OECD Programme for International Student Assessment 2012

ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

<*country*>

Date of Test (Main Survey PISA 2012)		
Day	Month	2012

Student Questionnaire - Form A

School Name

Student ID

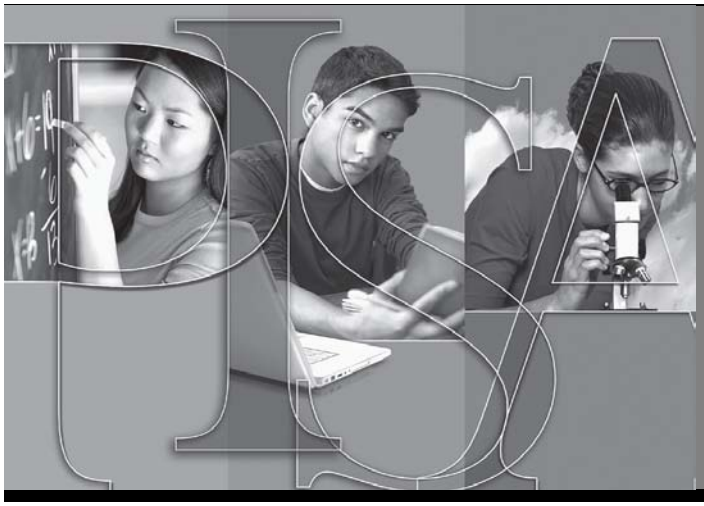
Student Name

Family name Given name

Date of Birth / / 19

Day Month Year

<Language of test> <ISO code>



Project Consortium

- **Australian Council for Educational Research (ACER)**
- **cApStAn Linguistic Quality Control (Belgium)**
- **Deutsches Institut für Internationale Pädagogische Forschung (DIPF, Germany)**
- **Educational Testing Service (ETS, USA)**
- **Institutt for Lærerutdanning og Skoleutvikling (ILS, Norway)**
- **Leibniz - Institute for Science and Mathematics Education (IPN, Germany)**
- **National Institute for Educational Policy Research (NIER, Japan)**
- **The Tao Initiative: CRP - Henri Tudor and Université de Luxembourg EMACS (Luxembourg)**
- **Unité d'analyse des systèmes et des pratiques d'enseignement (aSPe, Belgium)**
- **Westat (USA)**

In this booklet you will find questions about:

- You (Section A)
- Your Family and Home (Section B)
- Learning Mathematics (Section C1 and Section C2)
- Your Problem Solving Experiences (Section F)

Please read each question carefully and answer as accurately as you can. In the test you usually circle your answers. For this questionnaire, you will normally answer by ticking a box. For a few questions you will need to write a short answer.

If you make a mistake when ticking a box, cross out your error and check the correct box. If you make an error when writing an answer, simply cross it out and write the correct answer next to it.

In this questionnaire, there are no 'right' or 'wrong' answers. Your answers should be the ones that are 'right' for you.

You may ask for help if you do not understand something or are not sure how to answer a question.

Your answers will be combined with others to make totals and averages in which no individual can be identified. All your answers will be kept confidential.

SECTION <A>: ABOUT YOU

ST01

Q1 What <grade> are you in?

_____

<grade>

ST02

Q2 Which one of the following <programmes> are you in?

(Please tick only one box.)

<Programme 1> ☐ 1

<Programme 2> ☐ 2

<Programme 3> ☐ 3

<Programme 4> ☐ 4

<Programme 5> ☐ 5

<Programme 6> ☐ 6

ST03

Q3 On what date were you born?

(Please write the day, month and year you were born.)

_____ _____ *19___*

Day *Month* *Year*

ST04

Q4 Are you female or male?

Female *Male*

☐ 1 ☐ 2

ST05

Q5 Did you attend <ISCED 0>?

No ☐ 1

Yes, for one year or less ☐ 2

Yes, for more than one year ☐ 3

ST06

Q6 How old were you when you started <ISCED 1>?

_____ *Years*

ST07

Q7 Have you ever repeated a <grade>?

(Please tick only one box in each row.)

	No, never	*Yes, once*	*Yes, twice or more*
a) At <ISCED 1>	☐ 1	☐ 2	☐ 3
b) At <ISCED 2>	☐ 1	☐ 2	☐ 3
c) At <ISCED 3>	☐ 1	☐ 2	☐ 3

ST08

Q8 In the last two full weeks of school, how many times did you arrive late for school?

