Trends in International Mathematics and Science Study (TIMSS) (continued)

Appendix D

TIMSS 2015 and TIMSS Advanced 2015 Questionnaires

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APPENDIX D: TIMSS 2015 AND TIMSS ADVANCED 2015 QUESTIONNAIRES

Contents

TIMSS 2015

Place Label Here

School ID ____ ____ ____ ____

Checksum ___ ___ ___ ___ ___

TRENDS IN INTERNATIONAL MATHEMATICS AND SCIENCE STUDY

School Questionnaire

Grade 4

National Center for Education Statistics
U.S. Department of Education
1990 K St. NW
Washington, DC 20006-5650

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

U.S. participation in this study is sponsored by the National Center for Education Statistics (NCES), U.S. Department of Education, and authorized by the Education Sciences Reform Act of 2002 (20 U.S.C., § 9543). Your responses are protected by federal statute (20 U.S.C., § 9573) and 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.

According to the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless such collection displays a valid OMB control number. The valid OMB control number for this voluntary information collection is 1850-0695. The time required to complete this information collection is estimated to average 30 minutes per respondent, including the time to review instructions, search existing data resources, gather the data needed, and complete and review the information collection. **If you have any comments concerning the accuracy of the time estimate(s), suggestions for improving the form, or comments or concerns regarding the status of your individual submission of this form, write directly to:** Trends in International Mathematics and Science Study (TIMSS), National Center for Education Statistics, U.S. Department of Education, 1990 K Street, N.W., Washington, D.C. 20006. OMB No. 1850-0695, Approval Expires 9/30/2017.

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School *Questionnaire*

Your school has agreed to participate in TIMSS 2015 (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 almost 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 fourth-grade 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.

When you have completed the questionnaire, please place it in the accompanying envelope and return it to the TIMSS school coordinator.

NCES is authorized to collect information from the questionnaire under the Education Science Reform Act of 2002 (ESRA 2002), 20 U.S. Code, § 9543. You do not have to provide the information requested. However, the information you provide will help the U.S. Department of Education's ongoing efforts to understand better how the educational system in the United States compares to that in other countries. There are no penalties should you choose not to participate in this study. Your answers 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. Code, § 9573). Your response will be combined with those from other participants to produce summary statistics and reports.

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Thank you.

TIMSS 2015

School Enrollment and Characteristics

1

What is the total enrollment of students in your school as of March 1, 2015?

_____ students
Write in the number.

2

What is the total enrollment of <u>fourth-grade</u> students in your school as of March 1, 2015?

_____ students
Write in the number.

3

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

*Fill in only **one** circle for each row.*

	0 to 10%	11 to 25%	26 to 50%	More than 50%
a) Come from economically disadvantaged homes	①	②	③	④
b) Come from economically affluent homes	①	②	③	④

4

Around the 1st of October 2014, 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
Write in the number.

5

Approximately what percentage of students in your school have English as their native language?

*Fill in **one** circle only.*

More than 90% -- ①
76 to 90% -- ②
51 to 75% -- ③
26 to 50% -- ④
25% or less -- ⑤

6

Of the students currently enrolled in your school, what percentage has been identified as limited-English proficient (LEP)/English language learners (ELL)?

*Fill in **one** circle only.*

0% -- ①
1 - 5% -- ②
6 - 10% -- ③
11 - 25% -- ④
26 - 50% -- ⑤
51 - 75% -- ⑥
76 - 90% -- ⑦
Over 90% -- ⑧

7

What type of school is this?

*Fill in **one** circle only.*

- Regular public school - ①
- A regular public school with a magnet program - ②
- A magnet school or school with a special program emphasis (e.g., Montessori, science/math school, performing arts school, talented/gifted school, foreign language immersion school) - ③
- Special education: a school that primarily serves students with disabilities - ④
- Alternative: a school designed to address the needs of students, typically at risk of educational failure, which cannot be met in regular schools - ⑤
- Vocational - ⑥
- Charter School - ⑦
- Private (independent) - ⑧
- Private (religiously affiliated) - ⑨
- Other - ⓪

8

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

*Fill in **one** circle only.*

- More than 500,000 people -- ①
- 100,001 to 500,000 people -- ②
- 50,001 to 100,000 people -- ③
- 30,001 to 50,000 people -- ④
- 15,001 to 30,000 people -- ⑤
- 3,001 to 15,000 people -- ⑥
- 3,000 people or fewer -- ⑦

B. Which best describes the immediate area in which your school is located?

*Fill in **one** circle only.*

- Urban–Densely populated -- ①
- Suburban–On fringe or outskirts of urban area -- ②
- Medium size city or large town -- ③
- Small town or village -- ④
- Remote rural -- ⑤

9

Which best characterizes the average income level of the school's immediate area?

*Fill in **one** circle only.*

- High --- ①
- Medium --- ②
- Low --- ③

10

Does your school provide free meals for students?

*Fill in only **one** circle for each row.*

	Yes, for all students	Yes, for some students	No
a) Breakfast	①	②	③
b) Lunch	①	②	③

11

To what degree are the following health topics emphasized in your school?

*Fill in only **one** circle for each row.*

	Very high	High	Medium	Low
a) Washing hands	①	②	③	④
b) Brushing teeth	①	②	③	④
c) A healthy diet/nutrition	①	②	③	④
d) Disease prevention	①	②	③	④

Instructional Time

12

For the fourth-grade students in your school:

A. How many <u>days per year</u> is your school open for instruction?

_____ days
Write in the number.

B. What is the <u>total instructional time</u>, excluding breaks, in a <u>typical day</u>?

_____ hours _____ minutes
Write in the number of hours and minutes per day.

C. In one <u>calendar week</u>, how many days is the school open for instruction?

*Fill in **one** circle only.*

- 6 days -- ①
- 5 1/2 days -- ②
- 5 days -- ③
- 4 1/2 days -- ④
- 4 days -- ⑤
- Other -- ⑥

13

A. Does your school provide a place where students can work on their schoolwork before or after school?

*Fill in **one** circle only.*

- Yes --- ①
- No --- ② → **(If No, go to question 14)**

If Yes,

B. Is someone available to assist them with their schoolwork?

*Fill in **one** circle only.*

- Yes --- ①
- No --- ②

14

As a general school policy, is student achievement used to assign fourth-grade students to classes (e.g., streaming, tracking, setting)?

*Fill in only **one** circle for each row.*

	Yes	No
a) For mathematics classes	①	②
b) For science classes	①	②

Resources and Technology

15

How many computers (including tablets) does your school have for use by fourth-grade students?

_____ computers
Write in the number.

16

A. Does your school have a science laboratory that can be used by fourth-grade students?

*Fill in **one** circle only.*

Yes -- ①
No -- ②

B. Do teachers usually have assistance available when students are conducting science experiments?

*Fill in **one** circle only.*

Yes --- ①
No --- ②

17

Does your school have a school library?

*Fill in **one** circle only.*

Yes -- ①
No -- ② → **(If No, go to question 18)**

If Yes,

A. <u>Approximately</u> how many books (print and digital) with different titles does your school library have (exclude magazines and periodicals)?

*Fill in only **one** circle in each column.*

	Print	Digital
250 or fewer	①	①
251–500	②	②
501–2,000	③	③
2,001–5,000	④	④
5,001–10,000	⑤	⑤
More than 10,000	⑥	⑥

B. <u>Approximately</u> how many titles of magazines and other periodicals (print and digital) does your school library have?

*Fill in only **one** circle in each column.*

	Print	Digital
0	①	①
1–5	②	②
6–10	③	③
11–30	④	④
31 or more	⑤	⑤

18

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

*Fill in only **one** circle for each row.*

	Not at all	A little	Some	A lot
A. General School Resources				
a) Instructional materials (e.g., textbooks)	1	2	3	4
b) Supplies (e.g., papers, pencils, materials)	1	2	3	4
c) School buildings and grounds	1	2	3	4
d) Heating/cooling and lighting systems	1	2	3	4
e) Instructional space (e.g., classrooms)	1	2	3	4
f) Technologically competent staff	1	2	3	4
g) Audio-visual resources for delivery of instruction (e.g., interactive white boards, digital projectors)	1	2	3	4
h) Computer technology for teaching and learning (e.g., computers or tablets for student use)	1	2	3	4
i) Resources for students with disabilities	1	2	3	4

*Fill in only **one** circle for each row.*

	Not at all	A little	Some	A lot
B. Resources for Mathematics Instruction				
a) Teachers with a specialization in mathematics	1	2	3	4
b) Computer software/ applications for mathematics instruction	1	2	3	4
c) Library resources relevant to mathematics instruction	1	2	3	4
d) Calculators for mathematics instruction	1	2	3	4
e) Concrete objects or materials to help students understand quantities or procedures	1	2	3	4
C. Resources for Science Instruction				
a) Teachers with a specialization in science	1	2	3	4
b) Computer software/ applications for science instruction	1	2	3	4
c) Library resources relevant to science instruction	1	2	3	4
d) Science equipment and materials for experiments	1	2	3	4

School Emphasis on Academic Success

19

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

*Fill in only **one** circle for each row.*

	Very high	High	Medium	Low	Very low
a) Teachers' understanding of the school's curricular goals	1	2	3	4	5
b) Teachers' degree of success in implementing the school's curriculum	1	2	3	4	5
c) Teachers' expectations for student achievement	1	2	3	4	5
d) Teachers working together to improve student achievement	1	2	3	4	5
e) Teachers' ability to inspire students	1	2	3	4	5
f) Parental involvement in school activities	1	2	3	4	5
g) Parental commitment to ensure that students are ready to learn	1	2	3	4	5
h) Parental expectations for student achievement	1	2	3	4	5
i) Parental support for student achievement	1	2	3	4	5
j) Parental pressure for the school to maintain high academic standards	1	2	3	4	5
k) Students' desire to do well in school	1	2	3	4	5
l) Students' ability to reach school's academic goals	1	2	3	4	5
m) Students' respect for classmates who excel in school	1	2	3	4	5

School Discipline and Safety

20

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

*Fill in only **one** circle for each row.*

	Not a problem	Minor problem	Moderate problem	Serious problem
a) Arriving late at school	1	2	3	4
b) Absenteeism (i.e., unjustified absences)	1	2	3	4
c) Classroom disturbance	1	2	3	4
d) Cheating	1	2	3	4
e) Profanity	1	2	3	4
f) Vandalism	1	2	3	4
g) Theft	1	2	3	4
h) Intimidation or verbal abuse among students (including texting, emailing, etc.)	1	2	3	4
i) Physical fights among students	1	2	3	4
j) Intimidation or verbal abuse of teachers or staff (including texting, emailing, etc.)	1	2	3	4

21

To what degree is each of the following a problem among teachers in your school?

