = Daily

**Variable Name(s):** MC2GBF01, MC2GBF02, MC2GBF03, MC2GBF04, MC2GBF05, MC2GBF06, MC2GBF07, MC2GBF08, MC2GBF09, MC2GBF10, MC2GBF11

Country	Item ID	Code	Documentation
ARMENIA	SCQ3-13AC	D	Skipping class hours/days
ITALY	SCQ3-13AC	D	Skipping lessons
NORWAY	SCQ3-13AC	D	Skipping separate lessons
RUSSIAN FEDERATION	SCQ3-13AC	D	Skipping class lessons
SLOVENIA	SCQ3-13AC	D	Skipping individual periods
SWEDEN	SCQ3-13AC	D	Option not administered or data not available

**SCQ3-13BA-BK****Question:**

If the behavior occurs, how severe a problem does it present?

A: Arriving late at school

B: Absenteeism (i.e., unjustified absences)

C: Skipping class <hours/periods>

D: Classroom disturbance

E: Cheating

F: Vandalism

G: Theft

H: Intimidation or verbal abuse of other students

I: Physical injury to other students

J: Intimidation or verbal abuse of teachers or staff

K: Physical injury to teachers or staff

1 = Not a problem

2 = Minor problem

3 = Serious problem

**Variable Name(s):** MC2GBS01, MC2GBS02, MC2GBS03, MC2GBS04, MC2GBS05, MC2GBS06, MC2GBS07, MC2GBS08, MC2GBS09, MC2GBS10, MC2GBS11

Country	Item ID	Code	Documentation
ARMENIA	SCQ3-13BC	D	Skipping class hours/days
ITALY	SCQ3-13BC	D	Skipping lessons
NORWAY	SCQ3-13BC	D	Skipping separate lessons
RUSSIAN FEDERATION	SCQ3-13BC	D	Skipping class lessons
SLOVENIA	SCQ3-13BC	D	Skipping individual periods
SWEDEN	SCQ3-13BC	D	Option not administered or data not available



**SCQ3-14A-S**

**Question:**

Is your school's capacity to provide instruction affected by a shortage or inadequacy of any of the following?

- A: Instructional materials (e.g., textbook)
  - B: Budget for supplies (e.g., paper, pencils)
  - C: School buildings and grounds
  - D: Heating/cooling and lighting systems
  - E: Instructional space (e.g., classrooms)
  - F: Special equipment for students with disabilities
  - G: Computers for mathematics instruction
  - H: Computer software for mathematics instruction
  - I: Calculators for mathematics instruction
  - J: Library materials relevant to mathematics instruction
  - K: Audio-visual resources for mathematics instruction
  - L: Physics laboratory equipment and materials
  - M: Computers for physics instruction
  - N: Computer software for physics instruction
  - O: Calculators for physics instruction
  - P: Library materials relevant to physics instruction
  - Q: Audio-visual resources for physics instruction
  - R: Teachers
  - S: Computer support staff
- 1 = No  
 2 = A little  
 3 = Some  
 4 = A lot

**Variable Name(s):** MC2GSC01, MC2GSC02, MC2GSC03, MC2GSC04, MC2GSC05, MC2GSC06, MC2MSC07, MC2MSC08, MC2MSC09, MC2MSC10, MC2MSC11, MC2PSC12, MC2PSC13, MC2PSC14, MC2PSC15, MC2PSC16, MC2PSC17, MC2GSC18, MC2GSC19

Country	Item ID	Code	Documentation
PHILIPPINES	SCQ3-14D	D	Cooling and lighting systems
PHILIPPINES	SCQ3-14L-Q	X	Option not administered or data not available

**SCQ3-15A-B**

**Question:**

- A: Does your school have a physics laboratory?
  - B: Do teachers usually have assistance available when students are conducting physics experiments?
- 1 = Yes  
 2 = No

**Variable Name(s):** MC2PPLAB, MC2PASPH

Country	Item ID	Code	Documentation
PHILIPPINES	SCQ3-15A-B	X	Question not administered or data not available



# Section 6

School Questionnaire  
(Physics Schools)

**SCQ3-02****Question:**

How many people live in the city, town, or area where your school is located?

- 1 = More than 500,000 people
- 2 = 100,001 to 500,000 people
- 3 = 50,001 to 100,000 people
- 4 = 15,001 to 50,000 people
- 5 = 3,001 to 15,000 people
- 6 = 3,000 people or fewer

**Variable Name(s):** PC2GCOMU

Country	Item ID	Code	Documentation
SLOVENIA	SCQ3-02	D	National options recoded to fit international options: 1 = Option not administered or data not available 2 = 100,001 to 500,000 people 3 = 50,001 to 100,000 people 4 = 15,001 to 50,000 people 5 = 3,001 to 15,000 people 6 = 3,000 people or fewer

**SCQ3-03A-B****Question:**

Approximately what percentage of students in your school have the following background?