(Please tick only one box.)

None ☐ 1

One or two times ☐ 2

Three or four times ☐ 3

Five or more times ☐ 4

ST09

Q9 In the last two full weeks of school, how many times did you <skip> a whole school day?

(Please tick only one box.)

None ☐ 1

One or two times ☐ 2

Three or four times ☐ 3

Five or more times ☐ 4

Q10 In the last two full weeks of school, how many times did you <skip> some classes?

(Please tick only one box.)

None ☐ 1

One or two times ☐ 2

Three or four times ☐ 3

Five or more times ☐ 4

SECTION <B>: ABOUT YOUR FAMILY AND HOME

In this section you will be asked some questions about your family and your home.

Some of the following questions are about your mother and father or those persons who are like a mother or father to you — for example, guardians, step-parents, foster parents, etc.

If you share your time with more than one set of parents or guardians, please answer the following questions for those parents/guardians you spend the most time with.

ST11

Q11 Who usually lives at <home> with you?

(Please tick one box in each row.)

	Yes	*No*
a) Mother (including stepmother or foster mother)	☐ 1	☐ 2
b) Father (including stepfather or foster father)	☐ 1	☐ 2
c) Brother(s) (including stepbrothers)	☐ 1	☐ 2
d) Sister(s) (including stepsisters)	☐ 1	☐ 2
e) Grandparent(s)	☐ 1	☐ 2
f) Others (e.g. cousin)	☐ 1	☐ 2

ST12

Q12 What is your mother's main job? (e.g. school teacher, kitchen-hand, sales manager)

(If she is not working now, please tell us her last main job.)

Please write in the job title. _____

Q13 What does your mother do in her main job? (e.g. teaches high school students, helps the cook prepare meals in a restaurant, manages a sales team)

Please use a sentence to describe the kind of work she does or did in that job.

_____

ST13

Q14 What is the <highest level of schooling> completed by your mother?

If you are not sure which box to choose, please ask the <test administrator> for help.

(Please tick only one box.)

<ISCED level 3A> ☐ 1

<ISCED level 3B, 3C> ☐ 2

<ISCED level 2> ☐ 3

<ISCED level 1> ☐ 4

She did not complete <ISCED level 1> ☐ 5

ST14

Q15 Does your mother have any of the following qualifications?

If you are not sure how to answer this question, please ask the <test administrator> for help.

(Please tick one box in each row.)

	Yes	*No*
a) <ISCED level 6>	☐ 1	☐ 2
b) <ISCED level 5A>	☐ 1	☐ 2
c) <ISCED level 5B>	☐ 1	☐ 2
d) <ISCED level 4>	☐ 1	☐ 2

ST15

Q16 What is your mother currently doing?

(Please tick only one box.)

Working full-time <for pay> ☐ 1

Working part-time <for pay> ☐ 2

Not working, but looking for a job ☐ 3

Other (e.g. home duties, retired) ☐ 4

ST16

Q17 What is your father's main job? (e.g. school teacher, kitchen-hand, sales manager)

(If he is not working now, please tell us his last main job.)

Please write in the job title. _____

Q18 What does your father do in his main job? (e.g. teaches high school students, helps the cook prepare meals in a restaurant, manages a sales team)

Please use a sentence to describe the kind of work he does or did in that job.

_____

ST17

Q19 What is the <highest level of schooling> completed by your father?

If you are not sure how to answer this question, please ask the <test administrator> for help.

(Please tick only one box.)

<ISCED level 3A> ☐ 1

<ISCED level 3B, 3C> ☐ 2

<ISCED level 2> ☐ 3

<ISCED level 1> ☐ 4

He did not complete <ISCED level 1> ☐ 5

ST18

Q20 Does your father have any of the following qualifications?

If you are not sure which box to choose, please ask the <test administrator> for help.

(Please tick one box in each row.)

	Yes	*No*
a) <ISCED level 6>	☐ 1	☐ 2
b) <ISCED level 5A>	☐ 1	☐ 2
c) <ISCED level 5B>	☐ 1	☐ 2
d) <ISCED level 4>	☐ 1	☐ 2

ST19

Q21 What is your father currently doing?