*Fill in only **one** circle for each row.*

	Not a problem	Minor problem	Moderate problem	Serious problem
a) Arriving late or leaving early	1	2	3	4
b) Absenteeism	1	2	3	4

Teachers in Your School

22

In your school, are any of the following used to evaluate the practice of fourth-grade teachers?

*Fill in only **one** circle for each row.*

	Yes	No
a) Observations by the principal or senior staff	1	2
b) Observations by inspectors or other persons external to the school	1	2
c) Student achievement	1	2
d) Teacher peer review	1	2

School Readiness

23

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

*Fill in only **one** circle for each row.*

	Less than 25%	25–50%	51–75%	More than 75%
a) Recognize most of the letters of the alphabet	1	2	3	4
b) Read some words	1	2	3	4
c) Read sentences	1	2	3	4
d) Write letters of the alphabet	1	2	3	4
e) Write some words	1	2	3	4
f) Count up to 100 or higher	1	2	3	4
g) Recognize written numbers from 1-10	1	2	3	4
h) Recognize written numbers higher than 10	1	2	3	4
i) Write numbers from 1-10	1	2	3	4
j) Do simple addition	1	2	3	4
k) Do simple subtraction	1	2	3	4

Principal Experience and Education

24

By the end of this school year, how many years altogether will you have been a principal?

_____ years
*Please **round** to the nearest whole number.*

25

By the end of this school year, how many years will you have been a principal at this school?

_____ years
*Please **round** to the nearest whole number.*

26

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

*Fill in **one** circle only.*

- Did not complete Bachelor's degree (4-year college program) --- ①
- Bachelor's degree (4-year college program) --- ②
- Master's degree or professional degree (MD, DDS, lawyer, minister) --- ③
- Doctorate (Ph.D., or Ed.D.) --- ④

27

Do you hold the following degrees in educational leadership?

*Fill in only **one** circle for each row.*

	Yes	No
a) Master's degree or professional degree (MD, DDS, lawyer, minister)	①	②
b) Doctorate (Ph.D., or Ed.D.)	①	②

Thank You

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

BOSTON COLLEGE

TIMSS 2015

TRENDS IN INTERNATIONAL MATHEMATICS AND SCIENCE STUDY

School Questionnaire

Grade 4

International Association for the Evaluation of Educational Achievement

timss.bc.edu

TIMSS 2015

Place Label Here

School ID: ____ ____ ____ ____

Class ID: ____ ____ ____ ____ ____ ____

Teacher ID: ____ ____ ____ ____ ____ ____

Link #: ____ ____ Subject: ____ ____

Checksum: ____ ____ ____ ____ ____

TRENDS IN INTERNATIONAL MATHEMATICS AND SCIENCE STUDY

Teacher Questionnaire

Grade 4

National Center for Education Statistics
U.S. Department of Education
1990 K St. NW
Washington, DC 20006-5650

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

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Teacher *Questionnaire*

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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 fourth-grade 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 on the front of this booklet and that 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.

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Thank you.

TIMSS 2015

About You

1 **What year did you start teaching?**

_____
Please write in a year.

2 **At the end of this school year, how many years will you have taught altogether?**

_____ years
*Please **round** to the nearest whole number.*

3 **Are you female or male?**

*Fill in **one** circle only.*

Female --- ①
Male --- ②

4 **How old are you?**

*Fill in **one** circle only.*

Under 25 --- ①
25–29 --- ②
30–39 --- ③
40–49 --- ④
50–59 --- ⑤
60 or more --- ⑥

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

*Fill in **one** circle only.*

Did not complete high school --- ①
High school graduate --- ②

(If you have not completed more than high school, go to question 7)

Associate's degree (2-year college program) --- ③
Bachelor's degree (4-year college program) --- ④
Master's degree or professional degree (MD, DDS, lawyer, minister) --- ⑤
Doctorate (Ph.D., or Ed.D.) --- ⑥

6

A. During your college or university education, what was your major or main area(s) of study?

*Fill in only **one** circle for each row.*

	Yes	No
a) Education—Primary/Elementary	①	②
b) Education—Secondary	①	②
c) Mathematics	①	②
d) Science	①	②
e) English	①	②
f) Other	①	②

B. If your major or main area of study was education, did you have a specialization in any of the following?

*Fill in only **one** circle for each row.*

	Yes	No
a) Mathematics	①	②
b) Science	①	②
c) Language/reading	①	②
d) Other subject	①	②

School Emphasis on Academic Success

7

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

*Fill in only **one** circle for each row.*

	Very high	High	Medium	Low	Very low
a) Teachers' understanding of the school's curricular goals	①	②	③	④	⑤
b) Teachers' degree of success in implementing the school's curriculum	①	②	③	④	⑤
c) Teachers' expectations for student achievement	①	②	③	④	⑤
d) Teachers working together to improve student achievement	①	②	③	④	⑤
e) Teachers' ability to inspire students	①	②	③	④	⑤
f) Parental involvement in school activities	①	②	③	④	⑤
g) Parental commitment to ensure that students are ready to learn	①	②	③	④	⑤
h) Parental expectations for student achievement	①	②	③	④	⑤
i) Parental support for student achievement	①	②	③	④	⑤
j) Parental pressure for the school to maintain high academic standards	①	②	③	④	⑤

*Fill in only **one** circle for each row.*

	Very high	High	Medium	Low	Very low
k) Students' desire to do well in school	①	②	③	④	⑤
l) Students' ability to reach school's academic goals	①	②	③	④	⑤
m) Students' respect for classmates who excel in school	①	②	③	④	⑤
n) Clarity of the school's educational objectives	①	②	③	④	⑤
o) Collaboration between school leadership and teachers to plan instruction	①	②	③	④	⑤
p) Amount of instructional support provided to teachers by school leadership	①	②	③	④	⑤
q) School leadership's support for teachers' professional development	①	②	③	④	⑤

School Environment

8

Thinking about your current school, indicate the extent to which you agree or disagree with each of the following statements.

*Fill in only **one** circle for each row.*

	Agree a lot	Agree a little	Disagree a little	Disagree a lot
a) This school is located in a safe neighborhood	1	2	3	4
b) I feel safe at this school	1	2	3	4
c) This school's security policies and practices are sufficient	1	2	3	4
d) The students behave in an orderly manner	1	2	3	4
e) The students are respectful of the teachers	1	2	3	4
f) The students respect school property	1	2	3	4
g) This school has clear rules about student conduct	1	2	3	4
h) This school's rules are enforced in a fair and consistent manner	1	2	3	4

9

In your current school, how severe is each problem?

*Fill in only **one** circle for each row.*

	Not a problem	Minor problem	Moderate problem	Serious problem
a) The school building needs significant repair	1	2	3	4
b) Teachers do not have adequate workspace (e.g., for preparation, collaboration, or meeting with students)	1	2	3	4
c) Teachers do not have adequate instructional materials and supplies	1	2	3	4
d) The school classrooms are not cleaned often enough	1	2	3	4
e) The school classrooms need maintenance work	1	2	3	4
f) Teachers do not have adequate technological resources	1	2	3	4
g) Teachers do not have adequate support for using technology	1	2	3	4

About Being a Teacher

10

How often do you have the following types of interactions with other teachers?

*Fill in only **one** circle for each row.*

	Very often	Often	Sometimes	Almost never or never
a) Discuss how to teach a particular topic	①	②	③	④
b) Collaborate in planning and preparing instructional materials	①	②	③	④
c) Share what I have learned about my teaching experiences	①	②	③	④
d) Visit another classroom to learn more about teaching	①	②	③	④
e) Work together to try out new ideas	①	②	③	④
f) Work as a group on implementing the curriculum	①	②	③	④
g) Work with teachers from other grades to ensure continuity in learning	①	②	③	④

11

How often do you feel the following way about being a teacher?

*Fill in only **one** circle for each row.*

	Very often	Often	Sometimes	Almost never or never
a) I am content with my profession as a teacher	①	②	③	④
b) I am satisfied with being a teacher at this school	①	②	③	④
c) I find my work full of meaning and purpose	①	②	③	④
d) I am enthusiastic about my job	①	②	③	④
e) My work inspires me	①	②	③	④
f) I am proud of the work I do	①	②	③	④
g) I am going to continue teaching for as long as I can	①	②	③	④

About Teaching the TIMSS Class

12

Indicate the extent to which you agree or disagree with each of the following statements.

*Fill in only **one** circle for each row.*

	Agree a lot	Agree a little	Disagree a little	Disagree a lot
a) There are too many students in the classes	1	2	3	4
b) I have too much material to cover in class	1	2	3	4
c) I have too many teaching hours	1	2	3	4
d) I need more time to prepare for class	1	2	3	4
e) I need more time to assist individual students	1	2	3	4
f) I feel too much pressure from parents	1	2	3	4
g) I have difficulty keeping up with all of the changes to the curriculum	1	2	3	4
h) I have too many administrative tasks	1	2	3	4

13

A. How many students are in this class?

_____ students
Write in the number.

B. How many of the students in question 13A are in fourth grade?

_____ fourth-grade students
Write in the number.

14

How many fourth-grade students experience difficulties understanding <u>spoken</u> English?

_____ students in this class
Write in the number.

15

How often do you do the following in teaching this class?

*Fill in only **one** circle for each row.*

	Every or almost every lesson	About half the lessons	Some lessons	Never
a) Relate the lesson to students' daily lives	1	2	3	4
b) Ask students to explain their answers	1	2	3	4
c) Bring interesting materials to class	1	2	3	4
d) Ask students to complete challenging exercises that require them to go beyond the instruction	1	2	3	4
e) Encourage classroom discussions among students	1	2	3	4
f) Link new content to students' prior knowledge	1	2	3	4
g) Ask students to decide their own problem solving procedures	1	2	3	4
h) Encourage students to express their ideas in class	1	2	3	4

16

In your view, to what extent do the following limit how you teach this class?

*Fill in only **one** circle for each row.*

	Not at all	Some	A lot
a) Students lacking prerequisite knowledge or skills	1	2	3
b) Students suffering from lack of basic nutrition	1	2	3
c) Students suffering from not enough sleep	1	2	3
d) Disruptive students	1	2	3
e) Uninterested students	1	2	3
f) Students with physical disabilities	1	2	3
g) Students with mental, emotional, or psychological disabilities	1	2	3

Teaching Mathematics to the TIMSS Class

Questions 17 - 19 ask about mathematics instruction for the fourth-grade students in the TIMSS class.

17

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

_____ minutes per week

Write in the number of minutes per week.
Please convert the number of hours into minutes.

