# Trends in International Mathematics and Science Study (TIMSS) 2023 Main Study International Questionnaire 

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\text { OMB \#1850-0695 v. } 20
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## Appendix C: Questionnaires

Submitted by
National Center for Education Statistics Institute of Education Sciences U.S. Department of Education

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The following statement will appear on the login page for eTIMSS, MyTIMSS, and the bottom of the front cover of each printed questionnaire (the phrase "search existing data resources, gather the data needed" will not be included on the student questionnaire):

The National Center for Education Statistics (NCES), within the U.S. Department of Education, conducts TIMSS in the United States as authorized by the Education Sciences Reform Act of 2002 (ESRA 2002, 20 U.S.C. §9543). All of the information you provide may be used only for statistical purposes and may not be disclosed, or used, in identifiable form for any other purpose except as required by law (20 U.S.C. §9573 and 6 U.S.C. §151).

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OMB No. 1850-0695, Approval Expires xx/xx/20xx.

## School Questionnaire

## School Questionnaire

Your school has agreed to participate in TIMSS 2023 (Trends in International Mathematics and Science Study), an educational research project sponsored by the International Association for the Evaluation of Educational Achievement (IEA). TIMSS measures trends in student achievement in mathematics and science and studies differences in national education systems in more than 60 countries in order to help improve teaching and learning worldwide.

This questionnaire is addressed to school principals and department heads who are asked to supply information about their schools. Since your school has been selected as part of a nationwide sample, your responses are very important in helping to describe primary/elementary education in the United States.

It is important that you answer each question carefully so that the information provided reflects the situation in your school as accurately as possible. Some of the questions will require that you look up school records, so you may wish to arrange for the assistance of another staff member to help provide this information.

Since TIMSS is an international study and all countries are using the same questionnaire, you may find that some of the questions seem unusual or are not entirely relevant to you or schools in the United States. Nevertheless, it is important that you do your best to answer all of the questions so comparisons can be made across countries in the study.

It is estimated that you will need approximately 30 minutes to complete this questionnaire. We appreciate the time and effort that this takes and thank you for your cooperation and contribution.

To begin the questionnaire, please click on the "Next" button. When navigating through the questionnaire, make sure to confirm your responses by clicking on the "Next" or "Back" button. To go to a particular section or item, please click on the corresponding link in the "Table of Contents."

When you have completed the questionnaire, please click on the "Finish" button at the end of the last question in order to submit your answers.

Thank you.

## School Enrollment and Characteristics

1. What is the total enrollment of students in your school as of March 20, 2023?
$\square$ students

Type in the number.
2. What is the total enrollment of fourth-grade students in your school as of March 20, 2023?
students

Type in the number.

## 3. Approximately what percentage of students in your school have the following backgrounds?

Click one circle for each line.

0 to $10 \% \quad 11$ to $25 \% \quad 26$ to $50 \% \quad$| More than |
| :---: |
| $50 \%$ |

a) Come from economically disadvantaged
homes
b) Come from economically affluent homes
4. Around the 1st of October 2022, what percentage of students at this school were eligible to receive free or reduced-price lunches through the National School Lunch Program?
$\square$ percentage of students

Type in the number.
5. Approximately what percentage of students in your school have English as their native language?

Click one circle only.

More than $90 \%$

76 to $90 \%$

51 to $75 \%$
26 to 50\%
$25 \%$ or less
6. Of the students currently enrolled in your school, what percentage has been identified as limited-English proficient (LEP)/English language learners (ELL)?

Click one circle only.

0\%
$1-5 \%$

6-10\%

- 11-25\%

26-50\%
51-75\%

76-90\%

Over 90\%
7. A. How many people live in the city, town, or area where your school is located?

Click one circle only.More than 500,000 people100,001 to 500,000 people

50,001 to 100,000 people

30,001 to 50,000 people

15,001 to 30,000 people

3,001 to 15,000 people

3,000 people or fewer
B. Which best describes the immediate area in which your school is located?

Click one circle only.

Urban-Densely populatedSuburban-On fringe or outskirts of urban area

Medium size city or large town

Small town or village

Remote rural

Instructional Time
For the fourth-grade students in your school:
8. A. How many days per year is your school open for instruction?
$\square$ days

Type in the number.
B. What is the total instructional time, excluding breaks, in a typical day?
$\square$ minutes

Type in the number of minutes per day.
Please convert the number of hours into minutes.
C. In one calendar week, how many days is the school open for instruction?

Click one circle only.

6 days

5 1/2 days

5 days

4 1/2 days

4 days

Other
9. How many computers (including tablets) does your school have for use by fourth-grade students?
$\square$ computers

Type in the number.
10. Does your school have a science laboratory that can be used by fourth-grade students?

Click one circle only.

Yes

No
11. Does your school use an online learning management system to support learning (e.g., teacher-student communication, management of grades, student access to course materials)?

Click one circle only.

Yes
No
12. Do students in your school have access to these resources?

Click one circle for each line.
Yes No
a) A library or media center
b) High speed internet
13. How much is your school's capacity to provide instruction affected by a shortage or inadequacy of the following?

Click one circle for each line.
A. General School Resources
a) Instructional materials (e.g., textbooks)
b) Supplies (e.g., papers, pencils, materials)
c) School buildings and grounds
d) Heating/cooling and lighting systems
e) Instructional space (e.g., classrooms)
f) Technologically competent staff
g) Audio-visual resources for delivery of

Not at all
A little Some
instruction (e.g., interactive white boards, digital projectors)
h) Digital devices for student use
i) Resources for students with disabilities

## 13. (continued)

How much is your school's capacity to provide instruction affected by a shortage or inadequacy of the following?

Click one circle for each line.
B. Resources for Mathematics Instruction
a) Teachers with a specialization in mathematics
b) Computer software/applications for mathematics instruction
c) Library resources relevant to mathematics instruction
d) Calculators for mathematics instruction
e) Concrete objects or materials to help students understand quantities or procedures
C. Resources for Science Instruction
a) Teachers with a specialization in science
b) Computer software/applications for science instruction
c) Library resources relevant to science instruction
d) Science equipment and materials for experiments

Click one circle for each line.

## School Emphasis on Academic Success

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

Click one circle for each line.
Very high High Low Vedium Very low
a) Teachers' understanding of the school's curricular goals
b) Teachers' degree of success in implementing the school's curriculum
c) Teachers' expectations for student achievement
d) Teachers' ability to inspire students
e) Parental involvement in school activities
f) Parental commitment to ensure that students are ready to learn
14. (continued)

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

Click one circle for each line.
Very high High Medium Low Very low
g) Parental expectations for student achievement
h) Parental support for student achievement
i) Students' desire to do well in school
j) Students' ability to reach school's academic goals
k) Students' respect for classmates who excel academically

## School Emphasis on Environmental Sustainability

15. How much do you agree with these statements?

Click one circle for each line.

Agree a lot Agree a little \begin{tabular}{c}
Disagree <br>
a little

 

Disagree <br>
a lot
\end{tabular}

a) This school has a shared vision about its role in supporting environmental sustainability
b) This school regularly reviews its practices to make them more environmentally sustainable
c) There is a schoolwide approach to teaching environmental sustainability to students
d) This school teaches students to appreciate the natural environment
e) This school teaches students how to take action to protect the natural environment
f) This school encourages teachers to learn about teaching environmental sustainability
g) This school promotes environmental sustainability within the community
h) This school promotes participation in networks or projects related to environmental sustainability

## School Discipline and Safety

16. To what degree is each of the following a problem among fourth-grade students in your school?

Click one circle for each line.

|  |  |  |  |
| :---: | :---: | :---: | :---: |
| Not a | Minor | Moderate | Serious |
| problem | problem | problem | problem |

a) Arriving late at school
b) Absenteeism (i.e., unjustified absences)
c) Classroom disturbance
d) Cheating
e) Profanity
f) Vandalism
g) Theft
h) Intimidation or verbal abuse among students (including texting, emailing, etc.)
i) Physical fights among students
j) Intimidation or verbal abuse of teachers or staff (including texting, emailing, etc.)
17. To what degree is each of the following a problem among teachers in your school?

Click one circle for each line.

| Not a | Minor | Moderate | Serious |
| :---: | :---: | :---: | :---: |
| problem | problem | problem | problem |

a) Arriving late or leaving early
b) Absenteeism

## School Readiness

18. About how many of the students in your school can do the following when they begin the first grade of primary/elementary school?

Click one circle for each line.

| Less <br> than $25 \%$ $25-50 \%$ | $51-75 \%$ | More <br> than $75 \%$ |
| :---: | :---: | :---: |

a) Recognize most of the letters of the alphabet
b) Read some words
c) Read sentences
d) Write letters of the alphabet
e) Write their names
f) Write words other than their names
18. (continued)

About how many of the students in your school can do the following when they begin the first grade of primary/elementary school?

Click one circle for each line.

| Less |
| :---: |
| than $25 \%$ | $25-50 \% \quad 51-75 \% \quad$| More |
| :---: |

g) Count up to 100 or higher
h) Recognize written numbers from 1-10
i) Recognize written numbers higher than 10
j) Write numbers from 1-10
k) Do simple addition
I) Do simple subtraction

## Principal's Experience and Education

19. By the end of this school year, how many years will you have been a principal altogether?
$\square$ years

Please round to the nearest whole number.
20. By the end of this school year, how many years will you have been a principal at this school?
$\square$ years

Please round to the nearest whole number.
21. What is the highest level of formal education you have completed?

Click one circle only.

Did not complete Bachelor's degree (4-year college program)

Bachelor's degree (4-year college program)

Master's degree or professional degree (MD, DDS, lawyer, minister)

Doctorate (Ph.D., Ed.D.)
22. Do you hold the following qualifications or credentials in educational leadership?

Click one circle for each line.
Yes
No
a) Principal Certification
b) Master's degree or professional degree (MD, DDS, lawyer, minister)
c) Doctorate (Ph.D., Ed.D.)

## COVID-19 Pandemic

23. For how long was your school fully closed for in-person instruction because of the COVID-19 pandemic?

Click one circle for each line.
The school did not

fully close \begin{tabular}{c}
Less than 1 <br>
month

 

1 to 3 <br>
months

 

4 to 6 <br>
months

$\quad$

More than 6 <br>
months
\end{tabular}

a) 2019-2020 school year
b) 2020-2021 school year
c) 2021-2022 school year
d) 2022 - 2023 school year

Thank you for the thought, time, and effort you have put into completing this questionnaire.
To submit your completed questionnaire, please click the "Finish" button.

## School Questionnaire

## School Questionnaire

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This questionnaire is addressed to school principals and department heads who are asked to supply information about their schools. Since your school has been selected as part of a nationwide sample, your responses are very important in helping to describe secondary education in the United States.

It is important that you answer each question carefully so that the information provided reflects the situation in your school as accurately as possible. Some of the questions will require that you look up school records, so you may wish to arrange for the assistance of another staff member to help provide this information.

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Thank you.

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$\square$ students

Type in the number.
2. What is the total enrollment of eighth-grade students in your school as of March 20, 2023?
students

Type in the number.

## 3. Approximately what percentage of students in your school have the following backgrounds?

Click one circle for each line.
0 to $10 \% \quad 11$ to $25 \% \quad 26$ to $50 \%$ More than
a) Come from economically disadvantaged
homes
b) Come from economically affluent homes
4. Around the 1st of October 2022, what percentage of students at this school were eligible to receive free or reduced-price lunches through the National School Lunch Program?
percentage of students

Type in the number.
5. Approximately what percentage of students in your school have English as their native language?

Click one circle only.