(Please tick only one box.)

Working full-time <for pay> ☐ 1

Working part-time <for pay> ☐ 2

Not working, but looking for a job ☐ 3

Other (e.g. home duties, retired) ☐ 4

ST20

Q22 In what country were you and your parents born?

(Please tick one box in each column.)

	You	*Mother*	*Father*
<Country A>	☐ 01	☐ 01	☐ 01
<Country B>	☐ 02	☐ 02	☐ 02
<Country C>	☐ 03	☐ 03	☐ 03
<Country D>	☐ 04	☐ 04	☐ 04
<…etc.>	☐ <xx>	☐ <xx>	☐ <xx>
Other country	☐ <xx>	☐ <xx>	☐ <xx>

ST21

Q23 If <u>you</u> were NOT born in <country of test>, how old were you when you arrived in <country of test>?

If you were less than 12 months old, please write zero (0).

If you were born in <country of test> please skip this question and go to Q<x>.

_____ *Years*

Q24 What language do you speak at home most of the time?

(Please tick only one box.)

<Language 1> ☐ <xxx>

<Language 2> ☐ <xxx>

<Language 3> ☐ <xxx>

< …etc. > ☐ <xxx>

Other language ☐ <xxx>

Q25 Which of the following are in your home?

(Please tick one box in each row.)

	Yes	*No*
a) A desk to study at	☐ 1	☐ 2
b) A room of your own	☐ 1	☐ 2
c) A quiet place to study	☐ 1	☐ 2
d) A computer you can use for school work	☐ 1	☐ 2
e) Educational software	☐ 1	☐ 2
f) A link to the Internet	☐ 1	☐ 2
g) Classic literature (e.g. <Shakespeare>)	☐ 1	☐ 2
h) Books of poetry	☐ 1	☐ 2
i) Works of art (e.g. paintings)	☐ 1	☐ 2
j) Books to help with your school work	☐ 1	☐ 2
k) <Technical reference books>	☐ 1	☐ 2
l) A dictionary	☐ 1	☐ 2
m) A dishwasher	☐ 1	☐ 2
n) A <DVD> player	☐ 1	☐ 2
o) <Country-specific wealth item 1>	☐ 1	☐ 2
p) <Country-specific wealth item 2>	☐ 1	☐ 2
q) <Country-specific wealth item 3>	☐ 1	☐ 2

ST27

Q26 How many of these are there at your home?

(Please tick only one box in each row.)

	None	*One*	*Two*	*Three or more*
a) Cellular phones	☐	☐	☐	☐ 4
b) Televisions	☐	☐	☐	☐ 4
c) Computers	☐	☐	☐	☐ 4
d) Cars	☐	☐	☐	☐ 4
e) Rooms with a bath or shower	☐	☐	☐	☐ 4

ST28

Q27 How many books are there in your home?

There are usually about 40 books per metre of shelving. Do not include magazines, newspapers, or your schoolbooks.

(Please tick only one box.)

0-10 books ☐ 1

11-25 books ☐ 2

26-100 books ☐ 3

101-200 books ☐ 4

201-500 books ☐ 5

More than 500 books ☐ 6

SECTION <C1>: ABOUT LEARNING MATHEMATICS

ST29

Q28 Thinking about your views on mathematics: to what extent do you agree with the following statements?

(Please tick only one box in each row.)

	Strongly agree	*Agree*	*Disagree*	*Strongly disagree*
a) I enjoy reading about mathematics.	☐ 1	☐ 2	☐ 3	☐ 4
b) Making an effort in mathematics is worth it because it will help me in the work that I want to do later on.	☐ 1	☐ 2	☐ 3	☐ 4
c) I look forward to my mathematics lessons.	☐ 1	☐ 2	☐ 3	☐ 4
d) I do mathematics because I enjoy it.	☐ 1	☐ 2	☐ 3	☐ 4
e) Learning mathematics is worthwhile for me because it will improve my career <prospects, chances>.	☐ 1	☐ 2	☐ 3	☐ 4
f) I am interested in the things I learn in mathematics.	☐ 1	☐ 2	☐ 3	☐ 4
g) Mathematics is an important subject for me because I need it for what I want to study later on.	☐ 1	☐ 2	☐ 3	☐ 4
h) I will learn many things in mathematics that will help me get a job.	☐ 1	☐ 2	☐ 3	☐ 4

Q29 Thinking about how people important to you view mathematics: how strongly do you agree with the following statements?