18

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

*Fill in only **one** circle for each row.*

	Very high	High	Medium	Low
a) Inspiring students to learn mathematics	1	2	3	4
b) Showing students a variety of problem solving strategies	1	2	3	4
c) Providing challenging tasks for the highest achieving students	1	2	3	4
d) Adapting my teaching to engage students' interest	1	2	3	4
e) Helping students appreciate the value of learning mathematics	1	2	3	4
f) Assessing student comprehension of mathematics	1	2	3	4
g) Improving the understanding of struggling students	1	2	3	4
h) Making mathematics relevant to students	1	2	3	4
i) Developing students' higher-order thinking skills	1	2	3	4

19

In teaching mathematics to this class, how often do you ask students to do the following?

*Fill in only **one** circle for each row.*

	Every or almost every lesson	About half the lessons	Some lessons	Never
a) Listen to me explain new mathematics content	1	2	3	4
b) Listen to me explain how to solve problems	1	2	3	4
c) Memorize rules, procedures, and facts	1	2	3	4
d) Work problems (individually or with peers) with my guidance	1	2	3	4
e) Work problems together in the whole class with direct guidance from me	1	2	3	4
f) Work problems (individually or with peers) while I am occupied by other tasks	1	2	3	4
g) Take a written test or quiz	1	2	3	4
h) Work in mixed ability groups	1	2	3	4
i) Work in same ability groups	1	2	3	4

Using Calculators and Computers for Teaching Mathematics to the TIMSS Class

Questions 20 - 21 ask about resources for teaching mathematics to the fourth-grade students in the TIMSS class.

20

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

*Fill in **one** circle only.*

- Yes, with unrestricted use --- ①
- Yes, with restricted use --- ②
- No, calculators are not permitted --- ③

21

A. Do the students in this class have computers (including tablets) available to use during their mathematics lessons?

*Fill in **one** circle only.*

- Yes --- ①
- No --- ② → **(If No, go to question 22)**

If Yes,

B. What access do the students have to computers?

*Fill in only **one** circle for each row.*

	Yes	No
a) Each student has a computer	①	②
b) The class has computers that students can share	①	②
c) The school has computers that the class can use sometimes	①	②

C. How often do you have the students do the following activities on computers during mathematics lessons?

*Fill in only **one** circle for each row.*

	Every or almost every day	Once or twice a week	Once or twice a month	Never or almost never
a) Explore mathematics principles and concepts	①	②	③	④
b) Practice skills and procedures	①	②	③	④
c) Look up ideas and information	①	②	③	④

Mathematics Topics Taught to the TIMSS Class

Question 22 asks about the topics taught and the content covered in teaching mathematics to the fourth-grade students in the TIMSS class.

22

The following list includes the main topics addressed by the TIMSS mathematics test. Choose the response that best describes when the students in this class have been taught each topic. If a topic was in the curriculum before the fourth grade, please choose "Mostly taught before this year." If a topic was taught half this year but not yet completed, please choose "Mostly taught this year." If a topic is not in the curriculum, please choose "Not yet taught or just introduced."

*Fill in only **one** circle for each row.*

	Mostly taught before this year	Mostly taught this year	Not yet taught or just introduced
A. Number			
a) Concepts of whole numbers, including place value and ordering	①	②	③
b) Adding, subtracting, multiplying, and/or dividing with whole numbers	①	②	③
c) Concepts of multiples and factors; odd and even numbers	①	②	③
d) Concepts of fractions (fractions as parts of a whole or of a collection, or as a location on a number line)	①	②	③
e) Adding and subtracting with fractions, comparing and ordering fractions	①	②	③
f) Concepts of decimals, including place value and ordering, adding and subtracting with decimals	①	②	③
g) Number sentences (finding the missing number, modeling simple situations with number sentences)	①	②	③
h) Number patterns (extending number patterns and finding missing terms)	①	②	③
B. Geometric Shapes and Measures			
a) Lines: measuring, estimating length of; parallel and perpendicular lines	①	②	③
b) Comparing and drawing angles	①	②	③
c) Using informal coordinate systems to locate points in a plane (e.g., in square B4)	①	②	③
d) Elementary properties of common geometric shapes	①	②	③
e) Reflections and rotations	①	②	③
f) Relationships between two-dimensional and three-dimensional shapes	①	②	③
g) Finding and estimating areas, perimeters, and volumes	①	②	③
C. Data Display			
a) Reading and representing data from tables, pictographs, bar graphs, or pie charts	①	②	③
b) Drawing conclusions from data displays	①	②	③

Mathematics Homework for the TIMSS Class

Question 23 asks about mathematics homework for the fourth-grade students in the TIMSS class.

23

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

*Fill in **one** circle only.*

- I do not assign mathematics homework --- ① → **(Go to question 24)**
- Less than once a week --- ②
- 1 or 2 times a week --- ③
- 3 or 4 times a week --- ④
- Every day --- ⑤

B. When you assign mathematics homework to the students in this class, about how many minutes do you usually assign? (Consider the time it would take an average student in your class.)

*Fill in **one** circle only.*

- 15 minutes or less --- ①
- 16–30 minutes --- ②
- 31–60 minutes --- ③
- More than 60 minutes --- ④

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

*Fill in only **one** circle for each row.*

	Always or almost always	Sometimes	Never or almost never
a) Correct assignments and give feedback to students	①	②	③
b) Discuss the homework in class	①	②	③
c) Monitor whether or not the homework was completed	①	②	③

Mathematics Assessment of the TIMSS Class

Question 24 asks about mathematics assessment for the fourth-grade students in the TIMSS class.

24

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

*Fill in only **one** circle for each row.*

	Major emphasis	Some emphasis	Little or no emphasis
a) Assessment of students' ongoing work	①	②	③
b) Classroom tests (for example, teacher-made or textbook tests)	①	②	③
c) State or district achievement tests	①	②	③

Preparation to Teach Mathematics

25

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

*Fill in only **one** circle for each row.*

	Yes	No
a) Mathematics content	1	2
b) Mathematics pedagogy/instruction	1	2
c) Mathematics curriculum	1	2
d) Integrating information technology into mathematics	1	2
e) Improving students' critical thinking or problem solving skills	1	2
f) Mathematics assessment	1	2
g) Addressing individual students' needs	1	2

26

In the past two years, how many hours in total have you spent in formal in-service/professional development (e.g., workshops, seminars) for mathematics?

*Fill in **one** circle only.*

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

27

How well prepared do you feel you are to teach the following mathematics topics?
If a topic is not in the <u>fourth-grade</u> curriculum or you are not responsible for teaching this topic, please choose "Not applicable."

*Fill in only **one** circle for each row.*

	Not applicable	Very well prepared	Somewhat prepared	Not well prepared
A. Number				
a) Concepts of whole numbers, including place value and ordering	①	②	③	④
b) Adding, subtracting, multiplying, and/or dividing with whole numbers	①	②	③	④
c) Concepts of multiples and factors; odd and even numbers	①	②	③	④
d) Concepts of fractions (fractions as parts of a whole or of a collection, or as a location on a number line)	①	②	③	④
e) Adding and subtracting with fractions, comparing and ordering fractions	①	②	③	④
f) Concepts of decimals, including place value and ordering, adding and subtracting with decimals	①	②	③	④
g) Number sentences (finding the missing number, modeling simple situations with number sentences)	①	②	③	④
h) Number patterns (extending number patterns and finding missing terms)	①	②	③	④
B. Geometric Shapes and Measures				
a) Lines: measuring, estimating length of; parallel and perpendicular lines	①	②	③	④
b) Comparing and drawing angles	①	②	③	④
c) Using informal coordinate systems to locate points in a plane (e.g., in square B4)	①	②	③	④
d) Elementary properties of common geometric shapes	①	②	③	④
e) Reflections and rotations	①	②	③	④
f) Relationships between two-dimensional and three-dimensional shapes	①	②	③	④
g) Finding and estimating areas, perimeters, and volumes	①	②	③	④
C. Data Display				
a) Reading and representing data from tables, pictographs, bar graphs, or pie charts	①	②	③	④
b) Drawing conclusions from data displays	①	②	③	④

Teaching Science to the TIMSS Class

Questions 28 - 30 ask about science instruction for the <u>fourth-grade</u> students in the TIMSS class.

28

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

*Fill in **one** circle only.*

Yes --- ①

No --- ②

B. Please estimate the time that you spend on science topics with students in this class.

_____ minutes per week

Write in the number of minutes per week.
Please convert the number of hours into minutes.

29

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

*Fill in only **one** circle for each row.*

	Very high	High	Medium	Low
a) Inspiring students to learn science	①	②	③	④
b) Explaining science concepts or principles by doing science experiments	①	②	③	④
c) Providing challenging tasks for the highest achieving students	①	②	③	④
d) Adapting my teaching to engage students' interest	①	②	③	④
e) Helping students appreciate the value of learning science	①	②	③	④
f) Assessing student comprehension of science	①	②	③	④
g) Improving the understanding of struggling students	①	②	③	④
h) Making science relevant to students	①	②	③	④
i) Developing students' higher-order thinking skills	①	②	③	④
j) Teaching science using inquiry methods	①	②	③	④

Using Computers for Teaching Science to the TIMSS Class

30

In teaching science to the students in this class, how often do you ask them to do the following?

*Fill in only **one** circle for each row.*

	Every or almost every lesson	About half the lessons	Some lessons	Never
a) Listen to me explain new science content	1	2	3	4
b) Observe natural phenomena such as the weather or a plant growing and describe what they see	1	2	3	4
c) Watch me demonstrate an experiment or investigation	1	2	3	4
d) Design or plan experiments or investigations	1	2	3	4
e) Conduct experiments or investigations	1	2	3	4
f) Present data from experiments or investigations	1	2	3	4
g) Interpret data from experiments or investigations	1	2	3	4
h) Use evidence from experiments or investigations to support conclusions	1	2	3	4
i) Read their textbooks or other resource materials	1	2	3	4
j) Have students memorize facts and principles	1	2	3	4
k) Do field work outside the class	1	2	3	4
l) Take a written test or quiz	1	2	3	4
m) Work in mixed ability groups	1	2	3	4
n) Work in same ability groups	1	2	3	4

Question 31 asks about resources for teaching science to the <u>fourth-grade</u> students in the TIMSS class.

31

A. Do the students in this class have computers (including tablets) available to use during their science lessons?

*Fill in **one** circle only.*

Yes --- 1

No --- 2 → **(If No, go to question 32)**

If Yes,

B. What access do the students have to computers?

*Fill in only **one** circle for each row.*

	Yes	No
a) Each student has a computer	1	2
b) The class has computers that students can share	1	2
c) The school has computers that the class can use sometimes	1	2

C. How often do you have the students do the following activities on computers during science lessons?

*Fill in only **one** circle for each row.*

	Every or almost every day	Once or twice a week	Once or twice a month	Never or almost never
a) Practice skills and procedures	1	2	3	4
b) Look up ideas and information	1	2	3	4
c) Do scientific procedures or experiments	1	2	3	4
d) Study natural phenomena through simulations	1	2	3	4

Science Topics Taught to the TIMSS Class

Question 32 asks about the topics taught and the content covered in teaching science to the fourth-grade students in the TIMSS class.