More than $90 \%$

76 to 90\%

51 to $75 \%$

26 to 50\%
$25 \%$ or less
6. Of the students currently enrolled in your school, what percentage has been identified as limited-English proficient (LEP)/English language learners (ELL)?

Click one circle only.

0\%

- $1-5 \%$

6-10\%
$11-25 \%$

26-50\%

51-75\%

76-90\%

Over 90\%
7. A. How many people live in the city, town, or area where your school is located?

Click one circle only.

More than 500,000 people100,001 to 500,000 people

50,001 to 100,000 people

30,001 to 50,000 people

15,001 to 30,000 people

3,001 to 15,000 people

3,000 people or fewer
B. Which best describes the immediate area in which your school is located?

Click one circle only.

Urban-Densely populatedSuburban-On fringe or outskirts of urban area

Medium size city or large town
Small town or village

- Remote rural

Instructional Time
For the eighth-grade students in your school:
8. A. How many days per year is your school open for instruction?
$\square$ days

Type in the number.
B. What is the total instructional time, excluding breaks, in a typical day?
$\square$ minutes

Type in the number of minutes per day.
Please convert the number of hours into minutes.
C. In one calendar week, how many days is the school open for instruction?

Click one circle only.

6 days

5 1/2 days

5 days

4 1/2 days

4 days

Other
9. How many computers (including tablets) does your school have for use by eighth-grade students?
$\square$ computers

Type in the number.
10. Does your school have a science laboratory that can be used by eighth-grade students?

Click one circle only.

Yes

No
11. Does your school use an online learning management system to support learning (e.g., teacher-student communication, management of grades, student access to course materials)?

Click one circle only.

Yes

No
12. Do students in your school have access to these resources?

Click one circle for each line.
Yes No
a) A library or media center
b) High speed internet
13. How much is your school's capacity to provide instruction affected by a shortage or inadequacy of the following?

Click one circle for each line.
A. General School Resources
Not at all
A little
Some
A lot
a) Instructional materials (e.g., textbooks)
b) Supplies (e.g., papers, pencils, materials)
c) School buildings and grounds
d) Heating/cooling and lighting systems
e) Instructional space (e.g., classrooms)
f) Technologically competent staff
g) Audio-visual resources for delivery of
instruction (e.g., interactive white boards, digital projectors)
h) Digital devices for student use
i) Resources for students with disabilities

## 13. (continued)

How much is your school's capacity to provide instruction affected by a shortage or inadequacy of the following?

Click one circle for each line.
B. Resources for Mathematics Instruction
a) Teachers with a specialization in mathematics
b) Computer software/applications for mathematics instruction
c) Library resources relevant to mathematics instruction
d) Calculators for mathematics instruction
e) Concrete objects or materials to help students understand quantities or procedures
C. Resources for Science Instruction
a) Teachers with a specialization in science
b) Computer software/applications for science instruction
c) Library resources relevant to science instruction
d) Calculators for science instruction
e) Science equipment and materials for experiments School Emphasis on Academic Success
14. How would you characterize each of the following within your school?
a) Teachers' understanding of the school's curricular goals
b) Teachers' degree of success in implementing the school's curriculum
c) Teachers' expectations for student achievement
d) Teachers' ability to inspire students
e) Parental involvement in school activities
f) Parental commitment to ensure that students are ready to learn
14. (continued)

How would you characterize each of the following within your school?
g) Parental expectations for student achievement
h) Parental support for student achievement
i) Students' desire to do well in school
j) Students' ability to reach school's academic goals
k) Students' respect for classmates who excel academically

Click one circle for each line.
Very high High Low Vedium low

Very high
High
Medium Low
Medium Low
Very low
0.0.


$\bigcirc$
c) The school provides special activities in mathematics and science for interested students
d) The school emphasizes the importance of studying mathematics and science in the future

## School Emphasis on Environmental Sustainability

16. How much do you agree with these statements about your school?

Click one circle for each line.

Agree a lot Agree a little | Disagree | Disagree |
| :---: | :---: | :---: |
| a little | a lot |

a) This school has a shared vision about its role in supporting environmental sustainability
b) This school regularly reviews its practices to make them more environmentally sustainable
c) There is a schoolwide approach to teaching environmental sustainability to students
d) This school teaches students to appreciate the natural environment
e) This school teaches students how to take action to protect the natural environment
f) This school encourages teachers to learn about teaching environmental sustainability
g) This school promotes environmental sustainability within the community
h) This school promotes participation in networks or projects related to environmental sustainability

## School Discipline and Safety

17. To what degree is each of the following a problem among eighth-grade students in your school?

Click one circle for each line.

| Not a | Minor | Moderate | Serious |
| :---: | :---: | :---: | :---: |
| problem | problem | problem | problem |

a) Arriving late at school
b) Absenteeism (i.e., unjustified absences)
c) Classroom disturbance
d) Cheating
e) Profanity
f) Vandalism
17. (continued)

To what degree is each of the following a problem among eighth-grade students in your school?

Click one circle for each line.

|  |  |  |  |
| :---: | :---: | :---: | :---: |
| Not a | Minor | Moderate | Serious |
| problem | problem | problem | problem |

g) Theft
h) Intimidation or verbal abuse among students (including texting, emailing, etc.)
i) Physical injury to students
j) Intimidation or verbal abuse of teachers or staff (including texting, emailing, etc.)
k) Physical injury to teachers or staff
18. To what degree is each of the following a problem among teachers in your school?

Click one circle for each line.

| Not a | Minor | Moderate | Serious |
| :---: | :---: | :---: | :---: |
| problem | problem | problem | problem |

a) Arriving late or leaving early
b) Absenteeism

## Principal's Experience and Education

19. By the end of this school year, how many years will you have been a principal altogether?
$\square$ years

Please round to the nearest whole number.
20. By the end of this school year, how many years will you have been a principal at this school?
$\square$ years

Please round to the nearest whole number.
21. What is the highest level of formal education you have completed?

Did not complete Bachelor's degree (4-year college program)

Bachelor's degree (4-year college program)

Master's degree or professional degree (MD, DDS, lawyer, minister)

Doctorate (Ph.D., Ed.D.)
22. Do you hold the following qualifications or credentials in educational leadership?

Click one circle for each line.

Yes
No
a) Principal Certification
b) Master's degree or professional degree (MD, DDS, lawyer, minister)
c) Doctorate (Ph.D., Ed.D.)

## COVID-19 Pandemic

23. For how long was your school fully closed for in-person instruction because of the COVID-19 pandemic?

Click one circle for each line.

| The school |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| did not | Less than | 1 to 3 | 4 to 6 | More than |
| fully close | 1 month | months | months | 6 months |

a) 2019-2020 school year
b) 2020-2021 school year
c) 2021-2022 school year
d) 2022-2023 school year

Thank you for the thought, time, and effort you have put into completing this questionnaire.
To submit your completed questionnaire, please click the "Finish" button.

## Teacher Questionnaire

## Teacher Questionnaire

Your school has agreed to participate in TIMSS 2023 (Trends in International Mathematics and Science Study), an educational research project sponsored by the International Association for the Evaluation of Educational Achievement (IEA). TIMSS measures trends in student achievement in mathematics and science and studies differences in national education systems in more than 60 countries in order to help improve teaching and learning worldwide.

This questionnaire is addressed to teachers of fourth-grade students, and seeks information about teachers' academic and professional backgrounds, classroom resources, instructional practices, and attitudes toward teaching. Since your class has been selected as part of a nationwide sample, your responses are very important in helping to describe primary/elementary education in the United States.

Some of the questions in the questionnaire refer to the "TIMSS class" or "this class." This is the class that is identified with the login documentation, and which will be tested as part of TIMSS in your school. If you teach some but not all of the students in the TIMSS class, please think only of the students that you teach when answering these class-specific questions. It is important that you answer each question carefully so that the information that you provide reflects your situation as accurately as possible.

Since TIMSS is an international study and all countries are using the same questionnaire, you may find that some of the questions seem unusual or are not entirely relevant to you or schools in the United States. Nevertheless, it is important that you do your best to answer all of the questions so comparisons can be made across countries in the studies.

It is estimated that you will need approximately 35 minutes to complete this questionnaire. We appreciate the time and effort that this takes and thank you for your cooperation and contribution.

To begin the questionnaire, please click on the "Next" button. When navigating through the questionnaire, make sure to confirm your responses by clicking on the "Next" or "Back" button. To go to a particular section or item, please click on the corresponding link in the "Table of Contents." For some questions, you will be automatically taken to the appropriate next question based on your response.

When you have completed the questionnaire, please click on the "Finish" button at the end of the last question in order to submit your answers.

Thank you.

## About You <br> 1. What year did you start teaching? <br> $\square$

Please type in a year.

## 2. By the end of this school year, how many years will you have been teaching altogether?

$\square$ years

Please round to the nearest whole number.

## 3. Which of these describes you?

Click one circle only.

Female

Male

## 4. How old are you?

Click one circle only.Under 2525-2930-3940-4950-59

60 or more
5. What is the highest level of formal education you have completed?

Click one circle only.

Did not complete high school

High school graduate
(If you have not completed any college, you will be directed to Q7)

Associate's degree (2-year college program)Bachelor's degree (4-year college program)Master's degree or professional degree (MD, DDS, lawyer, minister)

Doctorate (Ph.D., Ed.D.)
6. A. During your college or university education, what was your major or main area(s) of study?
a) Education-Primary/Elementary
b) Education-Secondary
c) Mathematics
d) Science
e) English
f) Other
B. If your major or main area of study was education, did you have a specialization in any of the following?

Click one circle for each line.

Yes No
a) Mathematics
b) Science
c) Language/reading
d) Other subject

## School Emphasis on Academic Success

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

Click one circle for each line.
Very high High Medium Low Very low
a) Teachers' understanding of the school's curricular goals
b) Teachers' degree of success in implementing the school's curriculum
c) Teachers' expectations for student achievement
d) Teachers' ability to inspire students
e) Parental involvement in school activities
f) Parental commitment to ensure that students are ready to learn

## 7. (continued)

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

Click one circle for each line.
Very high High Medium Low Very low
g) Parental expectations for student achievement
h) Parental support for student achievement
i) Students' desire to do well in school
j) Students' ability to reach school's academic goals
k) Students' respect for classmates who excel academically

## School Environment

8. How much do you agree or disagree with the following statements about your current school?

Click one circle for each line.

|  |  |  |  |
| :---: | :---: | :---: | :---: |
| Agree <br> a lot | Agree <br> a little | Disagree <br> a little | Disagree <br> a lot |

a) I feel safe at this school
b) This school's security policies and practices are sufficient
c) The students behave in an orderly manner
d) The students are respectful of the teachers
e) The students respect school property
f) This school has clear rules about student conduct
g) This school's rules are enforced in a fair and consistent manner

About Being a Teacher
9. How often do you have these feelings about being a teacher?

Click one circle for each line.

Never or Very often

Often
Sometimes almost never
a) I am content with my profession as a teacher
b) I find my work full of meaning and purpose
c) I am enthusiastic about my job
d) My work inspires me
e) I am proud of the work I do
f) I feel appreciated as a teacher
g) I enjoy the challenges of teaching
10. How much do you agree or disagree with the statements below?

Click one circle for each line.

| Agree | Agree | Disagree | Disagree |
| :---: | :---: | :---: | :---: |
| a lot | a little | a little | a lot |

a) There are too many students in the classes
b) I have too much material to cover in class
c) I have too many teaching hours
d) I need more time to prepare for class
e) I need more time to assist individual students
f) I feel too much pressure from parents
g) I have difficulty keeping up with all of the changes to the curriculum
h) I have too many administrative tasks

## About Teaching the TIMSS Class

## 11. A. How many students are in this class?

students

Type in the number.