(Please tick only one box in each row.)

	Strongly agree	*Agree*	*Disagree*	*Strongly disagree*
a) Most of my friends do well in mathematics.	☐ 1	☐ 2	☐ 3	☐ 4
b) Most of my friends work hard at mathematics.	☐ 1	☐ 2	☐ 3	☐ 4
c) My friends enjoy taking mathematics tests.	☐ 1	☐ 2	☐ 3	☐ 4
d) My parents believe it's important for me to study mathematics.	☐ 1	☐ 2	☐ 3	☐ 4
e) My parents believe that mathematics is important for my career.	☐ 1	☐ 2	☐ 3	☐ 4
f) My parents like mathematics.	☐ 1	☐ 2	☐ 3	☐ 4

Q30 How confident do you feel about having to do the following mathematics tasks?

(Please tick only one box in each row.)

	Very confident	*Confident*	*Not very confident*	*Not at all confident*
a) Using a <train timetable> to work out how long it would take to get from one place to another.	☐ 1	☐ 2	☐ 3	☐ 4
b) Calculating how much cheaper a TV would be after a 30% discount.	☐ 1	☐ 2	☐ 3	☐ 4
c) Calculating how many square metres of tiles you need to cover a floor.	☐ 1	☐ 2	☐ 3	☐ 4
d) Understanding graphs presented in newspapers.	☐ 1	☐ 2	☐ 3	☐ 4
e) Solving an equation like 3x+5= 17.	☐ 1	☐ 2	☐ 3	☐ 4
f) Finding the actual distance between two places on a map with a 1:10,000 scale.	☐ 1	☐ 2	☐ 3	☐ 4
g) Solving an equation like 2(x+3) = (x + 3) (x - 3).	☐ 1	☐ 2	☐ 3	☐ 4
h) Calculating the petrol consumption rate of a car.	☐ 1	☐ 2	☐ 3	☐ 4

Q31 Thinking about your mathematics lessons: to what extent do you agree with the following statements?

(Please tick only one box in each row.)

	Strongly agree	*Agree*	*Disagree*	*Strongly disagree*
a) If I put in enough effort I can succeed in mathematics.	☐ 1	☐ 2	☐ 3	☐ 4
b) Whether or not I do well in mathematics is completely up to me.	☐ 1	☐ 2	☐ 3	☐ 4
c) Family demands or other problems prevent me from putting a lot of time into my mathematics work.	☐ 1	☐ 2	☐ 3	☐ 4
d) If I had different teachers, I would try harder in mathematics.	☐ 1	☐ 2	☐ 3	☐ 4
e) If I wanted to, I could do well in mathematics.	☐ 1	☐ 2	☐ 3	☐ 4
f) I do badly in mathematics whether or not I study for my exams.	☐ 1	☐ 2	☐ 3	☐ 4

Q32 Suppose that you are a student in the following situation:

Each week, your mathematics teacher gives a short quiz. Recently you have done badly on these quizzes. Today you are trying to figure out why.

How likely are you to have these thoughts or feelings in this situation?

(Please tick only one box in each row.)

	Very likely	*Likely*	*Slightly likely*	*Not at all likely*
a) I'm not very good at solving mathematics problems.	☐ 1	☐ 2	☐ 3	☐ 4
b) My teacher did not explain the concepts well this week.	☐ 1	☐ 2	☐ 3	☐ 4
c) This week I made bad guesses on the quiz.	☐ 1	☐ 2	☐ 3	☐ 4
d) Sometimes the course material is too hard.	☐ 1	☐ 2	☐ 3	☐ 4
e) The teacher did not get students interested in the material.	☐ 1	☐ 2	☐ 3	☐ 4
f) Sometimes I am just unlucky.	☐ 1	☐ 2	☐ 3	☐ 4

Q33 Thinking about the mathematics you do for school: to what extent do you agree with the following statements?

(Please tick only one box in each row.)