32

The following list includes the main topics addressed by the TIMSS science test. Choose the response that best describes when the students in this class have been taught each topic. If a topic was in the curriculum before the fourth grade, please choose "Mostly taught before this year." If a topic was taught half this year but not yet completed, please choose "Mostly taught this year." If a topic is not in the curriculum, please choose "Not yet taught or just introduced."

*Fill in only **one** circle for each row.*

	Mostly taught before this year	Mostly taught this year	Not yet taught or just introduced
A. Life Science			
a) Characteristics of living things and the major groups of living things (e.g., mammals, birds, insects, flowering plants)	①	②	③
b) Major body structures and their functions in humans, other animals, and plants	①	②	③
c) Life cycles of common plants and animals (e.g., humans, butterflies, frogs, flowering plants)	①	②	③
d) Understanding that some characteristics are inherited and some are the result of the environment	①	②	③
e) How physical features and behaviors help living things survive in their environments	①	②	③
f) Relationships in communities and ecosystems (e.g., simple food chains, predator-prey relationships, human impacts on the environment)	①	②	③
g) Human health (transmission and prevention of diseases, symptoms of health and illness, importance of a healthy diet and exercise)	①	②	③
B. Physical Science			
a) States of matter (solid, liquid, gas) and properties of the states of matter (volume, shape); how the state of matter changes by heating or cooling	①	②	③
b) Classifying materials based on physical properties (e.g., weight/mass, volume, conducting heat, conducting electricity, magnetic attraction)	①	②	③
c) Mixtures and how to separate a mixture into its components (e.g., sifting, filtering, evaporation, using a magnet)	①	②	③
d) Chemical changes in everyday life (e.g., decaying, burning, rusting, cooking)	①	②	③
e) Common sources of energy (e.g., the Sun, electricity, wind) and uses of energy (heating and cooling homes, providing light)	①	②	③
f) Light and sound in everyday life (e.g., understanding shadows and reflection, understanding that vibrating objects make sound)	①	②	③
g) Electricity and simple circuits (e.g., identifying materials that are conductors, recognizing that electricity can be changed to light or sound, knowing that a circuit must be complete to work correctly)	①	②	③
h) Properties of magnets (e.g., knowing that like poles repel and opposite poles attract, recognizing that magnets can attract some objects)	①	②	③
i) Forces that cause objects to move (e.g., gravity, pushing/pulling)	①	②	③

32 **(continued)**

Choose the response that best describes when the students in this class have been taught each topic. If a topic was in the curriculum before the fourth grade, please choose "Mostly taught before this year." If a topic was taught half this year but not yet completed, please choose "Mostly taught this year." If a topic is not in the curriculum, please choose "Not yet taught or just introduced."

*Fill in only **one** circle for each row.*

C. Earth Science

	Mostly taught before this year	Mostly taught this year just	Not yet taught or introduced
a) Common features of the Earth's landscape (e.g., mountains, plains, deserts, rivers, oceans) and their relationship to human use (farming, irrigation, land development)	1	2	3
b) Where water is found on the Earth and how it moves in and out of the air (e.g., evaporation, rainfall, cloud formation, dew formation)	1	2	3
c) Understanding that weather can change from day to day, from season to season, and by geographic location	1	2	3
d) Understanding what fossils are and what they can tell us about past conditions on Earth	1	2	3
e) Objects in the solar system (the Sun, the Earth, the Moon, and other planets) and their movements (the Earth and other planets revolve around the Sun, the Moon revolves around the Earth)	1	2	3
f) Understanding how day and night result from the Earth's rotation on its axis and how the Earth's rotation results in changing shadows throughout the day	1	2	3
g) Understanding how seasons are related to the Earth's annual movement around the Sun	1	2	3

Science Homework for the TIMSS Class

Question 33 asks about science homework for the fourth-grade students in the TIMSS class.

33

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

*Fill in **one** circle only.*

- I do not assign science homework --- ① → **(Go to question 34)**
- Less than once a week --- ②
- 1 or 2 times a week --- ③
- 3 or 4 times a week --- ④
- Every day --- ⑤

B. When you assign science homework to the students in this class, about how many minutes do you usually assign? (Consider the time it would take an average student in your class.)

*Fill in **one** circle only.*

- 15 minutes or less --- ①
- 16–30 minutes --- ②
- 31–60 minutes --- ③
- More than 60 minutes --- ④

C. How often do you do the following with the science homework assignments for this class?

*Fill in only **one** circle for each row.*

	Always or almost always	Sometimes	Never or almost never
a) Correct assignments and give feedback to students	①	②	③
b) Discuss the homework in class	①	②	③
c) Monitor whether or not the homework was completed	①	②	③

Science Assessment of the TIMSS Class

Question 34 asks about science assessment for the fourth-grade students in the TIMSS class.

34

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

*Fill in only **one** circle for each row.*

	Major emphasis	Some emphasis	Little or no emphasis
a) Assessment of students' ongoing work	①	②	③
b) Classroom tests (for example, teacher-made or textbook tests)	①	②	③
c) State or district achievement tests	①	②	③

Preparation to Teach Science

35

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

*Fill in only **one** circle for each row.*

	Yes	No
a) Science content	1	2
b) Science pedagogy/instruction	1	2
c) Science curriculum	1	2
d) Integrating information technology into science	1	2
e) Improving students' critical thinking or inquiry skills	1	2
f) Science assessment	1	2
g) Addressing individual students' needs	1	2
h) Integrating science with other subjects (e.g., mathematics, technology)	1	2

36

In the past two years, how many hours in total have you spent in formal in-service/professional development (e.g., workshops, seminars) for science?

*Fill in **one** circle only.*

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

37

How well prepared do you feel you are to teach the following science topics?
If a topic is not in the fourth-grade curriculum or you are not responsible for teaching this topic, please choose "Not applicable."

*Fill in only **one** circle for each row.*

	Not applicable	Very well prepared	Somewhat prepared	Not well prepared
A. Life Science				
a) Characteristics of living things and the major groups of living things (e.g., mammals, birds, insects, flowering plants)		2	3	4
b) Major body structures and their functions in humans, other animals, and plants		2	3	4
c) Life cycles of common plants and animals (e.g., humans, butterflies, frogs, flowering plants)		2	3	4
d) Understanding that some characteristics are inherited and some are the result of the environment		2	3	4
e) How physical features and behaviors help living things survive in their environments		2	3	4
f) Relationships in communities and ecosystems (e.g., simple food chains, predator-prey relationships, human impacts on the environment)		2	3	4
g) Human health (transmission and prevention of diseases, symptoms of health and illness, importance of a healthy diet and exercise)		2	3	4
B. Physical Science				
a) States of matter (solid, liquid, gas) and properties of the states of matter (volume, shape); how the state of matter changes by heating or cooling		2	3	4
b) Classifying materials based on physical properties (e.g., weight/mass, volume, conducting heat, conducting electricity, magnetic attraction)		2	3	4
c) Mixtures and how to separate a mixture into its components (e.g., sifting, filtering, evaporation, using a magnet)		2	3	4
d) Chemical changes in everyday life (e.g., decaying, burning, rusting, cooking)		2	3	4
e) Common sources of energy (e.g., the Sun, electricity, wind) and uses of energy (heating and cooling homes, providing light)		2	3	4
f) Light and sound in everyday life (e.g., understanding shadows and reflection, understanding that vibrating objects make sound)		2	3	4
g) Electricity and simple circuits (e.g., identifying materials that are conductors, recognizing that electricity can be changed to light or sound, knowing that a circuit must be complete to work correctly)		2	3	4
h) Properties of magnets (e.g., knowing that like poles repel and opposite poles attract, recognizing that magnets can attract some objects)		2	3	4
i) Forces that cause objects to move (e.g., gravity, pushing/pulling)		2	3	4

37 **(continued)**

How well prepared do you feel you are to teach the following science topics?
If a topic is not in the <u>fourth-grade</u> curriculum or you are not responsible for teaching this topic, please choose "Not applicable."

*Fill in only **one** circle for each row.*

	Not applicable	Very well prepared	Somewhat prepared	Not well prepared
C. Earth Science				
a) Common features of the Earth's landscape (e.g., mountains, plains, deserts, rivers, oceans) and their relationship to human use (farming, irrigation, land development)		①	②	③	④
b) Where water is found on the Earth and how it moves in and out of the air (e.g., evaporation, rainfall, cloud formation, dew formation)		①	②	③	④
c) Understanding that weather can change from day to day, from season to season, and by geographic location		①	②	③	④
d) Understanding what fossils are and what they can tell us about past conditions on Earth		①	②	③	④
e) Objects in the solar system (the Sun, the Earth, the Moon, and other planets) and their movements (the Earth and other planets revolve around the Sun, the Moon revolves around the Earth)		①	②	③	④
f) Understanding how day and night result from the Earth's rotation on its axis and how the Earth's rotation results in changing shadows throughout the day		①	②	③	④
g) Understanding how seasons are related to the Earth's annual movement around the Sun		①	②	③	④

Thank You

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

BOSTON COLLEGE

TIMSS 2015

TRENDS IN INTERNATIONAL MATHEMATICS AND SCIENCE STUDY

Teacher Questionnaire

Grade 4

International Association for the Evaluation of Educational Achievement

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TIMSS 2015

TRENDS IN INTERNATIONAL MATHEMATICS AND SCIENCE STUDY

Student Questionnaire

Grade 4

National Center for Education Statistics
U.S. Department of Education
1990 K St. NW
Washington, DC 20006-5650

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

Directions

In this booklet, 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 booklet.

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

Example 1

Do you go to school?

*Fill in **one** oval only.*

Yes -- ①

No -- ②

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

Example 2

How often do you do these things?

*Fill in only **one** oval for each row.*

	Every day or almost every day	Once or twice a week	Once or twice a month	Never or almost never
a) I talk with my friends	①	②	③	④
b) I play sports	①	②	③	④
c) I ride a skateboard	①	②	③	④

Example 3 is another kind of question you will find in this booklet.

Example 3

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

*Fill in only **one** oval for each row.*

	Agree a lot	Agree a little	Disagree a little	Disagree a lot
a) Watching movies is fun	①	②	③	④
b) I like eating ice cream	①	②	③	④
c) I do not like waking up early	①	②	③	④
d) I enjoy doing chores	①	②	③	④

- Read each question carefully, and pick the answer you think is best.
- Fill in the oval next to or under your answer.
- If you decide to change your answer, completely erase your first choice. Then, fill in the oval next to or under your new answer.
- Ask for help if you do not understand something or are not sure how to answer.