## B. How many of the students in \#11A are in fourth grade?

$\square$ fourth-grade students

Type in the number.
12. How many fourth-grade students experience difficulties understanding spoken English?
$\square$ students in this class

Type in the number.
13. How often do you do the following in teaching this class?

| every <br> lesson | About half <br> the lessons | Some <br> lessons | Never |
| :---: | :---: | :---: | :---: |

a) Relate the lesson to students' daily lives
b) Ask students to explain their answers
c) Communicate goals or objectives for the lesson to the students
d) Ask students to complete challenging exercises that require them to go beyond the instruction
e) Encourage classroom discussions among students
f) Link new content to students' prior knowledge
g) Ask students to decide their own problem solving procedures
14. In your view, to what extent do the following limit how you teach this class?

Click one circle for each line.

Not at all Some A lot
$\bigcirc$
$\bigcirc$
$\bigcirc$
$\bigcirc$
$\square$
i) Students with difficulties understanding the language of instruction

## Teaching Mathematics to the TIMSS Class

15. In a typical week, how much time do you spend teaching mathematics to the students in this class?
$\square$ minutes per week
16. In teaching mathematics to this class, how often do you ask students to do the following?

Click one circle for each line.

| Every or <br> almost <br> every <br> lesson$\quad$About half <br> the lessons | Some <br> lessons |
| :---: | :---: | :---: | Never

a) Listen to me explain new mathematics content
b) Listen to me explain how to solve problems
c) Memorize rules, procedures, and facts
d) Practice procedures on their own
e) Apply what they have learned to new problem situations on their own
f) Work problems together in the whole class with direct guidance from me
g) Work in mixed ability groups
h) Work in same ability groups

## Using Calculators and Digital Devices for Teaching Mathematics to the TIMSS Class

17. Are students in this class permitted to use calculators during mathematics lessons?

Click one circle only.

Yes, with unrestricted use

Yes, with restricted use

No
18. A. Do the students in this class have digital devices (including computers, tablets, or smartphones) available to use during mathematics lessons?

Click one circle only.

Yes

No
18. B. What access do the students have to digital devices?
a) The class has digital devices for each student to use
b) The class has digital devices that students can share
c) The school has digital devices that the class can use sometimes
d) Students bring their own digital devices
C. How often do you have students use digital devices during mathematics instruction?

Click one circle only.

At least once a week

Once or twice a month

A few times a year

Never or almost never
18. D. How often do you ask the students in your class to use digital devices to do these mathematics activities?

Click one circle for each line.

| At least once | Once or twice | A few times | Never or <br> a week |
| :---: | :---: | :---: | :---: |
| a month | a year | almost never |  |

a) Practice problems and procedures
b) Solve extended or contextualized problems
c) Create graphs, tables, or other data displays
d) Play games involving mathematics calculations or concepts
e) Read the textbook or watch instructional videos
f) Take a test
19. How much do each of these keep you from incorporating digital devices into mathematics instruction?

Click one circle for each line.
b) Not enough access to digital devices
c) Keeping students on task when the class is using digital devices
d) Lack of technical support from the school

## Mathematics Topics Taught to the TIMSS Class

20. The following list includes topics addressed by the TIMSS mathematics test. Choose the response that best describes when each topic is taught for students in this class.

If a topic was in the curriculum before fourth grade, choose "Mostly taught before this year." If you have taught a topic this year, choose "Mostly taught this year." If a topic is not in the fourthgrade curriculum for this year or you have not yet taught a topic, choose "Not yet taught."

Click one circle for each line.
A. Number
a) Recognize place value and order whole numbers
b) Add and subtract up to 4-digit numbers
c) Multiply up to 3-digit by 1-digit and 2-digit by 2-digit numbers
d) Divide up to 3-digit by 1-digit numbers
e) Solve problems with odd/even numbers, multiples, or factors
f) Round or make estimations with whole numbers
g) Find the missing number or operation in a number sentence
h) Extend a number pattern or find the missing number in a pattern
i) Represent, compare, and order fractions
j) Add and subtract simple fractions
k) Represent, compare, and order decimals up to two decimal places
I) Add and subtract with decimals up to two decimal places
Mostly taught
before this year

Mostly taught this year

Not yet taught
20. (continued)

Choose the response that best describes when each topic is taught for students in this class.
If a topic was in the curriculum before fourth grade, choose "Mostly taught before this year." If you have taught a topic this year, choose "Mostly taught this year." If a topic is not in the fourthgrade curriculum for this year or you have not yet taught a topic, choose "Not yet taught."
B. Measurement and Geometry

| Mostly <br> taught | Mostly <br> taught |  |
| :---: | :---: | :---: |
| before <br> this year | this | Not yet <br> taught |

a) Measure, estimate, add, and subtract lengths
b) Add and subtract mass, volume, or time in appropriate units
c) Find perimeters of polygons
d) Find areas of shapes covered with squares or volumes of shapes filled with cubes
e) Recognize and draw parallel and perpendicular lines
f) Compare and draw angles
g) Describe and draw common two-dimensional shapes (e.g., circles, triangles, quadrilaterals)
h) Describe and draw common three-dimensional shapes (e.g., cubes, rectangular solids, cones, cylinders, spheres)

Click one circle for each line.
C. Data

## Mostly taught before this year

Mostly taught
this year
a) Read and interpret data displays
b) Create or complete data displays
c) Draw conclusions from two or more data sources

Mathematics Homework for the TIMSS Class
21. A. How often do you usually assign mathematics homework to the students in this class?

Click one circle only.

I I do not assign mathematics homework

- Less than once a week1 or 2 times a week3 or 4 times a week
- Every day

21. B. How often do you do the following with the mathematics homework assignments for this class?

Click one circle for each line.

| Always or <br> almost always | Sometimes | Never or <br> almost never |
| :---: | :---: | :---: |

a) Correct assignments and give feedback to students
b) Discuss the homework in class
c) Monitor whether or not the homework was completed

## Mathematics Assessment of the TIMSS Class

22. How much importance do you place on these strategies to assess students' learning in mathematics?

Click one circle for each line.
A lot
Some
None
a) Observing students as they work
b) Asking students to answer questions during class
c) Short, regular written assessments
d) Longer tests (e.g., unit tests or exams)
e) Long-term projects

## Professional Development to Teach Mathematics

23. 

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

Click one circle for each line.

Yes
No
$\square$
$\bigcirc$
d) Integrating technology into mathematics
e) Improving students' critical thinking or problem solving skills
f) Mathematics assessment
g) Addressing individual students' needs

## Teaching Science to the TIMSS Class

24. A. Is science taught mainly as a separate subject (i.e., not integrated with other subjects) to the students in this class?

Click one circle only.

Yes

No
B. Please estimate the time that you spend on science topics with students in this class.
$\square$ minutes per week

Type in the number of minutes per week.
Please convert the number of hours into minutes.
25. In teaching science to the students in this class, how often do you ask them to do the following?

Click one circle for each line.
Every or
almost
every

lesson \begin{tabular}{c}
About half <br>
the lessons

$\quad$

Some <br>
lessons
\end{tabular}$\quad$ Never

a) Listen to me explain new science content
b) Observe natural phenomena such as the weather or a plant growing and describe what they see
c) Watch me demonstrate an experiment or investigation
d) Read their textbooks or other resource materials
e) Memorize facts and principles
f) Do field work outside the class
g) Work in mixed ability groups
h) Work in same ability groups
26. How much emphasis do you place on the following when teaching science to students in this class?

Click one circle for each line.
A lot
Some
None
a) Encouraging students to ask questions about scientific phenomena
b) Having students predict the outcomes of experiments or investigations
c) Having students create representations (e.g., models, graphs) to explain scientific phenomena
d) Having students use scientific concepts to explain phenomena
e) Having students conduct experiments (hands-on or virtually)
27. How often do you do the following when teaching this class?

Click one circle for each line.

| At least <br> once a <br> week | Once or <br> twice a <br> month | A few <br> times a | Never or <br> almost |
| :---: | :---: | :---: | :---: |
|  | year | never |  |

a) Develop students' positive attitudes toward the natural environment
b) Encourage students to use fewer resources (e.g., water, energy)
c) Discuss how student actions in and outside of school can help the natural environment
d) Discuss environmental issues (e.g., climate, endangered animals)
28. Do you do these things to teach students about environmental issues and sustainability?
a) Take students to visit natural areas (e.g., a pond or meadow)
b) Have students participate in environmentally responsible activities (e.g., pick up trash)
c) Have students do research or projects on a particular environmental topic (e.g., pollution, climate)
d) Provide opportunities for students to participate in outdoor environmental education programs outside of school
29. How much do you agree or disagree that education about environmental sustainability should be a priority for schools?

Click one circle only.

Agree a lot

Agree a little

Disagree a little

Disagree a lot

## Using Digital Devices for Teaching Science to the TIMSS Class

30. A. Do the students in this class have digital devices (including computers, tablets, or smartphones) available to use during science lessons?

Click one circle only.

Yes

No
30. B. What access do the students have to digital devices?

Click one circle for each line.

Yes No
a) The class has digital devices for each student to use
b) The class has digital devices that students can share
c) The school has digital devices that the class can use sometimes
d) Students bring their own digital devices
C. How often do you have students use digital devices during science instruction?

Click one circle only.

At least once a week

Once or twice a month

A few times a year

Never or almost never
30. D. How often do you ask the students in your class to use digital devices to do these science activities?

| At least once a |  |  |  |
| :---: | :---: | :---: | :---: |
| week | Once or twice a <br> month | A few times a | Never or <br> almost |
| never |  |  |  |

a) Solve extended or contextualized problems
b) Create graphs, tables, or other data displays
c) Play games involving science concepts
d) Conduct virtual experiments or other simulations
e) Read the textbook or watch instructional videos
f) Take a test
31. How much do each of these keep you from incorporating digital devices into science instruction?

Click one circle for each line.
a) Not knowing how to use digital devices to improve student learning
b) Not enough access to digital devices
c) Keeping students on task when the class is using digital devices
d) Lack of technical support from the school

## Science Topics Taught to the TIMSS Class

32. The following list includes topics and concepts addressed by the TIMSS science test. Choose the response that best describes when each topic or concept is taught for students in this class.

If a topic or concept was in the curriculum before fourth grade, choose "Mostly taught before this year." If you have taught a topic this year, choose "Mostly taught this year." If a topic is not in the fourth-grade curriculum for this year or you have not yet taught a topic, choose "Not yet taught."

Click one circle for each line.
A. Life Science

| Mostly <br> taught <br> before this <br> year | Mostly <br> taught <br> this year | Not yet <br> taught |
| :---: | :---: | :---: |

a) Basic differences between living and nonliving things
b) Defining characteristics of major groups of living things
c) Functions of major structures in living things (e.g., roots in plants)
d) Life cycle stages of common plants and animals (e.g., flowering plants, frogs)
e) Inherited characteristics of living things
f) How living things survive in their environments (e.g., physical characteristics, behaviors)
g) How human actions impact the environment
h) Common ecosystems and their organisms (e.g., forest, desert)
i) Interpreting simple food chains
j) Competition within ecosystems
k) Ways for humans to maintain good health and avoid illness
32. (continued)

Choose the response that best describes when each topic or concept is taught for students in this class.

If a topic or concept was in the curriculum before fourth grade, choose "Mostly taught before this year." If you have taught a topic this year, choose "Mostly taught this year." If a topic is not in the fourth-grade curriculum for this year or you have not yet taught a topic, choose "Not yet taught."