	Strongly agree	*Agree*	*Disagree*	*Strongly disagree*
a) I finish my homework in time for mathematics class.	☐ 1	☐ 2	☐ 3	☐ 4
b) I work hard on my mathematics homework.	☐ 1	☐ 2	☐ 3	☐ 4
c) I am prepared for my mathematics exams.	☐ 1	☐ 2	☐ 3	☐ 4
d) I study hard for mathematics quizzes.	☐ 1	☐ 2	☐ 3	☐ 4
e) I keep studying until I understand mathematics material.	☐ 1	☐ 2	☐ 3	☐ 4
f) I pay attention in mathematics class.	☐ 1	☐ 2	☐ 3	☐ 4
g) I listen in mathematics class.	☐ 1	☐ 2	☐ 3	☐ 4
h) I avoid distractions when I am studying mathematics.	☐ 1	☐ 2	☐ 3	☐ 4
i) I keep my mathematics work well organised.	☐ 1	☐ 2	☐ 3	☐ 4

Q34 For each pair of statements, please choose the item that best describes you.

a) Please tick only one of the following two boxes.

☐ 1 I intend to take additional mathematics courses after school finishes.

☐ 2 I intend to take additional <test language> courses after school finishes.

b) Please tick only one of the following two boxes.

☐ 1 I plan on majoring in a subject in <college> that requires mathematics skills.

☐ 2 I plan on majoring in a subject in <college> that requires science skills.

c) Please tick only one of the following two boxes.

☐ 1 I am willing to study harder in my mathematics classes than is required.

☐ 2 I am willing to study harder in my <test language> classes than is required.

d) Please tick only one of the following two boxes.

☐ 1 I plan on <taking> as many mathematics classes as I can during my education.

☐ 2 I plan on <taking> as many science classes as I can during my education.

e) Please tick only one of the following two boxes.

☐ 1 I am planning on pursuing a career that involves a lot of mathematics

☐ 2 I am planning on pursuing a career that involves a lot of science.

Q35 How often do you do the following things at school and outside of school?

(Please tick only one box in each row.)

	Always or almost always	*Often*	*Sometimes*	*Never or rarely*
a) I talk about mathematics problems with my friends.	☐ 1	☐ 2	☐ 3	☐ 4
b) I help my friends with mathematics.	☐ 1	☐ 2	☐ 3	☐ 4
c) I do mathematics as an <extracurricular> activity.	☐ 1	☐ 2	☐ 3	☐ 4
d) I take part in mathematics competitions.	☐ 1	☐ 2	☐ 3	☐ 4
e) I do mathematics more than 2 hours a day outside of school.	☐ 1	☐ 2	☐ 3	☐ 4
f) I play chess.	☐ 1	☐ 2	☐ 3	☐ 4
g) I program computers.	☐ 1	☐ 2	☐ 3	☐ 4
h) I participate in a mathematics club.	☐ 1	☐ 2	☐ 3	☐ 4

SECTION <F>: ABOUT YOUR PROBLEM SOLVING EXPERIENCES

ST93

Q36 How well does each of the following statements below describe you?

(Please tick only one box in each row.)

	Very much like me	*Mostly like me*	*Somewhat like me*	*Not much like me*	*Not at all like me*
a) When confronted with a problem, I give up easily.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
b) I put off difficult problems.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
c) I remain interested in the tasks that I start.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
d) I continue working on tasks until everything is perfect.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
e) When confronted with a problem, I do more than what is expected of me.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5

Q37 How well does each of the following statements below describe you?

(Please tick only one box in each row.)

	Very much like me	*Mostly like me*	*Somewhat like me*	*Not much like me*	*Not at all like me*
a) I can handle a lot of information.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
b) I am quick to understand things.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
c) I seek explanations for things.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
d) I can easily link facts together.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
e) I like to solve complex problems.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5

Q38 *Suppose that you have been sending text messages from your mobile phone for several weeks. Today, however, you can't send text messages. You want to try to solve the problem.*

What would you do? For each suggestion, tick the option that best applies to you.

(Please tick only one box in each row.)

	I would definitely do this	*I would probably do this*	*I would probably not do this*	*I would definitely not do this*
a) I press every button possible to find out what is wrong.	☐ 1	☐ 2	☐ 3	☐ 4
b) I think about what might have caused the problem and what I can do to solve it.	☐ 1	☐ 2	☐ 3	☐ 4
c) I read the manual.	☐ 1	☐ 2	☐ 3	☐ 4
d) I ask a friend for help.	☐ 1	☐ 2	☐ 3	☐ 4

Q39 *Suppose that you are planning a trip to the zoo with your brother. You don't know which route to take to get there.*

What would you do? For each suggestion, tick the option that best applies to you.