About You

1

A. Are you a girl or a boy?

*Fill in **one** oval only.*

Girl -- ①

Boy -- ②

B. Are you Hispanic or Latino?

*Fill in **one** oval only.*

Yes, I am Hispanic or Latino -- ①

No, I am not Hispanic or Latino -- ②

C. Which of the following best describes you?

*Fill in ovals for **all** that apply.*

White -- ①

Black or African American -- ①

Asian -- ①

American Indian or Alaska Native -- ①

Native Hawaiian or other Pacific Islander -- ①

2

When were you born?

Fill in the ovals next to the month and year you were born.

a) Month	b) Year
January --- Ⓐ	2002 --- ①
February --- Ⓑ	2003 --- ②
March --- Ⓒ	2004 --- ③
April --- Ⓓ	2005 --- ④
May --- Ⓔ	2006 --- ⑤
June --- Ⓕ	2007 --- ⑥
July --- Ⓖ	2008 --- ⑦
August --- Ⓗ	Other --- ⑧
September --- Ⓘ	
October --- Ⓙ	
November --- Ⓚ	
December --- Ⓛ	

3

A. How often do you speak English at home?

*Fill in **one** oval only.*

I always speak English at home -- ① *If **Always**, please go to question 4*

I almost always speak English at home -- ②

I sometimes speak English and sometimes speak another language at home -- ③

I never speak English at home -- ④

*If **Almost always, Sometimes, Never,** please go to question 3B*

B. What language do you speak at home (other than English)?

*Fill in **one** oval only.*

Spanish -- ①

Other -- ② Please specify _____

4

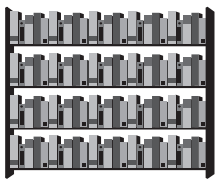
About how many books are there in your home? (Do not count magazines, newspapers, or your school books.)

*Fill in **one** oval only.*

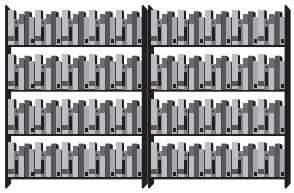
None or very few (0–10 books) -- ① This shows 10 books

Enough to fill one shelf (11–25 books) -- ② This shows 25 books

Enough to fill one bookcase (26–100 books) -- ③ This shows 100 books



Enough to fill two bookcases (101–200 books) -- ④ This shows 200 books



Enough to fill three or more bookcases (more than 200) -- ⑤ This shows more than 200 books

5

Do you have any of these things at your home?

*Fill in only **one** oval for each row.*

		Yes	No
a)	A computer or tablet of your own	①	②
b)	A computer or tablet that is shared with other people at home	①	②
c)	Study desk/table for your use	①	②
d)	Your own room	①	②
e)	Internet connection	①	②
f)	Your own cell phone	①	②
g)	A gaming system (e.g., PlayStation, Wii, Xbox)	①	②
h)	VCR, DVD, or Blu-ray player	①	②

6

A. Was your mother (or stepmother or female legal guardian) born in the United States? ("United States" includes the 50 states, its territories, the District of Columbia, and U.S. military bases abroad.)

*Fill in **one** oval only.*

Yes -- ①

No -- ②

I don't know -- ③

B. Was your father (or stepfather or male legal guardian) born in the United States?

*Fill in **one** oval only.*

Yes -- ①

No -- ②

I don't know -- ③

7

Were you born in the United States?

*Fill in **one** oval only.*

Yes -- ①

No -- ②

8

The following questions ask about activities you do <u>outside of school</u>.

*Fill in only **one** oval for each row.*

	Yes	No
a) Do you play on a sports team outside of school?	①	②
b) Do you often play a musical instrument outside of school?	①	②
c) Are you studying something in a class outside of school?	①	②
d) Do you belong to a club outside of school (like Boy/Girl Scouts, 4-H, or Boys and Girls Club)?	①	②

9

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

*Fill in **one** oval only.*

Yes -- ①

No -- ②

10

Have you ever repeated a grade in elementary school?

*Fill in **one** oval only.*

Yes -- ①

No -- ②

11

A. About how often are you absent from school?

*Fill in **one** oval only.*

Once a week or more -- ①

Once every two weeks -- ②

Once a month -- ③

Never or almost never -- ④

B. How many days were you absent from school in the last month?

*Fill in **one** oval only.*

None -- ①

1 or 2 days -- ②

3 or 4 days -- ③

5 to 10 days -- ④

More than 10 days -- ⑤

12

How often do you eat breakfast on school days?

*Fill in **one** oval only.*

Every day -- ①

Most days -- ②

Sometimes -- ③

Never or almost never -- ④

13

How often do you use a computer or tablet in each of these places for schoolwork (including classroom tasks, homework, studying outside of class)?

*Fill in only **one** oval for each row.*

	Every day or almost every day	Once or twice a week	Once or twice a month	Never or almost never
a) At home	①	②	③	④
b) At school	①	②	③	④
c) Some other place	①	②	③	④

Your School

14

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

*Fill in only **one** oval for each row.*

	Agree a lot	Agree a little	Disagree a little	Disagree a lot
a) I like being in school	①	②	③	④
b) I feel safe when I am at school	①	②	③	④
c) I feel like I belong at this school	①	②	③	④
d) I like to see my classmates at school	①	②	③	④
e) Teachers at my school are fair to me	①	②	③	④
f) I am proud to go to this school	①	②	③	④
g) I learn a lot in school	①	②	③	④

15

During this school year, how often have other students from your school done any of the following things to you (including through texting or the Internet)?

*Fill in only **one** oval for each row.*

	At least once a week	Once or twice a month	A few times a year	Never
a) Made fun of me or called me names	①	②	③	④
b) Left me out of their games or activities	①	②	③	④
c) Spread lies about me	①	②	③	④
d) Stole something from me	①	②	③	④
e) Hit or hurt me *(e.g., shoving, hitting, kicking)*	①	②	③	④
f) Made me do things I didn't want to do	①	②	③	④
g) Shared embarrassing information about me	①	②	③	④
h) Threatened me	①	②	③	④

Mathematics in School

16

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

*Fill in only **one** oval for each row.*

	Agree a lot	Agree a little	Disagree a little	Disagree a lot
a) I enjoy learning mathematics	①	②	③	④
b) I wish I did not have to study mathematics	①	②	③	④
c) Mathematics is boring	①	②	③	④
d) I learn many interesting things in mathematics	①	②	③	④
e) I like mathematics	①	②	③	④
f) I like any schoolwork that involves numbers	①	②	③	④
g) I like to solve mathematics problems	①	②	③	④
h) I look forward to mathematics lessons	①	②	③	④
i) Mathematics is one of my favorite subjects	①	②	③	④

17

How much do you agree with these statements about your <u>mathematics lessons</u>?

*Fill in only **one** oval for each row.*

	Agree a lot	Agree a little	Disagree a little	Disagree a lot
a) I know what my teacher expects me to do	①	②	③	④
b) My teacher is easy to understand	①	②	③	④
c) I am interested in what my teacher says	①	②	③	④
d) My teacher gives me interesting things to do	①	②	③	④
e) My teacher has clear answers to my questions	①	②	③	④
f) My teacher is good at explaining mathematics	①	②	③	④
g) My teacher lets me show what I have learned	①	②	③	④
h) My teacher does a variety of things to help us learn	①	②	③	④
i) My teacher tells me how to do better when I make a mistake	①	②	③	④
j) My teacher listens to what I have to say	①	②	③	④

18

How much do you agree with these statements about mathematics?

*Fill in only **one** oval for each row.*

	Agree a lot	Agree a little	Disagree a little	Disagree a lot
a) I usually do well in mathematics	①	②	③	④
b) Mathematics is harder for me than for many of my classmates	①	②	③	④
c) I am just not good at mathematics	①	②	③	④
d) I learn things quickly in mathematics	①	②	③	④
e) Mathematics makes me nervous	①	②	③	④
f) I am good at working out difficult mathematics problems	①	②	③	④
g) My teacher tells me I am good at mathematics	①	②	③	④
h) Mathematics is harder for me than any other subject	①	②	③	④
i) Mathematics makes me confused	①	②	③	④

Science in School

19

How much do you agree with these statements about learning science?

*Fill in only **one** oval for each row.*

	Agree a lot	Agree a little	Disagree a little	Disagree a lot
a) I enjoy learning science	①	②	③	④
b) I wish I did not have to study science	①	②	③	④
c) Science is boring	①	②	③	④
d) I learn many interesting things in science	①	②	③	④
e) I like science	①	②	③	④
f) I look forward to learning science in school	①	②	③	④
g) Science teaches me how things in the world work	①	②	③	④
h) I like to do science experiments	①	②	③	④
i) Science is one of my favorite subjects	①	②	③	④

20

How much do you agree with these statements about your <u>science lessons</u>?

*Fill in only **one** oval for each row.*

	Agree a lot	Agree a little	Disagree a little	Disagree a lot
a) I know what my teacher expects me to do	①	②	③	④
b) My teacher is easy to understand	①	②	③	④
c) I am interested in what my teacher says	①	②	③	④
d) My teacher gives me interesting things to do	①	②	③	④
e) My teacher has clear answers to my questions	①	②	③	④
f) My teacher is good at explaining science	①	②	③	④
g) My teacher lets me show what I have learned	①	②	③	④
h) My teacher does a variety of things to help us learn	①	②	③	④
i) My teacher tells me how to do better when I make a mistake	①	②	③	④
j) My teacher listens to what I have to say	①	②	③	④

21

How much do you agree with these statements about science?

*Fill in only **one** oval for each row.*

	Agree a lot	Agree a little	Disagree a little	Disagree a lot
a) I usually do well in science	①	②	③	④
b) Science is harder for me than for many of my classmates	①	②	③	④
c) I am just not good at science	①	②	③	④
d) I learn things quickly in science	①	②	③	④
e) My teacher tells me I am good at science	①	②	③	④
f) Science is harder for me than any other subject	①	②	③	④
g) Science makes me confused	①	②	③	④

22

How hard was this test compared to most other tests you have taken this year in school?

*Fill in **one** oval only.*

Easier than other tests -- ①

About as hard as other tests -- ②

Harder than other tests -- ③

Much harder than other tests -- ④

23

How hard did you try on this test compared to how hard you tried on most other tests you have taken this year in school?

*Fill in **one** oval only.*

Not as hard as on other tests -- ①

About as hard as on other tests -- ②

Harder than on other tests -- ③

Much harder than on other tests -- ④

24

How important was it to you to do well on this test?

*Fill in **one** oval only.*

Not very important -- ①

Somewhat important -- ②

Important -- ③

Very important -- ④

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Thank You!
Thank you for filling out the questionnaire!