Click one circle for each line.

| Mostly <br> taught <br> before this <br> year | Mostly <br> taught | Not yet |
| :---: | :---: | :---: |
| this year | taught |  |

a) Solids, liquids, gases, and how their shapes and volumes differ
b) Grouping objects based on their physical properties
c) Examples of mixtures and how they can be separated (e.g., filtration, evaporation)
d) Magnetic attraction and repulsion
e) Examples of physical and chemical changes in everyday life
f) How to make solids dissolve faster in liquids (e.g., stirring, heating)
32. (continued)

Choose the response that best describes when each topic or concept is taught for students in this
class.
If a topic or concept was in the curriculum before fourth grade, choose "Mostly taught before this year." If you have taught a topic this year, choose "Mostly taught this year." If a topic is not in the fourth-grade curriculum for this year or you have not yet taught a topic, choose "Not yet taught."

Click one circle for each line.

| Mostly taught <br> before this <br> year | Mostly <br> taught <br> this year | Not yet <br> taught |
| :---: | :---: | :---: |

g) Concentration of solutions
h) Sources of energy (e.g., the Sun, wind, water, coal, oil, and gas)
i) How light is related to shadows, reflections, and rainbows
j) How vibrations are related to sound
k) Movement of heat from hotter to cooler objects
I) Simple electrical circuits
m) How motion is affected by forces (e.g., gravity, pushing, pulling, friction)
n) Examples of simple machines (e.g., levers, ramps)
32. (continued)

Choose the response that best describes when each topic or concept is taught for students in this class.

If a topic or concept was in the curriculum before fourth grade, choose "Mostly taught before this year." If you have taught a topic this year, choose "Mostly taught this year." If a topic is not in the fourth-grade curriculum for this year or you have not yet taught a topic, choose "Not yet taught."

Click one circle for each line.
C. Earth Science

| Mostly <br> taught <br> before this <br> year | Mostly <br> taught | this year |
| :---: | :---: | :---: | | Not yet |
| :---: |
| taught |

a) Composition of Earth's surface (i.e., land, fresh water, salt water)
b) Earth's resources and their use by humans
c) Renewable and nonrenewable resources
d) How wind and water change Earth's surface over time
e) What fossils can show about Earth's history
f) How weather changes day to day and with geographic location
g) Effects of increasing temperatures on Earth
h) Composition of the Solar System (the Sun, Earth, Moon, and other planets)
i) How the Moon's movement around the Earth changes its appearance
j) How Earth's rotation causes day and night
k) How Earth's annual movement around the Sun causes seasons or seasonal change

## Science Homework for the TIMSS Class

33. A. How often do you usually assign science homework to the students in this class?

Click one circle only.

I do not assign science homework

Less than once a week

1 or 2 times a week

3 or 4 times a week

Every day
33. B. How often do you do the following with the science homework assignments for this class?

## Click one circle for each line.

## Always or almost always

Never or almost never
a) Correct assignments and give feedback to students
b) Discuss the homework in class
c) Monitor whether or not the homework was completed

## Science Assessment of the TIMSS Class

34. How much importance do you place on these strategies to assess students' learning in science?

Click one circle for each line.
A lot
Some
None
a) Observing students as they work
b) Asking students to answer questions during class
c) Short, regular written assessments
d) Longer tests (e.g., unit tests or exams)
e) Long-term projects

## Professional Development to Teach Science

35. 

## A. In the past two years, have you participated in professional development in any of the following? <br> Click one circle for each line.

 Yes No Yes No professional development in any of the following?Click one circle for each line.
i) Integrating environmentalism and sustainability into science instruction

Thank you for the thought, time, and effort you have put into completing this questionnaire.

To submit your completed questionnaire, please click the "Finish" button.

## Teacher Questionnaire

 Mathematics
## Teacher Questionnaire Mathematics

Your school has agreed to participate in TIMSS 2023 (Trends in International Mathematics and Science Study), an educational research project sponsored by the International Association for the Evaluation of Educational Achievement (IEA). TIMSS measures trends in student achievement in mathematics and science and studies differences in national education systems in more than 60 countries in order to help improve teaching and learning worldwide.

This questionnaire is addressed to teachers of eighth-grade students, and seeks information about teachers' academic and professional backgrounds, classroom resources, instructional practices, and attitudes toward teaching. Since your class has been selected as part of a nationwide sample, your responses are very important in helping to describe secondary education in the United States.

Some of the questions in the questionnaire refer to the "TIMSS class" or "this class." This is the class that is identified with the login documentation, and which will be tested as part of TIMSS in your school. If you teach some but not all of the students in the TIMSS class, please think only of the students that you teach when answering these class-specific questions. It is important that you answer each question carefully so that the information that you provide reflects your situation as accurately as possible.

Since TIMSS is an international study and all countries are using the same questionnaire, you may find that some of the questions seem unusual or are not entirely relevant to you or schools in the United States. Nevertheless, it is important that you do your best to answer all of the questions so comparisons can be made across countries in the studies.

It is estimated that you will need approximately 35 minutes to complete this questionnaire. We appreciate the time and effort that this takes and thank you for your cooperation and contribution.

To begin the questionnaire, please click on the "Next" button. When navigating through the questionnaire, make sure to confirm your responses by clicking on the "Next" or "Back" button. To go to a particular section or item, please click on the corresponding link in the "Table of Contents." For some questions, you will be automatically taken to the appropriate next question based on your response.

When you have completed the questionnaire, please click on the "Finish" button at the end of the last question in order to submit your answers.

Thank you.

## About You <br> 1. What year did you start teaching? <br> $\square$

Please type in a year.

## 2. By the end of this school year, how many years will you have been teaching altogether?

years

Please round to the nearest whole number.

## 3. Which of these describes you?

Click one circle only.

Female

- Another gender


## 4. How old are you?

Click one circle only.Under 25

25-2930-3940-4950-59

60 or more
5. What is the highest level of formal education you have completed?

Click one circle only.

Did not complete high school

High school graduate
(If you have not completed any college, you will be directed to Q7)Associate's degree (2-year college program)

Bachelor's degree (4-year college program)

Master's degree or professional degree (MD, DDS, lawyer, minister)

Doctorate (Ph.D., Ed.D.)
6. During your college or university education, what was your major or main area(s) of study?

Click one circle for each line.
Yes No
a) Mathematics
b) Biology
c) Physics
d) Chemistry
e) Earth Science
f) Education-Mathematics
g) Education-Science
h) Education-General
i) Other

## School Emphasis on Academic Success

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

Click one circle for each line.
Very high High Medium Low Very low
a) Teachers' understanding of the school's curricular goals
b) Teachers' degree of success in implementing the school's curriculum
c) Teachers' expectations for student achievement
d) Teachers' ability to inspire students
e) Parental involvement in school activities
f) Parental commitment to ensure that students are ready to learn

## 7. (continued)

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

Click one circle for each line.
Very high High Low Low Very low
g) Parental expectations for student achievement
h) Parental support for student achievement
i) Students' desire to do well in school
j) Students' ability to reach school's academic goals
k) Students' respect for classmates who excel academically

## School Environment

8. How much do you agree or disagree with the following statements about your current school?

Click one circle for each line.

| Agree | Agree | Disagree | Disagree |
| :---: | :---: | :---: | :---: |
| a lot | a little | a little | a lot |

a) I feel safe at this school
b) This school's security policies and practices are sufficient
c) The students behave in an orderly manner
d) The students are respectful of the teachers
e) The students respect school property
f) This school has clear rules about student conduct
g) This school's rules are enforced in a fair and consistent manner

## About Being a Teacher

9. How often do you have these feelings about being a teacher?

Very often Often $\quad$ Sometimes $\quad$| Never or |
| :---: |
| almost never |

a) I am content with my profession as a teacher
b) I find my work full of meaning and purpose
c) I am enthusiastic about my job
d) My work inspires me
e) I am proud of the work I do
f) I feel appreciated as a teacher
g) I enjoy the challenges of teaching
10. How much do you agree or disagree with the statements below?

| Agree | Agree | Disagree | Disagree |
| :---: | :---: | :---: | :---: |
| a lot | a little | a little | a lot |

a) There are too many students in the classes
b) I have too much material to cover in class
c) I have too many teaching hours
d) I need more time to prepare for class
e) I need more time to assist individual students
f) I feel too much pressure from parents
g) I have difficulty keeping up with all of the changes to the curriculum
h) I have too many administrative tasks

## About Teaching the TIMSS Class

## 11. How many students are in this class?

$\square$ students

Type in the number.

## 12. How many eighth-grade students experience difficulties understanding spoken English?

$\square$ students in this class

Type in the number.

## 13. How often do you do the following in teaching this class?

Click one circle for each line.

| Every |  |  |  |
| :--- | :--- | :--- | :--- |
| or |  |  |  |
| olmost |  |  |  |
| every |  |  |  |
| lesson About half | Some |  |  |
| the lessons | lessons | Never |  |

a) Relate the lesson to students' daily lives
b) Ask students to explain their answers
c) Communicate goals or objectives for the lesson to the students
d) Ask students to complete challenging exercises that require them to go beyond the instruction
e) Encourage classroom discussions among students
f) Link new content to students' prior knowledge
g) Ask students to decide their own problem solving procedures
14. In your view, to what extent do the following limit how you teach this class?

Click one circle for each line.

Not at all
Some
$\bigcirc$
$\bigcirc$
$\bigcirc$

O
h) Students with mental, emotional, or psychological impairment
i) Students with difficulties understanding the language of instruction

## Teaching Mathematics to the TIMSS Class

15. In a typical week, how much time do you spend teaching mathematics to the students in this class?
$\square$ minutes per week

Type in the number of minutes per week.
Please convert the number of hours into minutes.
16. In teaching mathematics to this class, how often do you ask students to do the following?

Click one circle for each line.

| Every or <br> almost <br> every <br> lesson$\quad$About half <br> the lessons | Some <br> lessons | Never |
| :---: | :---: | :---: | :---: |

a) Listen to me explain new mathematics content
b) Listen to me explain how to solve problems
c) Memorize rules, procedures, and facts
d) Practice procedures on their own
e) Apply what they have learned to new problem situations on their own
f) Work problems together in the whole class with direct guidance from me
g) Work in mixed ability groups
h) Work in same ability groups
17. Which best describes the mathematics course you are teaching to the class with the TIMSS students?

Click one circle only.Basic or general eighth-grade math (not algebra or pre-algebra)Pre-algebra or introduction to algebraTwo-year pre-algebra

Algebra I (one-year course)

Algebra I (first year of a two-year Algebra I course)

Algebra I (second year of two-year Algebra I course)Geometry

Algebra II

Integrated or sequential math

Other math class

## Using Calculators and Digital Devices for Teaching Mathematics to the TIMSS Class

18. Are students in this class permitted to use calculators during mathematics lessons?

Click one circle only.

Yes, with unrestricted use

Yes, with restricted use

No
19. A. Do the students in this class have digital devices (including computers, tablets, or smartphones) available to use during mathematics lessons?

Click one circle only.

Yes

No
19. B. What access do the students have to digital devices?

Click one circle for each line.

Yes No
a) The class has digital devices for each student to use
b) The class has digital devices that students can share
c) The school has digital devices that the class can use sometimes
d) Students bring their own digital devices
C. How often do you have students use digital devices during mathematics instruction?

Click one circle only.

At least once a week

Once or twice a month
A few times a year

Never or almost never
19. D. How often do you ask the students in your class to use digital devices to do these mathematics activities?