(Please tick only one box in each row.)

	I would definitely do this	*I would probably do this*	*I would probably not do this*	*I would definitely not do this*
a) I read the zoo brochure to see if it says how to get there.	☐ 1	☐ 2	☐ 3	☐ 4
b) I study a map and work out the best route.	☐ 1	☐ 2	☐ 3	☐ 4
c) I leave it to my brother to worry about how to get there.	☐ 1	☐ 2	☐ 3	☐ 4
d) I know roughly where it is, so I suggest we just start driving.	☐ 1	☐ 2	☐ 3	☐ 4

Q40 *Suppose that you arrive at the train station. There is a ticket machine that you have never used before. You want to buy a ticket.*

What would you do? For each suggestion, tick the option that best applies to you.

(Please tick only one box in each row.)

	I would definitely do this	*I would probably do this*	*I would probably not do this*	*I would definitely not do this*
a) I check how similar it is to other ticket machines I have used.	☐ 1	☐ 2	☐ 3	☐ 4
b) I try out all the buttons to see what happens.	☐ 1	☐ 2	☐ 3	☐ 4
c) I ask someone for help.	☐ 1	☐ 2	☐ 3	☐ 4
d) I try to find a ticket office at the station to buy a ticket.	☐ 1	☐ 2	☐ 3	☐ 4

SECTION <C2>: MORE QUESTIONS ABOUT LEARNING MATHEMATICS

ST53

Q41 For each group of three items, please choose the item that best describes your approach to mathematics.

a) Please tick only one of the following three boxes.

☐ 1 When I study for a mathematics test, I try to work out what the most important parts to learn are.

☐ 2 When I study for a mathematics test, I try to understand new concepts by relating them to things I already know.

☐ 3 When I study for a mathematics test, I learn as much as I can off by heart.

b) Please tick only one of the following three boxes.

☐ 1 When I study mathematics, I try to figure out which concepts I still have not understood properly

☐ 2 When I study mathematics, I think of new ways to get the answer.

☐ 3 When I study mathematics, I make myself check to see if I remember the work I have already done

c) Please tick only one of the following three boxes.

☐ 1 When I study mathematics, I try to relate the work to things I have learnt in other subjects.

☐ 2 When I study mathematics, I start by working out exactly what I need to learn.

☐ 3 When I study mathematics, I go over some problems so often that I feel as if I could solve them in my sleep.

d) Please tick only one of the following three boxes.

☐ 1 In order to remember the method for solving a mathematics problem, I go through examples again and again.

☐ 2 I think about how the mathematics I have learnt can be used in everyday life.

☐ 3 When I cannot understand something in mathematics, I always search for more information to clarify the problem.

Q42 How many hours do you typically spend per week attending <out-of-school-time lessons> in the following subjects?

These are only lessons in subjects that you are also learning at school, which you spend learning extra time on outside of normal school hours. The lessons may be given at your school, at your home or somewhere else.

(Please tick only one box in each row.)

	I do not attend <out-of-school-time lessons> in this subject	*Less than 2 hours a week*	*2 or more but less than 4 hours a week*	*4 or more but less than 6 hours a week*	*6 or more hours a week*
a) <Test language>	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
b) Mathematics	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
c) <Science>	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
d) Other Subjects	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5

Q43 Thinking about all school subjects: on average, how many hours do you spend each week on the following?

When answering, include time spent on the weekend too.

a) Homework or other study set by your teachers _____ *hours per week*

b) Out of the time spent in (a), how many hours do you work on your homework with somebody overlooking and providing help if necessary ("guided homework"), either at school or elsewhere? _____ *hours per week*

c) Work with a personal <tutor> (whether paid or not) _____ *hours per week*

d) Attend out of school classes organised by a commercial company, and paid for by your parents _____ *hours per week*

e) Study with a parent or other family member _____ *hours per week*

f) Repeat and train content from school lessons by working on a computer (e.g. learn vocabulary with training software) _____ *hours per week*

Q44 How often have you encountered the following types of mathematics tasks during your time at school?