Exhibit D-4. TIMSS 2015 Grade 4 Curriculum Questionnaire

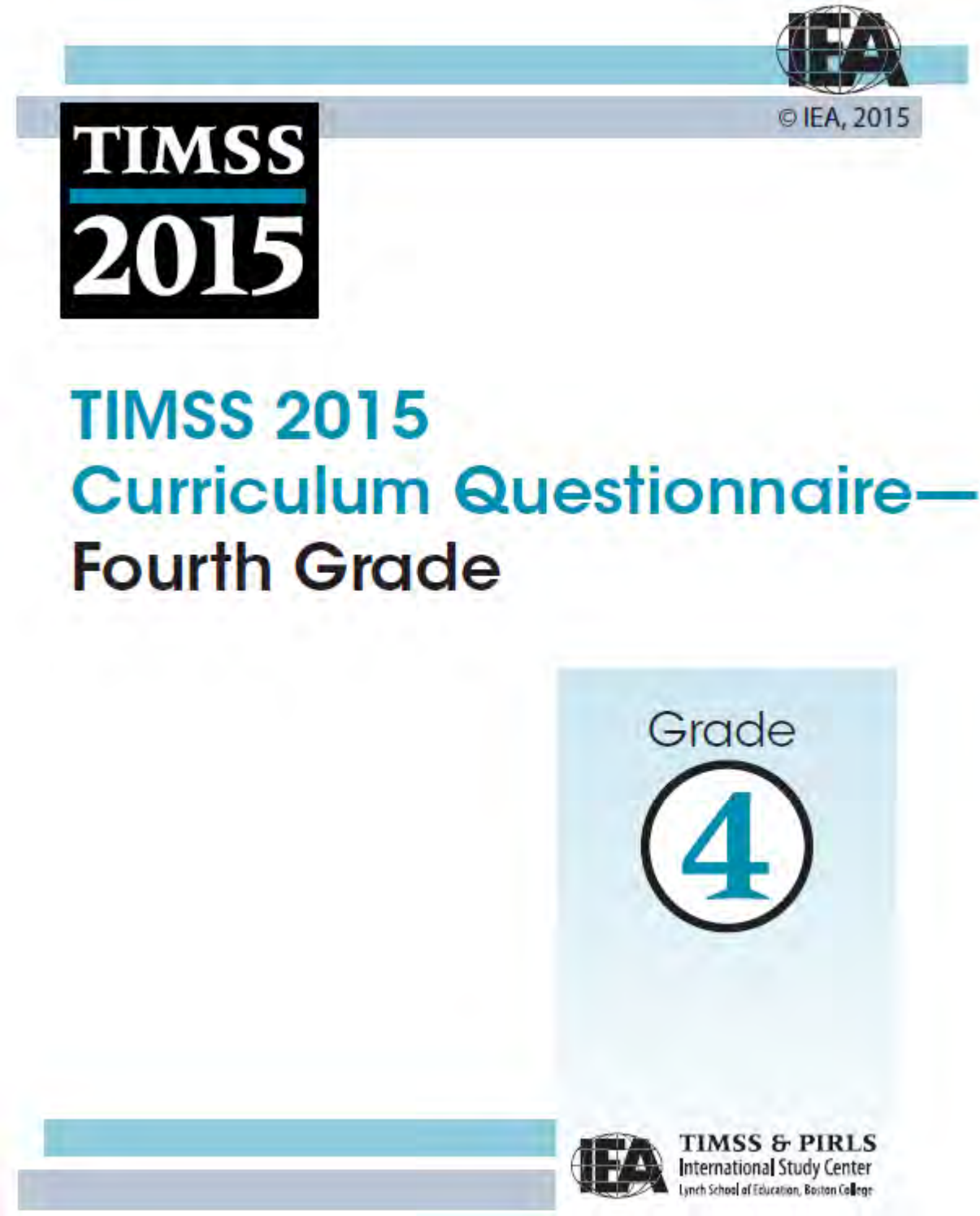


Exhibit D-4. TIMSS 2015 Grade 4 Curriculum Questionnaire—Continued

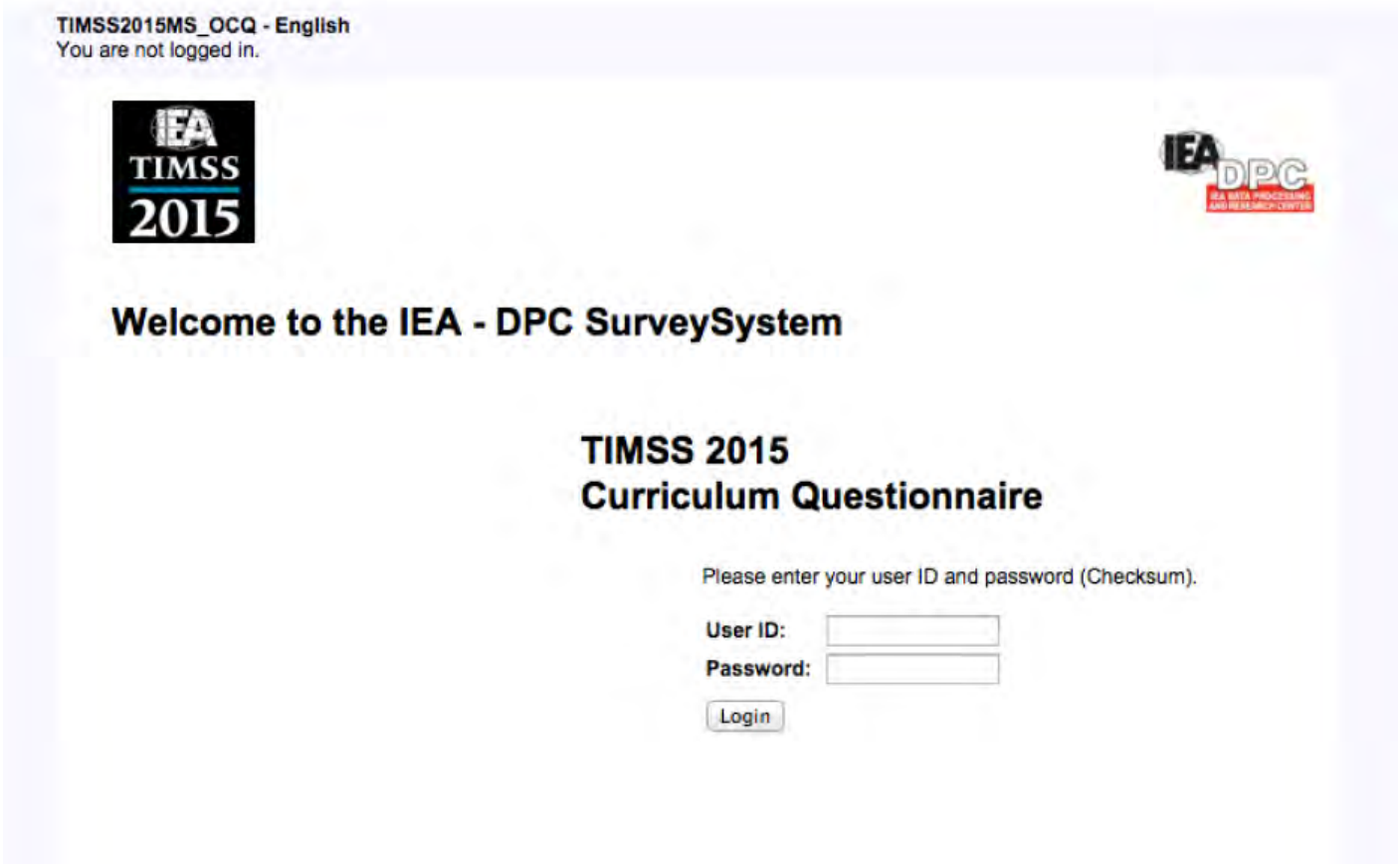
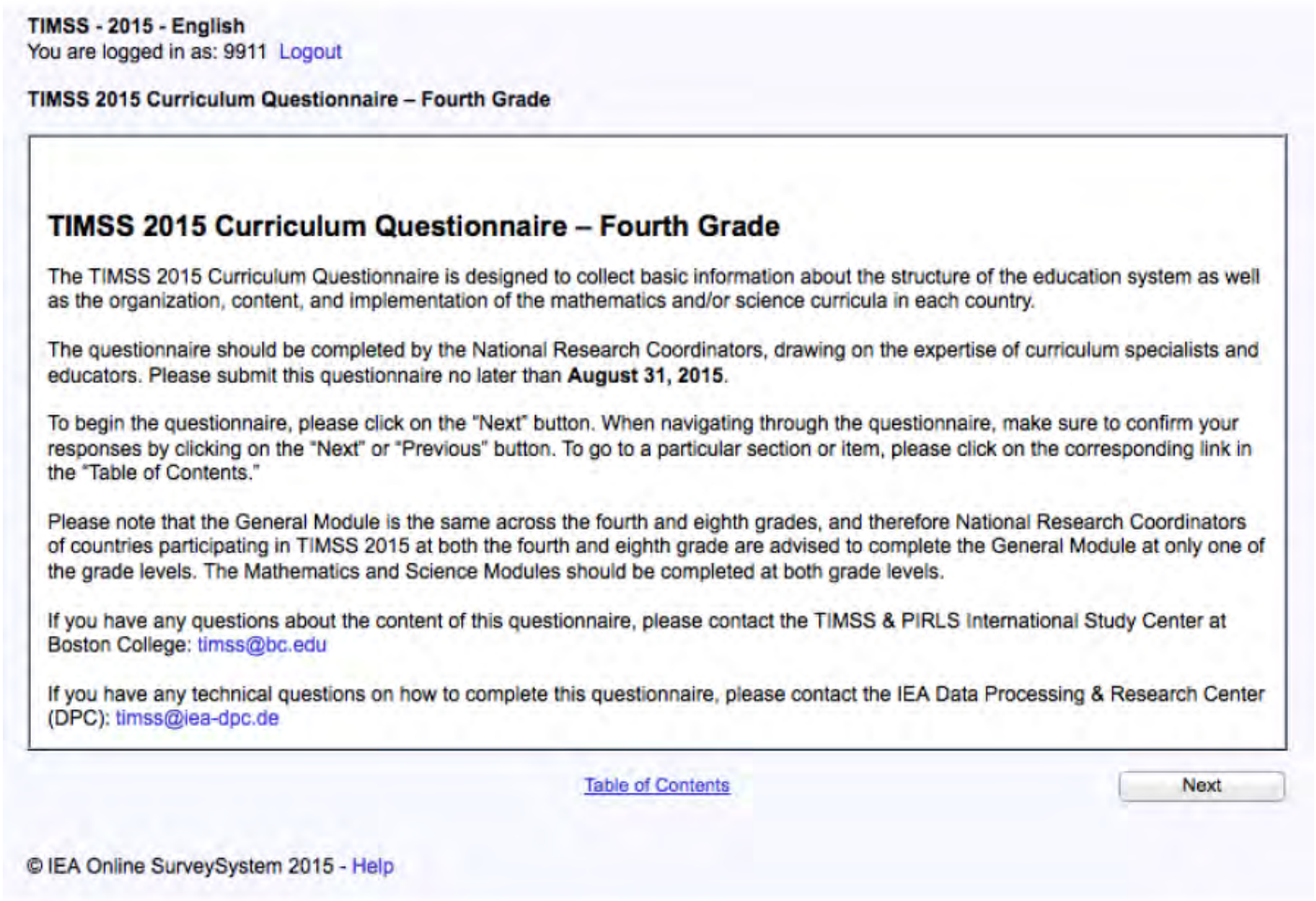


Exhibit D-4. TIMSS 2015 Grade 4 Curriculum Questionnaire—Continued



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TIMSS 2015 Curriculum Questionnaire – Fourth Grade

TIMSS 2015 Curriculum Questionnaire – Fourth Grade

The TIMSS 2015 Curriculum Questionnaire is designed to collect basic information about the structure of the education system as well as the organization, content, and implementation of the mathematics and/or science curricula in each country.