Click one circle for each line.

| At least once | Once or twice | A few times | Never or <br> a week |
| :---: | :---: | :---: | :---: |
| a month | a year | almost never |  |

a) Practice problems and procedures
b) Solve extended or contextualized problems
c) Create graphs, tables, or other data displays
d) Play games involving mathematics calculations or concepts
e) Read the textbook or watch instructional videos
f) Take a test
20. How much do each of these keep you from incorporating digital devices into mathematics instruction?
a) Not knowing how to use digital devices to improve student learning
b) Not enough access to digital devices
c) Keeping students on task when the class is using digital devices
d) Lack of technical support from the school

## Mathematics Topics Taught to the TIMSS Class

21. The following list includes topics addressed by the TIMSS mathematics test. Choose the response that best describes when each topic is taught for students in this class.

If a topic was in the curriculum before eighth grade, choose "Mostly taught before this year." If you have taught a topic this year, choose "Mostly taught this year." If a topic is not in the eighthgrade curriculum for this year or you have not yet taught a topic, choose "Not yet taught."

Click one circle for each line.
A. Number
a) Add and subtract positive and negative numbers
b) Find and use factors, multiples, positive powers, or square roots of positive whole numbers
c) Compare fractions and decimals
d) Add, subtract, and multiply with fractions and decimals
e) Divide fractions and decimals by a whole number
f) Determine proportions and ratios
g) Find percentages and convert between percentages and fractions/decimals

| Mostly <br> taught | Mostly <br> taught | Not yet <br> before this <br> year |
| :---: | :---: | :---: |
| this year | taught |  |

Click one circle for each line.

| Mostly <br> taught | Mostly <br> before this <br> year | taught <br> this year |
| :---: | :---: | :---: |
|  |  | Not yet <br> taught |

a) Simplify and compare algebraic expressions
b) Solve simple linear equations
c) Solve simple linear inequalities
d) Solve simultaneous linear equations (two variables)
e) Write expressions, equations, or inequalities to represent problems
f) Interpret linear functions in graphs, tables, or words
g) Interpret simple non-linear functions (e.g., quadratic, cubic) in graphs, tables, or words
h) Generalize linear and non-linear pattern relationships or sequences

## 21. (continued)

Choose the response that best describes when each topic is taught for students in this class.
If a topic was in the curriculum before eighth grade, choose "Mostly taught before this year." If you have taught a topic this year, choose "Mostly taught this year." If a topic is not in the eighthgrade curriculum for this year or you have not yet taught a topic, choose "Not yet taught."

Click one circle for each line.

|  | Mostly <br> taught | Mostly <br> taught |  |
| :--- | :---: | :---: | :---: |
| C. Geometry and Measurement | before | this | Not yet |

a) Read and plot points in the Cartesian plane
b) Recognize and draw different types of angles and lines
c) Use geometric properties of polygons to calculate lengths, perimeter, and area (including the Pythagorean Theorem)
d) Determine the results of geometric translation, reflection, and rotation
e) Use properties of similar and congruent figures
f) Calculate surface area and volume of common three-dimensional shapes

Click one circle for each line.

|  | Mostly taught <br> before this | Mostly <br> taught | Not yet <br> D. Data and Probability |
| :--- | :---: | :---: | :---: |
| this year | year |  |  |

a) Interpret data from one or more data sources
b) Represent data in graphs, charts, or plots
c) Calculate and interpret the mean or median of a data distribution
d) Calculate probabilities of simple and compound events

## Mathematics Homework for the TIMSS Class

22. A. How often do you usually assign mathematics homework to the students in this class?

Click one circle only.

I do not assign mathematics homework

Less than once a week

1 or 2 times a week

3 or 4 times a week

Every day
22. B. How often do you do the following with the mathematics homework assignments for this class?

Click one circle for each line.

| Always or <br> almost <br> always$\quad$ Sometimes | Never or <br> almost never |
| :--- | :---: | :---: |

a) Correct assignments and give feedback to students
b) Have students correct their own homework
c) Discuss the homework in class
d) Monitor whether or not the homework was completed
e) Use the homework to contribute towards students' grades or marks

## Mathematics Assessment of the TIMSS Class

23. How much importance do you place on these strategies to assess students' learning in mathematics?

Click one circle for each line.
A lot
Some
None
a) Observing students as they work
b) Asking students to answer questions during class
c) Short, regular written assessments
d) Longer tests (e.g., unit tests or exams)
e) Long-term projects

## Professional Development to Teach Mathematics

24. 

## A. In the past two years, have you participated in professional development in any of the following? <br> Click one circle for each line.

Yes No Yes No
a) Mathematics content
b) Mathematics pedagogy/instruction
c) Mathematics curriculum
d) Integrating technology into mathematics instruction
e) Improving students' critical thinking or problem solving skills
f) Mathematics assessment
g) Addressing individual students' needs

Thank you for the thought, time, and effort you have put into completing this questionnaire.
To submit your completed questionnaire, please click the "Finish" button.

## Teacher Questionnaire

 Science
## Teacher Questionnaire Science

Your school has agreed to participate in TIMSS 2023 (Trends in International Mathematics and Science Study), an educational research project sponsored by the International Association for the Evaluation of Educational Achievement (IEA). TIMSS measures trends in student achievement in mathematics and science and studies differences in national education systems in more than 60 countries in order to help improve teaching and learning worldwide.

This questionnaire is addressed to teachers of eighth-grade students, and seeks information about teachers' academic and professional backgrounds, classroom resources, instructional practices, and attitudes toward teaching. Since your class has been selected as part of a nationwide sample, your responses are very important in helping to describe secondary education in the United States.

Some of the questions in the questionnaire refer to the "TIMSS class" or "this class." This is the class that is identified with the login documentation, and which will be tested as part of TIMSS in your school. If you teach some but not all of the students in the TIMSS class, please think only of the students that you teach when answering these class-specific questions. It is important that you answer each question carefully so that the information that you provide reflects your situation as accurately as possible.

Since TIMSS is an international study and all countries are using the same questionnaire, you may find that some of the questions seem unusual or are not entirely relevant to you or schools in the United States. Nevertheless, it is important that you do your best to answer all of the questions so comparisons can be made across countries in the studies.

It is estimated that you will need approximately 35 minutes to complete this questionnaire. We appreciate the time and effort that this takes and thank you for your cooperation and contribution.

To begin the questionnaire, please click on the "Next" button. When navigating through the questionnaire, make sure to confirm your responses by clicking on the "Next" or "Back" button. To go to a particular section or item, please click on the corresponding link in the "Table of Contents." For some questions, you will be automatically taken to the appropriate next question based on your response.

When you have completed the questionnaire, please click on the "Finish" button at the end of the last question in order to submit your answers.

Thank you.

## About You <br> 1. What year did you start teaching? <br> $\square$

Please type in a year.

## 2. By the end of this school year, how many years will you have been teaching altogether?

years

Please round to the nearest whole number.

## 3. Which of these describes you?

Click one circle only.

Female

- Another gender


## 4. How old are you?

Click one circle only.Under 25

25-2930-3940-4950-59

60 or more
5. What is the highest level of formal education you have completed?

Click one circle only.

Did not complete high school

High school graduate
(If you have not completed any college, you will be directed to Q7)Associate's degree (2-year college program)

Bachelor's degree (4-year college program)

Master's degree or professional degree (MD, DDS, lawyer, minister)

Doctorate (Ph.D., Ed.D.)
6. During your college or university education, what was your major or main area(s) of study?

Click one circle for each line.
Yes No
a) Mathematics
b) Biology
c) Physics
d) Chemistry
e) Earth Science
f)

Education-Mathematics
g) Education-Science
h) Education-General
i) Other

## School Emphasis on Academic Success

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

Click one circle for each line.
Very high High Medium Low Very low
a) Teachers' understanding of the school's curricular goals
b) Teachers' degree of success in implementing the school's curriculum
c) Teachers' expectations for student achievement
d) Teachers' ability to inspire students
e) Parental involvement in school activities
f) Parental commitment to ensure that students are ready to learn

## 7. (continued)

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

Click one circle for each line.
Very high High Low Low Very low
g) Parental expectations for student achievement
h) Parental support for student achievement
i) Students' desire to do well in school
j) Students' ability to reach school's academic goals
k) Students' respect for classmates who excel academically

## School Environment

8. How much do you agree or disagree with the following statements about your current school?

Click one circle for each line.

| Agree | Agree | Disagree | Disagree |
| :---: | :---: | :---: | :---: |
| a lot | a little | a little | a lot |

a) I feel safe at this school
b) This school's security policies and practices are sufficient
c) The students behave in an orderly manner
d) The students are respectful of the teachers
e) The students respect school property
f) This school has clear rules about student conduct
g) This school's rules are enforced in a fair and consistent manner

## About Being a Teacher

9. How often do you have these feelings about being a teacher?

Very often Often $\quad$ Sometimes $\quad$| Never or |
| :---: |
| almost never |

a) I am content with my profession as a teacher
b) I find my work full of meaning and purpose
c) I am enthusiastic about my job
d) My work inspires me
e) I am proud of the work I do
f) I feel appreciated as a teacher
g) I enjoy the challenges of teaching
10. How much do you agree or disagree with the statements below?

| Agree | Agree | Disagree | Disagree |
| :---: | :---: | :---: | :---: |
| a lot | a little | a little | a lot |

a) There are too many students in the classes
b) I have too much material to cover in class
c) I have too many teaching hours
d) I need more time to prepare for class
e) I need more time to assist individual students
f) I feel too much pressure from parents
g) I have difficulty keeping up with all of the changes to the curriculum
h) I have too many administrative tasks

## About Teaching the TIMSS Class

## 11. How many students are in this class?

$\square$ students

Type in the number.
12. How many eighth-grade students experience difficulties understanding spoken English?
$\square$ students in this class

Type in the number.

## 13. How often do you do the following in teaching this class?

Click one circle for each line.

| Every or <br> almost <br> every lesson | About half <br> the lessons | Some <br> lessons | Never |
| :---: | :---: | :---: | :---: |

a) Relate the lesson to students' daily lives
b) Ask students to explain their answers
c) Communicate goals or objectives for the lesson to the students
d) Ask students to complete challenging exercises that require them to go beyond the instruction
e) Encourage classroom discussions among students
f) Link new content to students' prior knowledge
g) Ask students to decide their own problem solving procedures
14. In your view, to what extent do the following limit how you teach this class?

Click one circle for each line.

Not at all Some A lot
a) Students lacking prerequisite knowledge or skills
b) Students suffering from lack of basic nutrition
c) Students suffering from not enough sleep
d) Students absent from class
e) Disruptive students
f) Uninterested students
g) Distracted students
h) Students with mental, emotional, or psychological impairment
i) Students with difficulties understanding the language of instruction

Teaching Science to the TIMSS Class
15. In a typical week, how much time do you spend teaching science to the students in this class?
$\square$ minutes per week

Type in the number of minutes per week.
Please convert the number of hours into minutes.
16. In teaching science to the students in this class, how often do you ask them to do the following?

| Every or <br> almost <br> every lesson | About half <br> the lessons | Some <br> lessons$\quad$ Never |
| :---: | :---: | :---: | :---: |

a) Listen to me explain new science content
b) Observe natural phenomena and describe what they see
c) Watch me demonstrate an experiment or investigation
d) Read their textbooks or other resource materials
e) Memorize facts and principles
f) Use scientific formulas and laws to solve routine problems
g) Do field work outside of class
h) Work in mixed ability groups
i) Work in same ability groups
17. Which best describes the science course you are teaching to the class with the TIMSS students?

Click one circle only.

General science (several content areas of science taught separately)

Integrated science (several content areas of science combined and taught together throughout the year)

Life science (e.g., biology, ecosystems, human health)

Physical science (e.g., physics or chemistry)

Earth science (e.g., geology, Earth and the solar system, fossils)
18. How much emphasis do you place on the following when teaching science to students in this class?