(Please tick only one box on each row.)

	Frequently	*Sometimes*	*Rarely*	*Never*
a) Working out from a <train timetable> how long it would take to get from one place to another.	☐ 1	☐ 2	☐ 3	☐ 4
b) Calculating how much more expensive a computer would be after adding tax.	☐ 1	☐ 2	☐ 3	☐ 4
c) Calculating how many square metres of tiles you need to cover a floor.	☐ 1	☐ 2	☐ 3	☐ 4
d) Understanding scientific tables presented in an article.	☐ 1	☐ 2	☐ 3	☐ 4
e) Solving an equation like $6x^2 + 5 = 29$	☐ 1	☐ 2	☐ 3	☐ 4
f) Finding the actual distance between two places on a map with a 1:10,000 scale.	☐ 1	☐ 2	☐ 3	☐ 4
g) Solving an equation like $2(x+3) = (x + 3)(x - 3)$	☐ 1	☐ 2	☐ 3	☐ 4
h) Calculating the power consumption of an electronic appliance per week.	☐ 1	☐ 2	☐ 3	☐ 4
i) Solving an equation like $3x+5=17$.	☐ 1	☐ 2	☐ 3	☐ 4

Q45 Thinking about mathematical concepts: how familiar are you with the following terms?

(Please tick only one box in each row.)

	Never heard of it	*Heard of it once or twice*	*Heard of it a few times*	*Heard of it often*	*Know it well, understand the concept*
a) Exponential Function	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
b) Divisor	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
c) Quadratic Function	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
d) <Proper Number>	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
e) Linear Equation	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
f) Vectors	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
g) Complex Number	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
h) Rational Number	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
i) Radicals	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
j) <Subjunctive Scaling>	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
k) Polygon	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
l) <Declarative Fraction>	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
m) Congruent Figure	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
n) Cosine	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
o) Arithmetic Mean	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
p) Probability	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5

ST69

Q46 How many minutes, on average, are there in a <class period> for the following subjects?

a) Minutes in a <class period> in < test language>: _____ *Minutes*

b) Minutes in a <class period> in mathematics: _____ *Minutes*

c) Minutes in a <class period> in <science>: _____ *Minutes*

ST70

Q47 How many <class periods> per week do you typically have for the following subjects?

a) Number of <class periods> per week in <test language>: _____ *<class periods>*

b) Number of <class periods> per week in mathematics: _____ *<class periods>*

c) Number of <class periods> per week in <science>: _____ *<class periods>*

ST71

Q48 In a normal, full week at school, how many <class periods> do you have <in total>?

Number of **ALL** <class periods> _____ *<class periods>*

ST72

Q49 On average, about how many students attend your <test language> class?

_____ *students*

The next four questions are about your experience with different kinds of mathematics problems at school. You will see descriptions of problems and grey-coloured boxes, each containing a mathematics problem.

Please read each problem. You do NOT need to solve it.

ST73

Q50 *In the box is a series of problems. Each requires you to understand a problem written in text and perform the appropriate calculations. Usually the problem talks about practical situations, but the numbers and people and places mentioned are made up. All the information you need is given. Here are two examples:*

1) <Ann> is two years older than <Betty> and <Betty> is four times as old as <Sam>. When <Betty> is 30, how old is <Sam>?

2) Mr <Smith> bought a television and a bed. The television cost <$625> but he got a 10% discount. The bed cost <$200>. He paid <$20> for delivery. How much money did Mr <Smith> spend?

We want to know about your experience with these types of word problems at school. Do not solve them!

(Please tick only one box in each row.)

	Frequently	*Sometimes*	*Rarely*	*Never*
a) How often have you encountered these types of problems in your **mathematics lessons**?	☐ 1	☐ 2	☐ 3	☐ 4
b) How often have you encountered these types of problems in the **tests you have taken at school?**	☐ 1	☐ 2	☐ 3	☐ 4

Q51 *Below are examples of another set of mathematical skills.*

1) Solve 2x + 3 = 7.
2) Find the volume of a box with sides 3m, 4m and 5m.