The questionnaire should be completed by the National Research Coordinators, drawing on the expertise of curriculum specialists and educators. Please submit this questionnaire no later than **August 31, 2015**.

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

Please note that the General Module is the same across the fourth and eighth grades, and therefore National Research Coordinators of countries participating in TIMSS 2015 at both the fourth and eighth grade are advised to complete the General Module at only one of the grade levels. The Mathematics and Science Modules should be completed at both grade levels.

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

If you have any technical questions on how to complete this questionnaire, please contact the IEA Data Processing & Research Center (DPC): timss@iea-dpc.de

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Exhibit D-4. TIMSS 2015 Grade 4 Curriculum Questionnaire—Continued

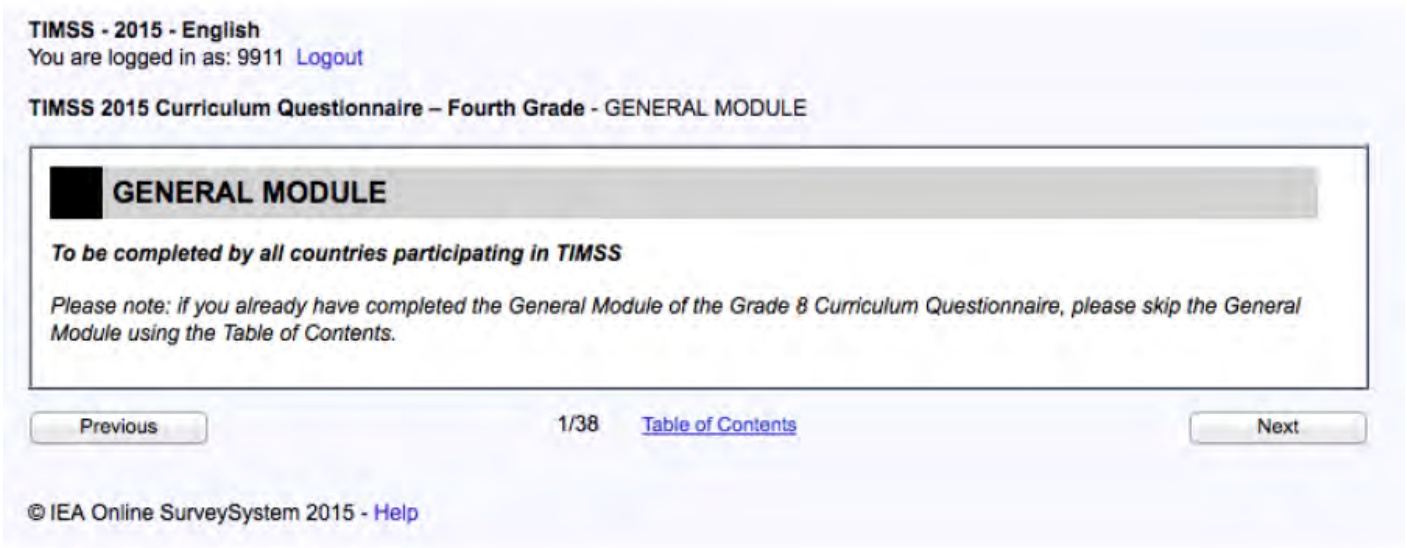
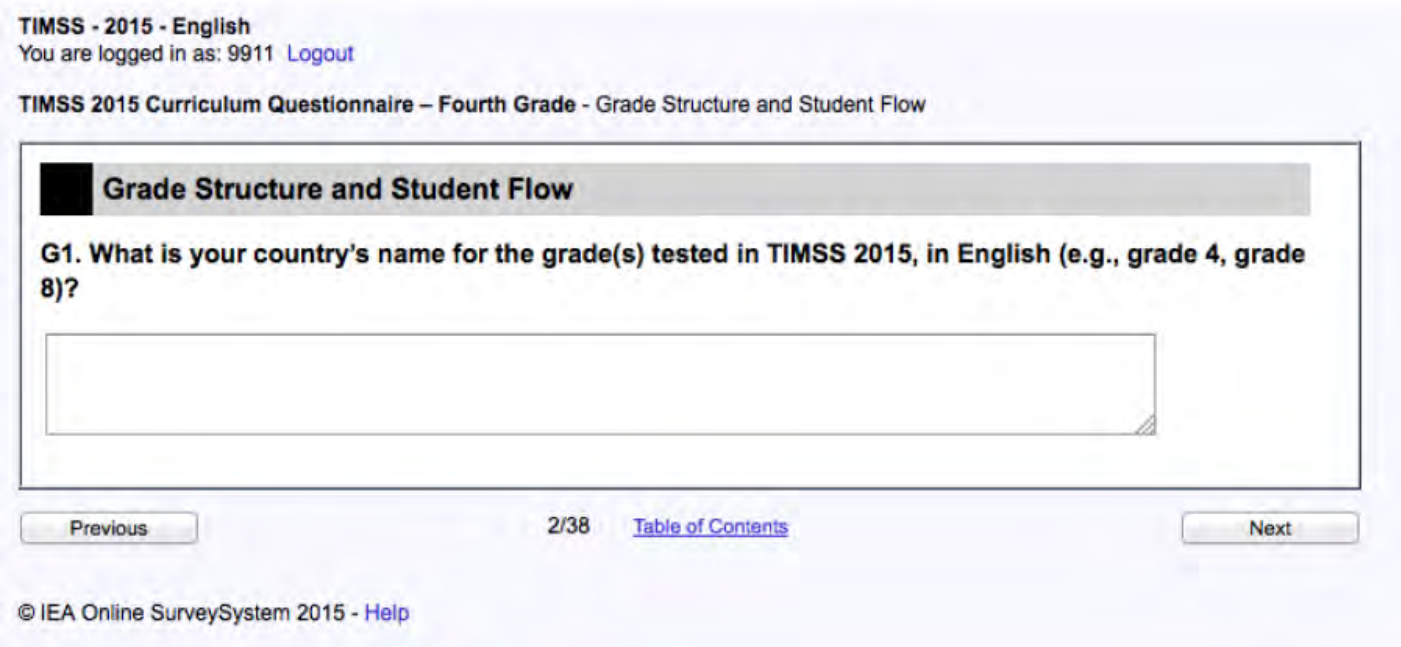


Exhibit D-4. TIMSS 2015 Grade 4 Curriculum Questionnaire—Continued



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TIMSS 2015 Curriculum Questionnaire – Fourth Grade - Grade Structure and Student Flow

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

Examples: "Children begin school during the calendar year of their 6th birthday"; "Children must be 6 years old by the end of June to begin school the following September."

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

Example: "Even though the official policy is that students can begin school in the year when they turn 6 years old, children typically begin primary school at age 7 because their parents feel they will benefit from being more mature."

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Exhibit D-4. TIMSS 2015 Grade 4 Curriculum Questionnaire—Continued