Click one circle for each line.
A lot
Some
None
a) Encouraging students to ask questions about scientific phenomena
b) Having students predict the outcomes of experiments or investigations
c) Having students discuss variation in data from experiments or investigations
d) Having students use multiple sources of evidence to explain scientific phenomena
e) Having students create representations (e.g., models, graphs) to explain scientific phenomena
f) Having students use scientific concepts to explain phenomena
g) Having students argue about science questions
h) Having students conduct experiments (hands-on or virtually)
19. How often do you do the following when teaching this class?

Click one circle for each line.

| At least <br> once a <br> week | Once or <br> twice a <br> month | A few <br> times a | Never or <br> almost |
| :---: | :---: | :---: | :---: |
|  | year | never |  |

a) Develop students' positive attitudes toward the natural environment
b) Encourage students to use fewer resources (e.g., water, energy)
c) Discuss how student actions in and outside of school can help the natural environment
d) Discuss environmental issues (e.g., climate, endangered animals)
20. Do you do these things to teach students about environmental issues and sustainability?
a) Take students to visit natural areas (e.g., a pond or meadow)
b) Have students participate in environmentally responsible activities (e.g., pick up trash)
c) Have students do research or projects on a particular environmental topic (e.g., pollution, climate)
d) Provide opportunities for students to participate in outdoor environmental education programs outside of school
21. How much do you agree or disagree that education about environmental sustainability should be a priority for schools?

Click one circle only.

Agree a lot

Agree a little

Disagree a little

Disagree a lot

## Using Digital Devices for Teaching Science to the TIMSS Class

22. A. Do the students in this class have digital devices (including computers, tablets, or smartphones) available to use during science lessons?

No
22. B. What access do the students have to digital devices?

Click one circle for each line.

Yes No
a) The class has digital devices for each student to use
b) The class has digital devices that students can share
c) The school has digital devices that the class can use sometimes
d) Students bring their own digital devices

## C. How often do you have students use digital devices during science instruction?

Click one circle only.

At least once a week

Once or twice a month

A few times a year

Never or almost never
22. D. How often do you ask the students in your class to use digital devices to do these science activities?

Click one circle for each line.

## At least once a week <br> Once or twice a month <br> A few times a <br> year <br> Never or almost never

a) Solve extended or contextualized problems
b) Create graphs, tables, or other data displays
c) Play games involving science concepts
d) Conduct virtual experiments or other simulations
e) Read the textbook or watch instructional videos
f) Take a test
23. How much do each of these keep you from incorporating digital devices into science instruction?

Click one circle for each line.

Not at all Somewhat A lot
a) Not knowing how to use digital devices to improve student learning
b) Not enough access to digital devices
c) Keeping students on task when the class is using digital devices
d) Lack of technical support from the school

## Science Topics Taught to the TIMSS Class

24. The following list includes topics and concepts addressed by the TIMSS science test. Choose the response that best describes when each topic or concept is taught for students in this class.

If a topic or concept was in the curriculum before eighth grade, choose "Mostly taught before this year." If you have taught a topic this year, choose "Mostly taught this year." If a topic is not in the eighth-grade curriculum for this year or you have not yet taught a topic, choose "Not yet taught."
A. Biology
a) Defining characteristics of major taxonomic groups of organisms
b) Structures and functions of major organs and organ systems
c) How animals maintain stable body conditions
d) Major structures and functions in plant and animal cells
e) Basic processes of photosynthesis
f) Basic processes of cellular respiration
g) Life cycles of mammals, birds, amphibians, insects, and plants
h) Processes for reproduction and inheritance in plants and animals
i) How variation in traits relates to natural selection and changes in life on Earth over time
j) Interpreting food web diagrams and the flow of energy in $\begin{gathered}\text { AppendxX }\end{gathered}$

## Mostly

 taught before this yearMostly taught this year

Not yet taught
k) Cycling of water, oxygen, and carbon through ecosystems
I) Predation, competition, and symbiosis in ecosystems
m) How changes in an ecosystem affect the populations of organisms that live there
n) How human actions can positively or negatively impact the environment
o) How to prevent transmission of common diseases among humans
p) Importance of diet, exercise, and lifestyle choices for maintaining good human health
24. (continued)

Choose the response that best describes when each topic or concept is taught for students in this class.

If a topic or concept was in the curriculum before eighth grade, choose "Mostly taught before this year." If you have taught a topic this year, choose "Mostly taught this year." If a topic is not in the eighth-grade curriculum for this year or you have not yet taught a topic, choose "Not yet taught."

Click one circle for each line.
B. Chemistry

a) | Structure of atoms (i.e., protons, neutrons, electrons) and |
| :--- |
| molecules |

b) Differences among elements, compounds, and mixtures
c) How to interpret the periodic table of elements
d) Classifying matter according to physical and chemical properties
e) Methods for separating mixtures
f) Solution concentration and rate of dissolving
g) Properties of acids and bases
h) Matter and energy in chemical reactions, including evidence of chemical change
i) How to change the rate of chemical reactions
j) Chemical bonds (e.g., role of electrons)

| Mostly <br> taught | Mostly <br> before this <br> year | taught <br> this year |
| :---: | :---: | :---: | | Not yet |
| :---: |
| taught |

24. (continued)

Choose the response that best describes when each topic or concept is taught for students in this class.

If a topic or concept was in the curriculum before eighth grade, choose "Mostly taught before this year." If you have taught a topic this year, choose "Mostly taught this year." If a topic is not in the eighth-grade curriculum for this year or you have not yet taught a topic, choose "Not yet taught."

Click one circle for each line.

|  | Mostly <br> taught | Mostly |  |
| :--- | :---: | :---: | :---: |
| C. Physics | before this | taught | Not yet |
|  | year | this year | taught |

a) Separation and motion of atoms/molecules in solids, liquids, and gases
b) Characteristics of matter and energy during state changes
c) Types of energy (e.g., kinetic, potential, thermal) and examples of energy transformations
d) Thermal conductivity and the transfer of thermal energy between objects of different temperatures
e) Reflection, refraction, or absorption of light
f) Characteristics of sound (i.e., amplitude, frequency) and its transmission, reflection, and absorption
g) Electrical conductors and simple electrical circuits
h) Polarity, strength, and uses of permanent magnets and electromagnets
i) Speed as distance changing over time
j) Acceleration as speed changing over time
k) Effects of common forces on speed and direction of motion
I) Density and buoyancy
m ) Functioning of simple machines (e.g., levers, inclined planes, pulleys)
24. (continued)

Choose the response that best describes when each topic or concept is taught for students in this class.

If a topic or concept was in the curriculum before eighth grade, choose "Mostly taught before this year." If you have taught a topic this year, choose "Mostly taught this year." If a topic is not in the eighth-grade curriculum for this year or you have not yet taught a topic, choose "Not yet taught."
a) Earth's structure and distribution of water on its surface
b) Gases present in Earth's atmosphere and their relative abundance
c) Changes in temperature and pressure based on altitude
d) How geological events impact Earth's surface
e) Processes in the rock cycle (e.g., lava cooling, weathering)
f) How fossils form and what they show about Earth's history
g) Processes in Earth's water cycle
h) Differences between weather and climate and geographic factors affecting climate
i) Evidence for climate change
j) Use and conservation of Earth's resources, including land, water, and renewable and nonrenewable energy sources
k) Phenomena caused by the motion of Earth and the Moon (e.g., seasons, tides, Moon phases)
I) The Sun as a star and physical features of the Earth, Moon, and other planets

## Science Homework for the TIMSS Class

## 25. A. How often do you usually assign science homework to the students in this class?

Click one circle only.

I do not assign science homework

Less than once a week

1 or 2 times a week

3 or 4 times a week

Every day
25. B. How often do you do the following with the science homework assignments for this class?

Click one circle for each line.
a) Correct assignments and give feedback to students
b) Have students correct their own homework
c) Discuss the homework in class
d) Monitor whether or not the homework was completed
e) Use the homework to contribute towards students' grades or marks

## Science Assessment of the TIMSS Class

26. How much importance do you place on these strategies to assess students' learning in science?

Click one circle for each line.
A lot
Some
None
a) Observing students as they work
b) Asking students to answer questions during class
c) Short, regular written assessments
d) Longer tests (e.g., unit tests or exams)
e) Long-term projects

## Professional Development to Teach Science

27. 

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

Click one circle for each line.

Yes No Yes No
B. Do you need future professional development in any of the following?

Click one circle for each line.
a) Science content
b) Science pedagogy/instruction
c) Science curriculum
d) Integrating technology into science instruction
e) Improving students' critical thinking or inquiry skills
f) Science assessment
g) Addressing individual students' needs
h) Integrating environmentalism and sustainability into science instruction

Thank you for the thought, time, and effort you have put into completing this questionnaire.
To submit your completed questionnaire, please click the "Finish" button.

Offline Mode © IEA Online SurveySystem 2007-2022-Help

Directions
In this questionnaire, you will find questions about you and what you think. For each question, you should choose the answer you think is best.

Let us take a few minutes to practice the kinds of questions you will answer in this questionnaire.

## Examples

## Example 1

Example 1 is one kind of question you will find in this questionnaire.

## Do you go to school?

Click one circle only.

Yes

No

## Example 2

Example 2 is another kind of question you will find in this questionnaire.

## How often do you do these things?

Click one circle for each line.
Every day Almost every day Sometimes Never
a) I talk with my friends
b) I play sports
c) I ride a skateboard

## Example 3

Example 3 is another kind of question you will find in this questionnaire.
What do you think? Tell how much you agree with these statements.

Click one circle for each line.

| Agree | Agree | Disagree | Disagree |
| :---: | :---: | :---: | :---: |
| a lot | a little | a little | a lot |

a) Watching movies is fun
b) Ice cream tastes good
c) Waking up early is difficult
d) I enjoy doing chores

- Read each question carefully, and pick the answer you think is best.
- Click the circle next to or under your answer.
- Ask for help if you do not understand something or are not sure how to answer.
- You may change your answers at any time before submitting the questionnaire.


## About You

## 1. A. Which of these describes you?

Click one circle only.

Girl
Boy

## 1. B. Are you Hispanic or Latino?

Click one circle only.

- Yes, I am Hispanic or Latino

No, I am not Hispanic or Latino

1. C. Which of the following best describes you?

Click all circles that apply.
$\square$ White
$\square$ Black or African American

- Asian
$\square$ American Indian or Alaska Native
$\square \quad$ Native Hawaiian or other Pacific Islander


## 2. A. When were you born?

## a) Month

Click the circle next to the month you were born.

- January
- February
- March
- April
- May
- June
- July

August

- September

October

- November
- December

2. B. When were you born?
b) Year

Click the circle next to the year you were born.

2011

- 2012
- 2013
- 2014
- 2015
- 2016
- 2017

O Other

## 3. A. How often do you speak English at home?

Click one circle only.

I always speak English at home
I almost always speak English at home

I sometimes speak English and sometimes speak another language at home
I never speak English at home
3. B. What language do you speak at home (other than English)?

Check all that apply.

Spanish

Other (please specify)
$\square$
4. About how many books are there in your home? (Do not count magazines, newspapers, or your school books.)

Click one circle only.

None or very few (0-10 books)
This shows 10 books H14.

Enough to fill one shelf (11-25 books)
This shows 25 books
जhthind

Enough to fill one bookcase (26-100 books)
This shows 100 books
hithatitut
Huthint
जियमएय

Enough to fill two bookcases (101-200 books)
This shows 200 books
Handumblumbut hundur huthunt humbut humbut Humbuthmuntu

Enough to fill three or more bookcases (more than 200)
This shows more than 200 books

hathant hathan mandut
Mundur mundur mumbut

5. Do you have any of these things at your home?

Click one circle for each line.
Yes
No
a) Your own computer or tablet
b) A shared computer or tablet you can use
c) A smartphone
d) Access to the internet
e) Study desk/table for your use
f) Your own room
g) A gaming system (e.g., PlayStation, Nintendo Switch, Xbox)
6. How many of the following devices are currently used in your home?