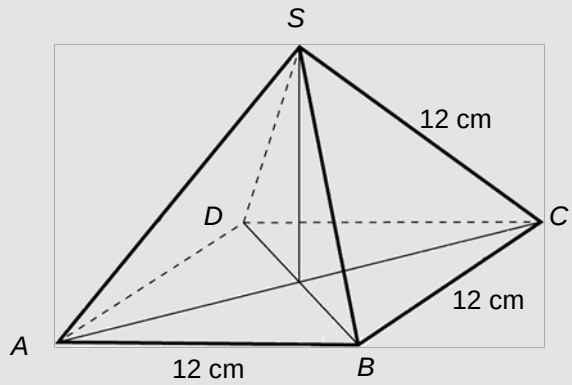
We want to know about your experience with these types of problems at school. Do not solve them!

(Please tick only one box in each row.)

	Frequently	*Sometimes*	*Rarely*	*Never*
a) How often have you encountered these types of problems in your **mathematics lessons**?	☐ 1	☐ 2	☐ 3	☐ 4
b) How often have you encountered these types of problems in the **tests you have taken at school?**	☐ 1	☐ 2	☐ 3	☐ 4

Q52 *In the next type of problem, you have to use mathematical knowledge and draw conclusions. There is no practical application provided. Here are two examples***.**

1) Here you need to use geometrical theorems:



Determine the height of the pyramid.

2) Here you have to know what a prime number is:

If n is any number: can $(n+1)^2$ be a prime number?

We want to know about your experience with these types of problems at school. Do not solve them!

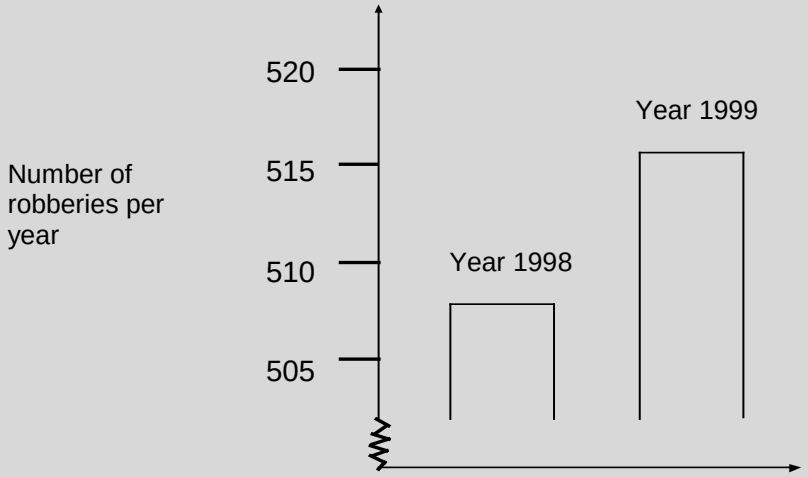
(Please tick only one box in each row.)

	Frequently	*Sometimes*	*Rarely*	*Never*
a) How often have you encountered these types of problems in your **mathematics lessons**?	☐ 1	☐ 2	☐ 3	☐ 4
b) How often have you encountered these types of problems in the **tests you have taken at school?**	☐ 1	☐ 2	☐ 3	☐ 4

Q53 *In this type of problem, you have to apply suitable mathematical knowledge to find a useful answer to a problem that arises in everyday life or work. The data and information are about real situations. Here are two examples.*

Example 1:

A TV reporter says "This graph shows that there is a huge increase in the number of robberies from 1998 to 1999."



Do you consider the reporter's statement to be a reasonable interpretation of the graph? Give an explanation to support your answer.

Example 2:

For years the relationship between a person's recommended maximum heart rate and the person's age was described by the following formula:

Recommended maximum heart rate = 220 - *age*

Recent research showed that this formula should be modified slightly. The new formula is as follows:

Recommended maximum heart rate = 208 – (0.7 × *age*)

From which age onwards does the recommended maximum heart rate increase as a result of the introduction of the new formula? Show your work.

We want to know about your experience with these types of problems at school. Do not solve them!

(Please check only one box in each row.)

	Frequently	*Sometimes*	*Rarely*	*Never*
a) How often have you encountered these types of problems in your **mathematics lessons**?	☐ 1	☐ 2	☐ 3	☐ 4
b) How often have you encountered these types of problems in the **tests you have taken at school?**	☐ 1	☐ 2	☐ 3	☐ 4

Thank you very much for your co-operation in completing this questionnaire!