A: Come from economically disadvantaged homes

B: Come from economically affluent homes

- 1 = 0 to 10%
- 2 = 11 to 25%
- 3 = 26 to 50%
- 4 = More than 50%

**Variable Name(s):** PC2GSBED, PC2GSBEA

Country	Item ID	Code	Documentation
NORWAY	SCQ3-03A-B	D	Question not administered or data not available



**SCQ3-05A-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):** PC2GTGAM, PC2GTGPH

Country	Item ID	Code	Documentation
ARMENIA	SCQ3-05A	D	In-depth mathematics
IRAN, ISLAMIC REP.	SCQ3-05A	D	Pre university mathematics
ITALY	SCQ3-05A-B	D	Last year of school
NETHERLANDS	SCQ3-05A	D	Mathematics B2
NETHERLANDS	SCQ3-05B	D	Physics 2
NORWAY	SCQ3-05A	D	3FY
NORWAY	SCQ3-05B	D	3FY
RUSSIAN FEDERATION	SCQ3-05A	D	Course of advanced mathematics (8 h per week and more)
RUSSIAN FEDERATION	SCQ3-05B	D	Course of advanced physics (4 h per week and more)
SWEDEN	SCQ3-05A	D	Mathematics D
SWEDEN	SCQ3-05B	D	Physics B

**SCQ3-06A-B****Question:**

Does your school have a special policy to encourage students to choose the following courses?

A: <Advanced Mathematics>

B: <Physics>

1 = No

2 = Yes, only for girls

3 = Yes, only for boys

4 = Yes, for all students

**Variable Name(s):** PC2GSPAM, PC2GSPPH

Country	Item ID	Code	Documentation
ARMENIA	SCQ3-06A	D	In-depth mathematics
IRAN, ISLAMIC REP.	SCQ3-06A	D	Pre university mathematics
NETHERLANDS	SCQ3-06A	D	Mathematics B2
NETHERLANDS	SCQ3-06B	D	Physics B2
NORWAY	SCQ3-06A	D	3MX/3MZ
NORWAY	SCQ3-06B	D	3FY
RUSSIAN FEDERATION	SCQ3-06A	D	Course of advanced mathematics (8 h per week and more)
RUSSIAN FEDERATION	SCQ3-06B	D	Course of advanced physics (4 h per week and more)
SWEDEN	SCQ3-06A-B	X	Question not administered or data not available

**SCQ3-07A-G****Question:**

By the end of this school year, approximately what percentage of time in your role as principal will you have spent on these activities?

- A: Administrative duties (e.g., hiring, budgeting, scheduling, meetings)
- B: Instructional leadership (e.g., developing curriculum and pedagogy)
- C: Supervising and evaluating teachers and other staff
- D: Issues related to student discipline
- E: Teaching
- F: Public relations and fundraising
- G: Other

**Variable Name(s):** PC2GPAAD, PC2GPALS, PC2GPASU, PC2GPASD, PC2GPATE, PC2GPAPR, PC2GPAOT

Country	Item ID	Code	Documentation
ITALY	SCQ3-07A	D	Administrative duties (e.g., hiring, budgeting, scholastic timetable, meetings)
SWEDEN	SCQ3-07B	D	Instructional leadership (e.g., developing curriculum/syllabus and pedagogy)

**SCQ3-08A-I****Question:**

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

- A: Teachers' job satisfaction
  - B: Teachers' opportunities for professional development
  - C: Teachers' understanding of the school's curricular goals
  - D: Teachers' degree of success in implementing the school's curriculum
  - E: Teachers' expectations for student achievement
  - F: Parental support for student achievement
  - G: Parental involvement in school activities
  - H: Students' regard for school property
  - I: Students' desire to do well in school
- 1 = Very high  
2 = High  
3 = Medium  
4 = Low  
5 = Very low

**Variable Name(s):** PC2GCHTS, PC2GCHPD, PC2GCHTU, PC2GCHDS, PC2GCHES, PC2GCHPS, PC2GCHPI, PC2GCHSR, PC2GCHSD

Country	Item ID	Code	Documentation
SWEDEN	SCQ3-08D	D	Teachers' degree of success in implementing the school's curriculum/syllabus



**SCQ3-12A-C****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: Mathematics

B: Physics

C: Other

1 = Yes

2 = No

**Variable Name(s):** PC2GINMA, PC2GINPH, PC2GINOT

Country	Item ID	Code	Documentation
ITALY	SCQ3-12A-C	X	Question not administered or data not available

**SCQ3-13AA-AK****Question:**

How often does each of the following problem behaviors occur among <twelfth-grade> students in your school?

A: Arriving late at school

B: Absenteeism (i.e., unjustified absences)

C: Skipping class <hours/periods>

D: Classroom disturbance

E: Cheating

F: Vandalism

G: Theft

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**Variable Name(s):** PC2GBF01, PC2GBF02, PC2GBF03, PC2GBF04, PC2GBF05, PC2GBF06, PC2GBF07, PC2GBF08, PC2GBF09, PC2GBF10, PC2GBF11

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NORWAY	SCQ3-13AC	D	Skipping separate lessons
RUSSIAN FEDERATION	SCQ3-13AC	D	Skipping class lessons
SLOVENIA	SCQ3-13AC	D	Skipping individual periods
SWEDEN	SCQ3-13AC	D	Option not administered or data not available

**SCQ3-13BA-BK****Question:**

If the behavior occurs, how severe a problem does it present?

A: Arriving late at school

B: Absenteeism (i.e., unjustified absences)

C: Skipping class <hours/periods>

D: Classroom disturbance

E: Cheating

F: Vandalism

G: Theft

H: Intimidation or verbal abuse of other students

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**Variable Name(s):** PC2GBS01, PC2GBS02, PC2GBS03, PC2GBS04, PC2GBS05, PC2GBS06, PC2GBS07, PC2GBS08, PC2GBS09, PC2GBS10, PC2GBS11

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RUSSIAN FEDERATION	SCQ3-13BC	D	Skipping class lessons
SLOVENIA	SCQ3-13BC	D	Skipping individual periods
SWEDEN	SCQ3-13BC	D	Option not administered or data not available





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