Click one circle for each line.

None One Two | Three or |
| :--- |
| more |

Desktop or laptop computers
Tablet devices (e.g., iPad, Surface
Pro, Kindle)
lere your parents/guardians born in the United States? ("United States"
udes the 50 states, its territories, the District of Columbia, and U.S. military
es abroad.)

This question is about your Parent/Guardian A and Parent/Guardian B. If you have only one parent/guardian, answer for Parent/Guardian A. If you have two parents/guardians, choose one for Parent/Guardian A and the other for Parent/Guardian B.

## A. Parent/Guardian A

Click one circle only.

- Yes
- No

I don't know

- Not applicable


## B. Parent/Guardian B

Click one circle only.

- Yes
- No

I don't know

- Not applicable


## 8. Were you born in the United States?

Click one circle only.

- Yes

No

## 9. About how often are you absent from school?

Click one circle only.

Once a week
Once every two weeks
Once a month

Once every two months
Never or almost never
10. Have you ever repeated a grade in elementary school?

Click one circle only.

- Yes

11. How often do you feel this way when you arrive at school?

Click one circle for each line.

Every day Almost every day Sometimes Never
a) I feel tired
b) I feel hungry
12. How much do you agree with these statements?

Click one circle for each line.

| Agree | Agree | Disagree | Disagree |
| :---: | :---: | :---: | :---: |
| a lot | a little | a little | a lot |

a) I can write and edit text on a computer, tablet, or smartphone
b) I can create school presentations using a computer, tablet, or smartphone
c) I can create tables, charts, and graphs using a computer, tablet, or smartphone
d) I can find information that I need online
e) I can tell if a website is trustworthy
f) I can easily do new things on computers, laptops, or smartphones
g) I can help my friends or family members with using their computers, laptops, or smartphones

## 13. How much effort did you apply to succeed on this test?

Click one circle only.

No effort at all
Very little effort
Some effort

A lot of effort

## 14. How much do you agree with these statements?

Click one circle for each line.

| Agree | Agree | Disagree | Disagree |
| :---: | :---: | :---: | :---: |
| a lot | a little | a little | a lot |

a) I care about the protection of plants and animals
b) It makes me sad when nature is destroyed
c) I enjoy finding out what kinds of plants and animals live in my surrounding area
d) I enjoy being in nature (e.g., forests, parks, deserts)
e) Addressing climate change should be a high priority
15. How often do you do these things to help the natural environment?

Click one circle for each line.

Every day | Almost |
| :---: |
| every |
| day | Sometimes Never

a) I try to reuse things (e.g., bags, bottles)
b) I try to use less resources (e.g., water, food)
c) I talk about how to help the environment (e.g., saving water, picking up trash)
d) I try to learn about environmental problems (e.g., climate, endangered animals)
e) I try to participate in group activities to help the environment
f) I tell my friends when they are doing

## 16. The following questions ask about activities you do outside of school.

Click one circle for each line.

## Yes <br> No

Do you play on a sports team outside of school?

Do you often play a musical instrument outside of school?

Are you studying something in a class outside of school?

Do you belong to a club outside of school (like Boy/Girl Scouts, 4-H, or Boys and Girls Club)?

## Your School

## 17. What do you think about your school? Tell how much you agree with these statements.

Click one circle for each line.

| Agree | Agree | Disagree | Disagree |
| :---: | :---: | :---: | :---: |
| a lot | a little | a little | a lot |

a) I like being in school
b) I feel safe when I am at school
c) I feel like I belong at this school
d) Teachers at my school care about me
e) I am proud to go to this school
f) I have friends at this school
g) Students at this school like me the way I am
18. During this school year, how often have other students from your school done any of the following things to you in person, through messaging, or through social media?

Click one circle for each line.

| At least <br> once a | Once or <br> twice | A few |  |
| :---: | :---: | :---: | :---: |
| week | a month | a year | Never |

a) Made fun of me or called me names
b) Left me out of their games or activities
c) Spread lies about me
d) Stole something from me
e) Damaged something of mine on purpose
f) Hit or hurt me (e.g., shoving, hitting, kicking)
g) Made me do things I didn't want to do
h) Sent me nasty or hurtful messages online
i) Shared nasty or hurtful messages about me online
j) Shared embarrassing photos of me online
k) Threatened me

## Mathematics in School

19. In mathematics lessons, how often do you work on problems on your own?

Click one circle only.

Every or almost every lesson
About half the lessons

Never
20. How much do you agree with these statements about learning mathematics?

Click one circle for each line.

| Agree | Agree | Disagree | Disagree |
| :---: | :---: | :---: | :---: |
| a lot | a little | a little | a lot |

a) I enjoy learning mathematics
b) I wish I did not have to study mathematics
c) Mathematics is boring
d) I learn many interesting things in mathematics
e) I like mathematics
f) I like any schoolwork that involves numbers
g) I like to solve mathematics problems
h) I look forward to mathematics lessons
i) Mathematics is one of my favorite subjects
21. How much do you agree with these statements about your mathematics lessons?

Click one circle for each line.

| Agree | Agree | Disagree | Disagree |
| :---: | :---: | :---: | :---: |
| a lot | a little | a little | a lot |

a) My teacher makes it clear what we should learn in each lesson
b) My teacher is easy to understand
c) My teacher has clear answers to my questions
d) My teacher is good at explaining mathematics
e) My teacher does a variety of things to help us learn
f) My teacher explains a topic again when we don't understand
g) My teacher gives me helpful feedback on my work
h) My teacher asks me to show what I have learned
i) My teacher asks me to explain my answers
22. How often do these things happen in your mathematics lessons?

Click one circle for each line.
Every or
almost
every
lesson

About half the Some lessons lessons

Never
a) Students don't listen to what the teacher says
b) There is too much noise for students to work well
c) My teacher has to wait a long time for students to be quiet
d) Students interrupt the teacher
e) Students do not follow the classroom rules
f) Other students' behavior makes it hard for me to concentrate
23. How much do you agree with these statements about mathematics?

Click one circle for each line.
a) I usually do well in mathematics
b) Mathematics is harder for me than for many of my classmates
c) I am just not good at mathematics
d) Mathematics is easy for me
e) I am good at working out difficult mathematics problems
f) Mathematics is harder for me than any other subject
g) Mathematics makes me confused

## Science in School

24. In science lessons, how often does your teacher ask you to conduct science experiments?

Click one circle only.

At least once a week

Once or twice a month

A few times a year
Never
25. How much do you agree with these statements about learning science?

Click one circle for each line.

| Agree | Agree | Disagree | Disagree |
| :---: | :---: | :---: | :---: |
| a lot | a little | a little | a lot |

a) I enjoy learning science
b) I wish I did not have to study science
c) Science is boring
d) I learn many interesting things in science
e) I like science
f) I look forward to learning science in school
g) Science teaches me how things in the world work
h) I like to do science experiments
i) Science is one of my favorite subjects

## 26. How much do you agree with these statements about your science lessons?

Click one circle for each line.

| Agree | Agree | Disagree | Disagree |
| :---: | :---: | :---: | :---: |
| a lot | a little | a little | a lot |

a) My teacher makes it clear what we should learn in each lesson
b) My teacher is easy to understand
c) My teacher has clear answers to my questions
d) My teacher is good at explaining science
e) My teacher does a variety of things to help us learn
f) My teacher explains a topic again when we don't understand
g) My teacher gives me helpful feedback on my work
h) My teacher asks me to show what I have learned
i) My teacher asks me to explain my answers

## 27. How often do these things happen in your science lessons?

Every or
almost
every
lesson
a) Students don't listen to what the teacher says
b) There is too much noise for students to work well
c) My teacher has to wait a long time for students to be quiet
d) Students interrupt the teacher
e) Students do not follow the classroom rules
f) Other students' behavior makes it hard for me to concentrate
28. How much do you agree with these statements about science?

Click one circle for each line.

| Agree | Agree | Disagree | Disagree |
| :---: | :---: | :---: | :---: |
| a lot | a little | a little | a lot |

a) I usually do well in science
b) Science is harder for me than for many of my classmates
c) I am just not good at science
d) Science is easy for me
e) Science is harder for me than any other subject
f) Science makes me confused

## 29. Are you preparing for or have you participated in a science club, a science fair, or a science competition?

Click one circle only.

Yes

Thank you!
To submit your completed questionnaire, please click the "Finish" button.

## Directions

In this questionnaire, you will find questions about yourself. Some questions ask for facts while other questions ask for your opinion.

Each question is followed by a number of answers. Click the circle next to or under the answer of your choice as shown in Examples 1, 2, and 3.

## Examples

## Example 1

Do you go to school?
Click one circle only.

Yes
No

## Example 2

## How often do you do these things?

a) I talk with my friends
b) I play sports
c) I ride a skateboard

## Example 3

What do you think? Tell how much you agree with these statements.

Click one circle for each line.

| Agree | Agree | Disagree | Disagree |
| :---: | :---: | :---: | :---: |
| a lot | a little | a little | a lot |

a) Watching movies is fun
b) Ice cream tastes good
c) Waking up early is difficult
d) I enjoy doing chores

- Read each question carefully, and pick the answer you think is best.
- Click the circle next to or under your answer.
- Ask for help if you do not understand something or are not sure how to answer.
- You may change your answers at any time before submitting the questionnaire.


## About You

## 1. A. Which of these describes you?

Click one circle only.

Girl
Boy

## 1. B. Are you Hispanic or Latino?

Click one circle only.

Yes, I am Hispanic or Latino
No, I am not Hispanic or Latino

## 1. C. Which of the following best describes you?

Click all circles that apply.
$\square$ White
$\square$ Black or African American
$\square$ Asian
$\square$ American Indian or Alaska Native
$\square$ Native Hawaiian or other Pacific Islander

## 2. A. When were you born?

## a) Month

Click the circle next to the month you were born.

J January

- February
- March
- April
- May
- June
- July
- August
- September

October

- November
- December

2. B. When were you born?
b) Year

Click the circle next to the year you were born.

2006

- 2007

2008

- 2009
- 2010
- 2011
- 2012
- 2013
- 2014

Other
3. A. How often do you speak English at home?

Click one circle only.

Always
Almost always
Sometimes
Never
3. B. What language do you speak at home (other than English)?

Check all that apply.

Spanish
Other (please specify)
$\square$
4. About how many books are there in your home? (Do not count magazines, newspapers, or your school books.)

Click one circle only.

None or very few
(0-10 books)
Enough to fill one shelf (11-25 books)

- Enough to fill one bookcase (26-100 books)
- Enough to fill two bookcases (101-200 books)
- Enough to fill three or more bookcases (more than 200)

5. Do you have any of these things at your home?
a) Your own computer or tablet
b) A shared computer or tablet you can use
c) A smartphone
d) Access to the internet
e) Study desk/table for your use
f) Your own room
g) A gaming system (e.g., PlayStation, Nintendo Switch, Xbox)
6. How many of the following devices are currently used in your home?

Click one circle for each line.

Desktop or
laptop
computers
(Tablet devices (e.g., iPad, Surface Pro, Kindle))
The following questions are about your Parent/Guardian A and Parent/Guardian B. If you have only one parent/guardian, answer for Parent/Guardian A. If you have two parents/guardians, choose one for Parent/Guardian A and the other for Parent/Guardian B.
7. What is the highest level of education completed by your parents/guardians?

Click one circle in each column.

| Parent / | Parent / |
| :---: | :---: |
| Guardian A | Guardian B |

Less than high school
Some high school

High school graduate
Associate's degree (2-year college program)
Bachelor's degree (4-year college program)
Master's degree or professional degree (MD, DDS, lawyer, minister)

Doctorate (Ph.D., Ed.D.)
I don't know

Not applicable

## 8. How far in your education do you expect to go?

Click one circle only.

Finish middle school

Finish high school
Finish Associate's degree (2-year college program)
Finish Bachelor's degree (4-year college program)
Finish Master's degree or professional degree (MD, DDS, lawyer, minister)
Finish Doctorate (Ph.D., Ed.D.)
9. Were your parents/guardians born in the United States? ("United States" includes the 50 states, its territories, the District of Columbia, and U.S. military bases abroad.)

## A. Parent/Guardian A

Click one circle only.

- Yes

No

I don't know

Not applicable

## B. Parent/Guardian B

Click one circle only.

- I don't know

Not applicable
10. A. Were you born in the United States?

Click one circle only.
Yes
No
10. B. If you were not born in the United States, how old were you when you came to the United States?

Click one circle only.

- Older than 10 years old

5 to 10 years old
Younger than 5 years old

## 11. About how often are you absent from school?

Click one circle only.
Once a week

- Once every two weeks
- Once a month
- Once every two months

Never or almost never
12. Have you ever repeated a grade?

Click one circle for each line.

Yes No
In elementary school
In middle or junior high school
13. How often do you feel this way when you arrive at school?

Click one circle for each line.

## Every day Almost every day Sometimes Never

a) I feel tired
b) I feel hungry
14. How often do you use the internet to do the following tasks for mathematics or science schoolwork (including classroom tasks, homework, and studying outside of class)?

Click one circle for each line.

| At least | Once or <br> once | Never or <br> twice |
| :---: | :---: | :---: |
| a week | a month | never |

a) Access the textbook or other course materials
b) Access assignments posted online by my teacher
c) Collaborate with classmates on assignments or projects
d) Ask my teacher questions
e) Find information, articles, or tutorials about mathematics or science
f) Access learning games or activities related to mathematics or science
15. How much do you agree with these statements?

Click one circle for each line.

| Agree | Agree | Disagree | Disagree |
| :---: | :---: | :---: | :---: |
| a lot | a little | a little | a lot |

a) I can write and edit text on a computer, tablet, or smartphone
b) I can create school presentations using a computer, tablet, or smartphone
c) I can create tables, charts, and graphs using a computer, tablet, or smartphone
d) I can find information that I need online
e) I can tell if a website is trustworthy
f) I can easily do new things on computers, laptops, or smartphones
g) I can help my friends or family members with using their computers, laptops, or smartphones

## 16. How much do you agree with these statements?

Click one circle for each line.

| Agree | Agree | Disagree | Disagree |
| :---: | :---: | :---: | :---: |
| a lot | a little | a little | a lot |

a) I care about the protection of plants and animals
b) Nature exists to benefit humans regardless of the consequences
c) The most important reason for protecting natural areas is so people can enjoy them
d) I am confident that environmental problems will be solved by science and technology
e) It makes me sad when nature is destroyed by humans
f) I enjoy finding out what kinds of plants and animals live in my surrounding area
g) I enjoy being in nature (e.g., forests, parks, deserts)
h) Protecting nature is more important than economic growth
i) Addressing climate change should be a high priority

Every day | Almost |
| :---: | :---: |
| every |
| day | Sometimes Never

a) I try to reuse things (e.g., bags, bottles)
b) I try to use less resources (e.g., water,
food)
c) I talk about how to help the environment (e.g., saving water, picking up trash)
d) I try to learn about environmental
d) Itry to learn about environmental animals)
e) I try to participate in group activities to help the environment
f) I tell my friends when they are doing things that harm the environment
18. How much effort did you apply to succeed on this test?

Click one circle only.

- No effort at all

Very little effort

- Come effort

Quite a bit of effort
A lot of effort
19. The following questions ask about activities you do outside of school.

Click one circle for each line.

Do you often play a musical instrument outside of school?

Are you studying something in a class outside of school?

Do you belong to a club outside of school (like Boy/Girl Scouts, 4-H, or Boys and Girls Club)?

## Your School

20. What do you think about your school? Tell how much you agree with these statements.

Click one circle for each line.

| Agree | Agree <br> a lot | Disagree <br> a little | Disagree <br> a lot |
| :---: | :---: | :---: | :---: |

a) I like being in school
b) I feel safe when I am at school
c) I feel like I belong at this school
d) Teachers at this school care about me
e) I am proud to go to this school
f) I have friends at this school
g) Students in this school respect me
h) Students at this school like me the way I am
21. During this school year, how often have other students from your school done any of the following things to you in person, through messaging, or through social media?

Click one circle for each line.

| At | Once | A | Never |
| :---: | :---: | :---: | :---: |
| least | or | few |  |
| once | twice | times |  |


| $a$ | $a$ | $a$ |
| :---: | :---: | :---: |
| week | month | year |

a) Said mean things about my physical appearance (e.g., my hair, my size)
b) Spread lies about me
c) Shared my secrets with others
d) Refused to talk to me
e) Said hurtful things to or about me because of my cultural background (e.g., race, ethnicity, religion)
f) Stole something from me
g) Made me do things I didn't want to do
h) Sent me nasty or hurtful messages online
i) Shared nasty or hurtful things about me online
j) Shared embarrassing photos of me online
k) Threatened me
I) Physically hurt me
$m$ ) Excluded me from their group (e.g., parties, messaging)
n) Damaged something of mine on purpose

## Mathematics in School

22. In mathematics lessons, how often do you work on problems on your own?

Click one circle only.

Every or almost every lesson
About half the lessons

Some lessons
Never

## 23. How much do you agree with these statements about learning mathematics?

| Agree | Agree | Disagree | Disagree |
| :---: | :---: | :---: | :---: |
| a lot | a little | a little | a lot |

a) I enjoy learning mathematics
b) I wish I did not have to study mathematics
c) Mathematics is boring
d) I learn many interesting things in mathematics
e) I like mathematics
f) I like any schoolwork that involves numbers
g) I like to solve mathematics problems
h) I look forward to mathematics class
i) Mathematics is one of my favorite subjects

## 24. How much do you agree with these statements about your mathematics lessons?

Click one circle for each line.
a) My teacher makes it clear what we should learn in each lesson
b) My teacher is easy to understand
c) My teacher has clear answers to my questions
d) My teacher is good at explaining mathematics
e) My teacher does a variety of things to help us learn
f) My teacher explains a topic again when we don't understand
g) My teacher gives me helpful feedback on my work
h) My teacher asks me to show what I have learned
i) My teacher asks me to explain my answers
j) My teacher asks us to apply what we have learned in new situations
25. How often do these things happen in your mathematics lessons?

Click one circle for each line.

| Every or <br> almost <br> every | About <br> half <br> the | Some <br> lesson <br> lessons |  |
| :---: | :---: | :---: | :---: |
| lessons | Never |  |  |

a) Students don't listen to what the teacher says
b) There is too much noise for students to work well
c) My teacher has to wait a long time for students to be quiet
d) Students interrupt the teacher
e) Students do not follow the classroom rules
f) Other students' behavior makes it hard for me to concentrate
26. How much do you agree with these statements about mathematics?

Click one circle for each line.

| Agree | Agree | Disagree | Disagree |
| :---: | :---: | :---: | :---: |
| a lot | a little | a little | a lot |

a) I usually do well in mathematics
b) Mathematics is harder for me than for many of my classmates
c) Mathematics is not one of my strengths
d) Mathematics is easy for me
e) I am good at working out difficult mathematics problems
f) I am good at explaining mathematics to others
g) Mathematics is harder for me than any other subject
h) Mathematics makes me confused

## 27. How much do you agree with these statements about mathematics?

Click one circle for each line.

| Agree | Agree | Disagree | Disagree |
| :---: | :---: | :---: | :---: |
| a lot | a little | a little | a lot |

a) I think learning mathematics will help me in my daily life
b) I need mathematics to learn other school subjects
c) I need to do well in mathematics to get into the college or university of my choice
d) I need to do well in mathematics to get the job I want
e) I would like a job that involves using mathematics
f) It is important to learn about mathematics to get ahead in the world
g) Learning mathematics will give me more job opportunities when I am an adult
h) My parents think that it is important
that I do well in mathematics
i) It is important to do well in mathematics

## Science in School

28. In science lessons, how often does your teacher ask you to conduct science experiments?

Click one circle only.

At least once a week
Once or twice a month
A few times a year
Never
29. How much do you agree with these statements about learning science?

Click one circle for each line.

| Agree | Agree | Disagree | Disagree |
| :---: | :---: | :---: | :---: |
| a lot | a little | a little | a lot |

a) I enjoy learning science
b) I wish I did not have to study science
c) Science is boring
d) I learn many interesting things in science
e) I like science
f) I look forward to learning science in school
g) Science teaches me how things in the world work
h) I like to conduct science experiments
i) Science is one of my favorite subjects
30. How much do you agree with these statements about your science lessons?

| Agree | Agree | Disagree | Disagree |
| :---: | :---: | :---: | :---: |
| a lot | a little | a little | a lot |

a) My teacher makes it clear what we should learn in each lesson
b) My teacher is easy to understand
c) My teacher has clear answers to my questions
d) My teacher is good at explaining science
e) My teacher does a variety of things to help us learn
f) My teacher explains a topic again when we don't understand
g) My teacher gives me helpful feedback on my work
h) My teacher asks me to show what I have learned
i) My teacher asks me to explain my answers
j) My teacher asks us to apply what we have learned in new situations
31. How often do these things happen in your science lessons?

Click one circle for each line.

| Every <br> or | About <br> almost <br> every |  <br> half <br> the | Some |
| :---: | :---: | :---: | :---: |

a) Students don't listen to what the teacher says
b) There is too much noise for students to work well
c) My teacher has to wait a long time for students to be quiet
d) Students interrupt the teacher
e) Students do not follow the classroom rules
f) Other students' behavior makes it hard for me to concentrate

## 32. How much do you agree with these statements about science?

Click one circle for each line.
a) I usually do well in science
b) Science is harder for me than for many of my classmates
c) Science is not one of my strengths
d) Science is easy for me
e) I am good at working out difficult science problems
f) I am good at explaining science to others
g) Science is harder for me than any other subject
h) Science makes me confused
33. How much do you agree with these statements about science?

Click one circle for each line.

| Agree | Agree | Disagree | Disagree |
| :---: | :---: | :---: | :---: |
| a lot | a little | a little | a lot |

a) I think learning science will help me in my daily life
b) I need science to learn other school
subjects
c) I need to do well in science to get into the college or university of my choice
d) I need to do well in science to get the job I want
e) I would like a job that involves using science
f) It is important to learn about science to get ahead in the world
g) Learning science will give me more job opportunities when I am an adult
h) My parents think that it is important that I do well in science
i) It is important to do well in science
34. In this school year, are you preparing for or have you participated in any of the following activities?

Click one circle for each line.

Yes No
Science fair
Science club
Science competition

## Homework

35. How often does your teacher give you homework in the following subjects?

Click one circle for each line.

|  | 3 or 4 | 1 or 2 | Less than |  |
| :---: | :---: | :---: | :---: | :---: |
| Every times times | once a |  |  |  |
| day | a week | a week | week | Never |

a) Mathematics
b) Science

Thank you for the thought, time, and effort you have put into completing this questionnaire. To submit your completed questionnaire, please click the "Finish" button.