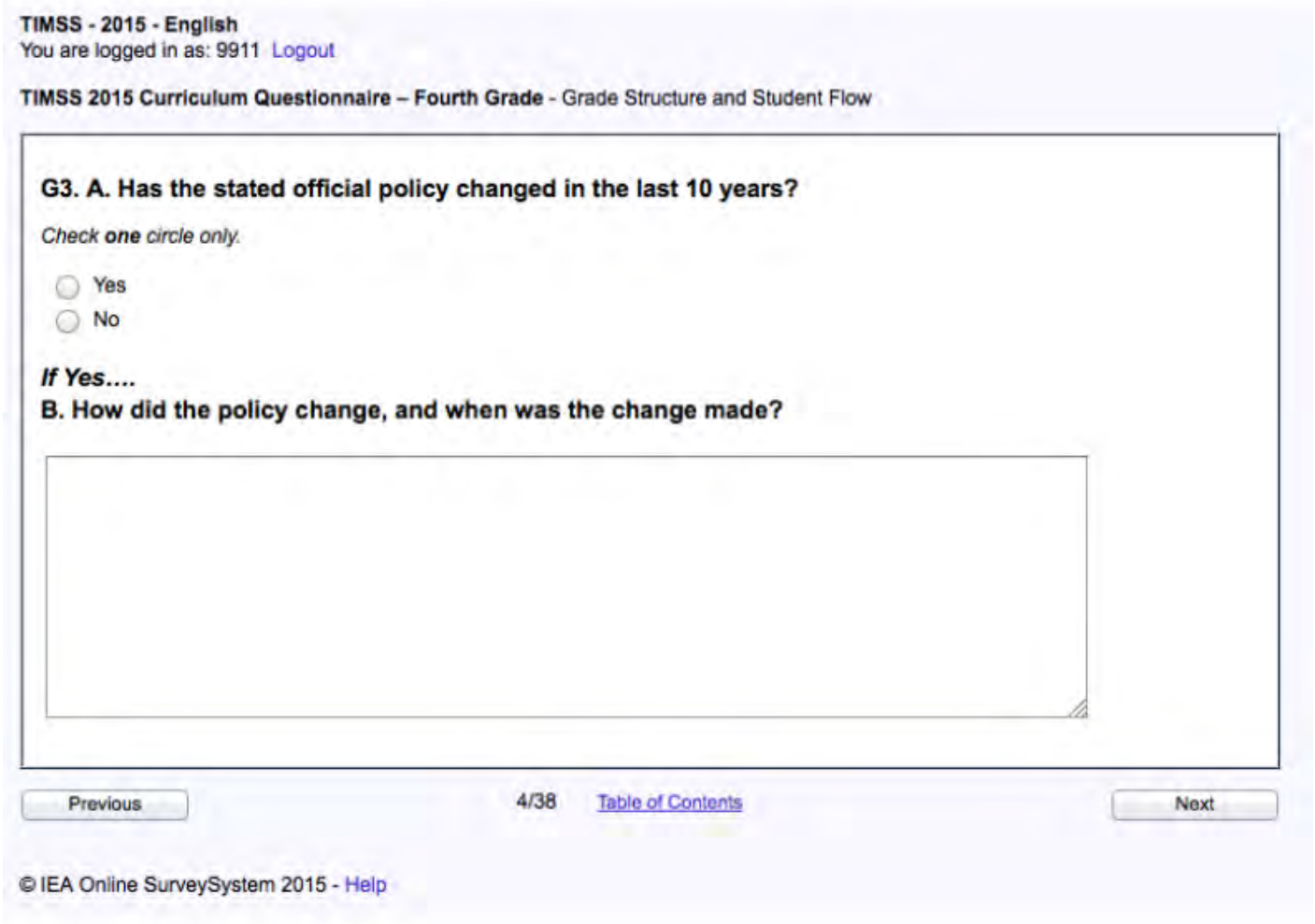
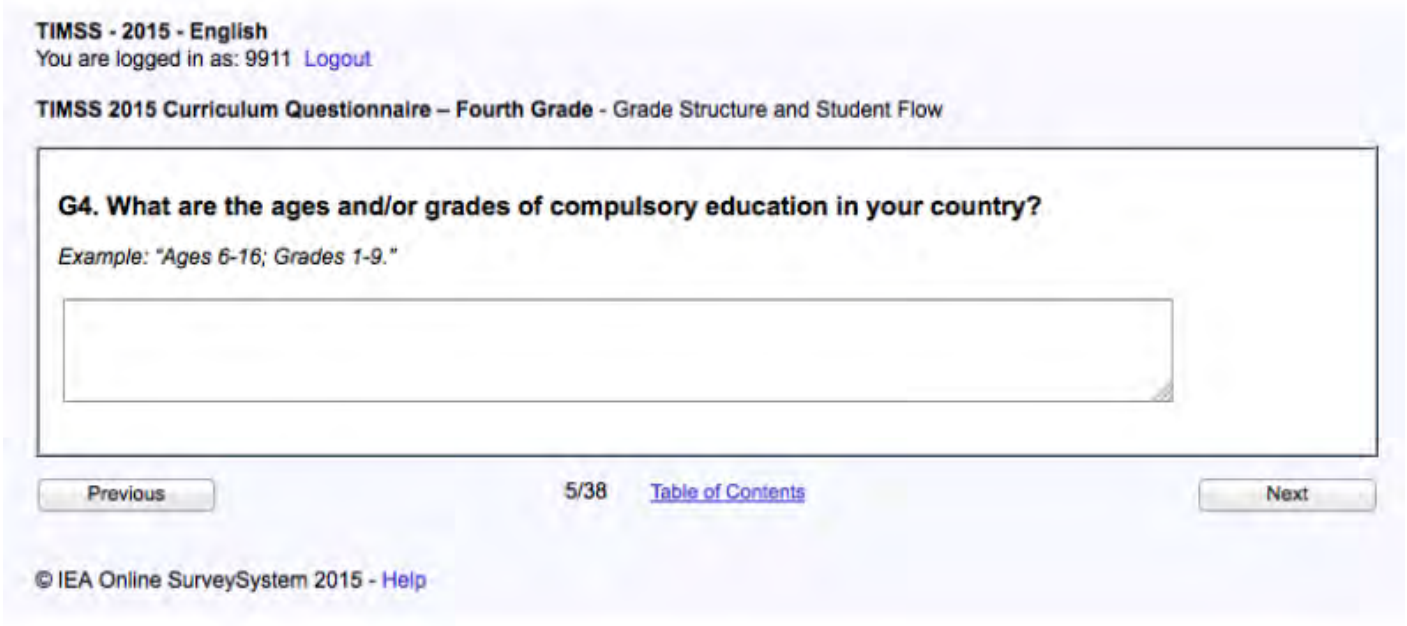


Exhibit D-4. TIMSS 2015 Grade 4 Curriculum Questionnaire—Continued



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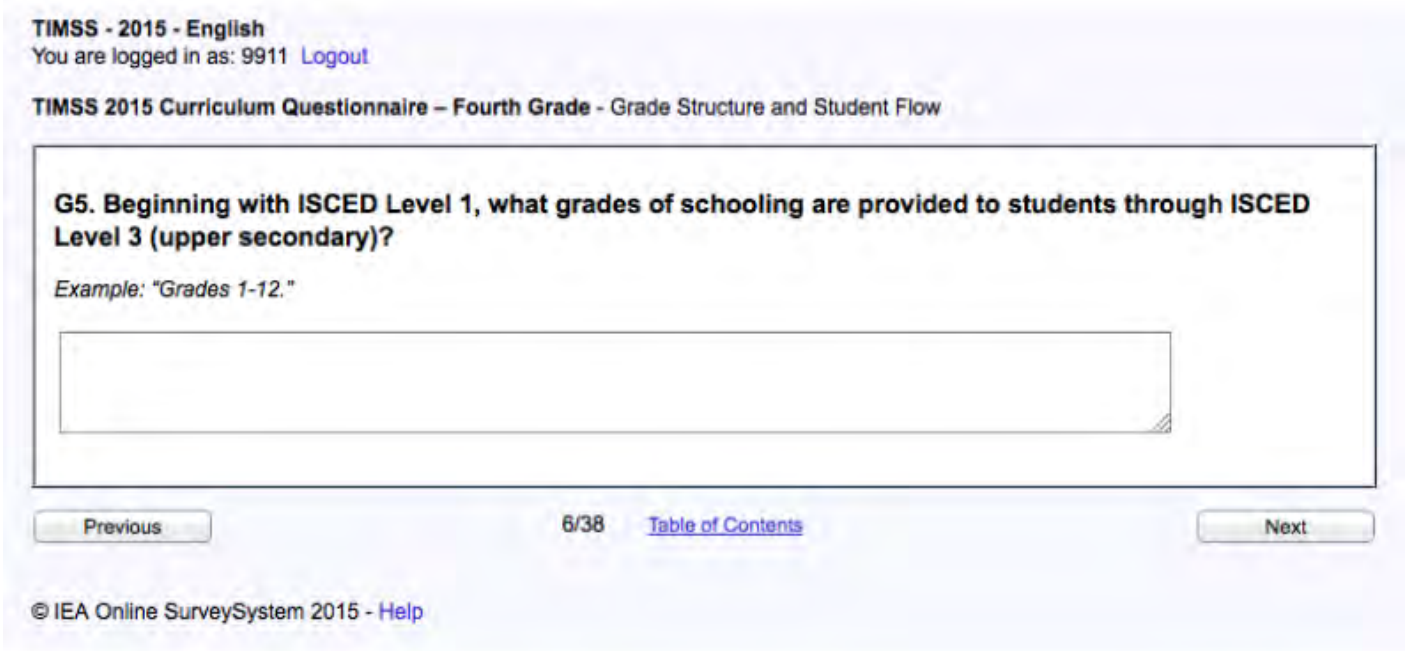


Exhibit D-4. TIMSS 2015 Grade 4 Curriculum Questionnaire—Continued

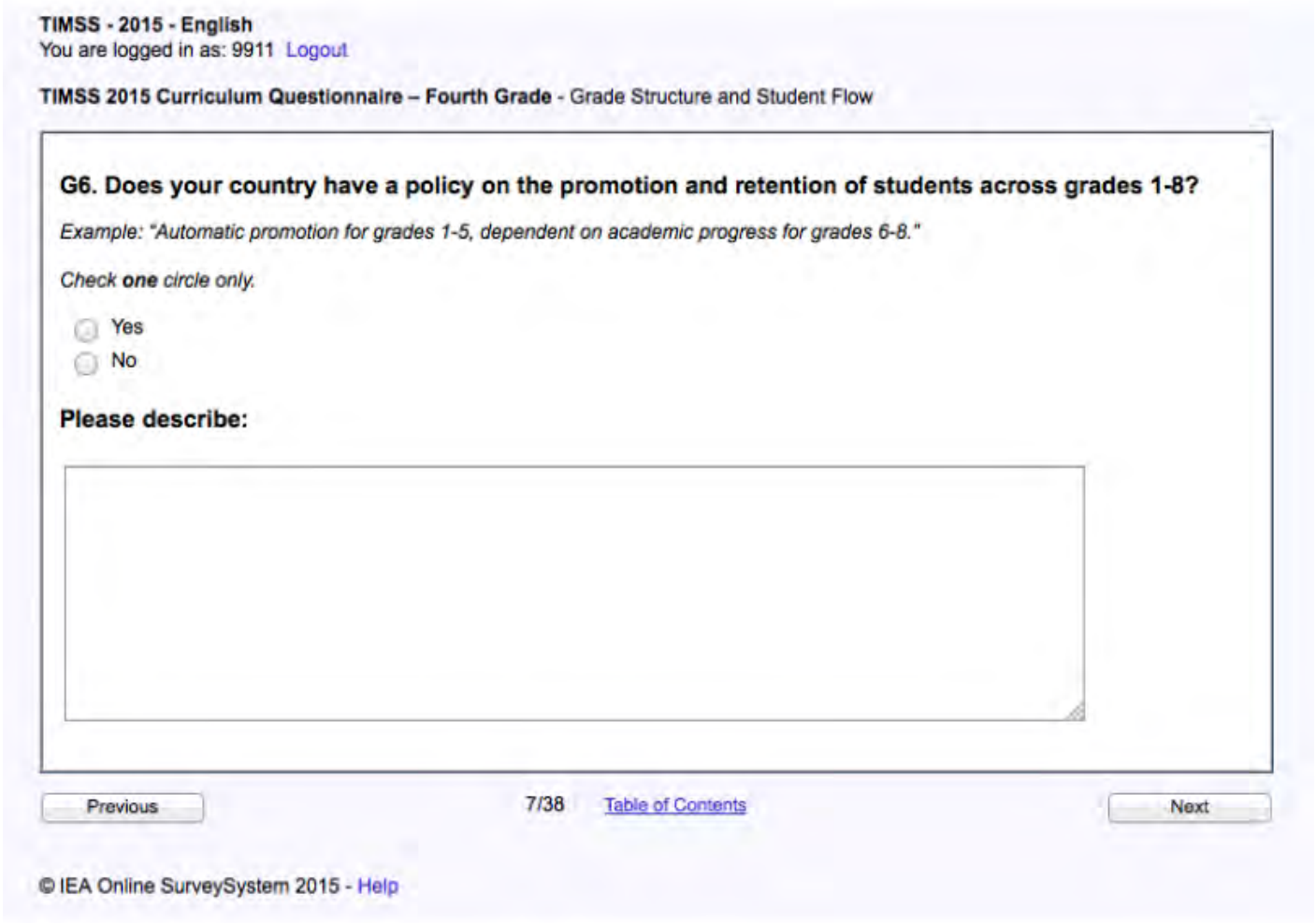
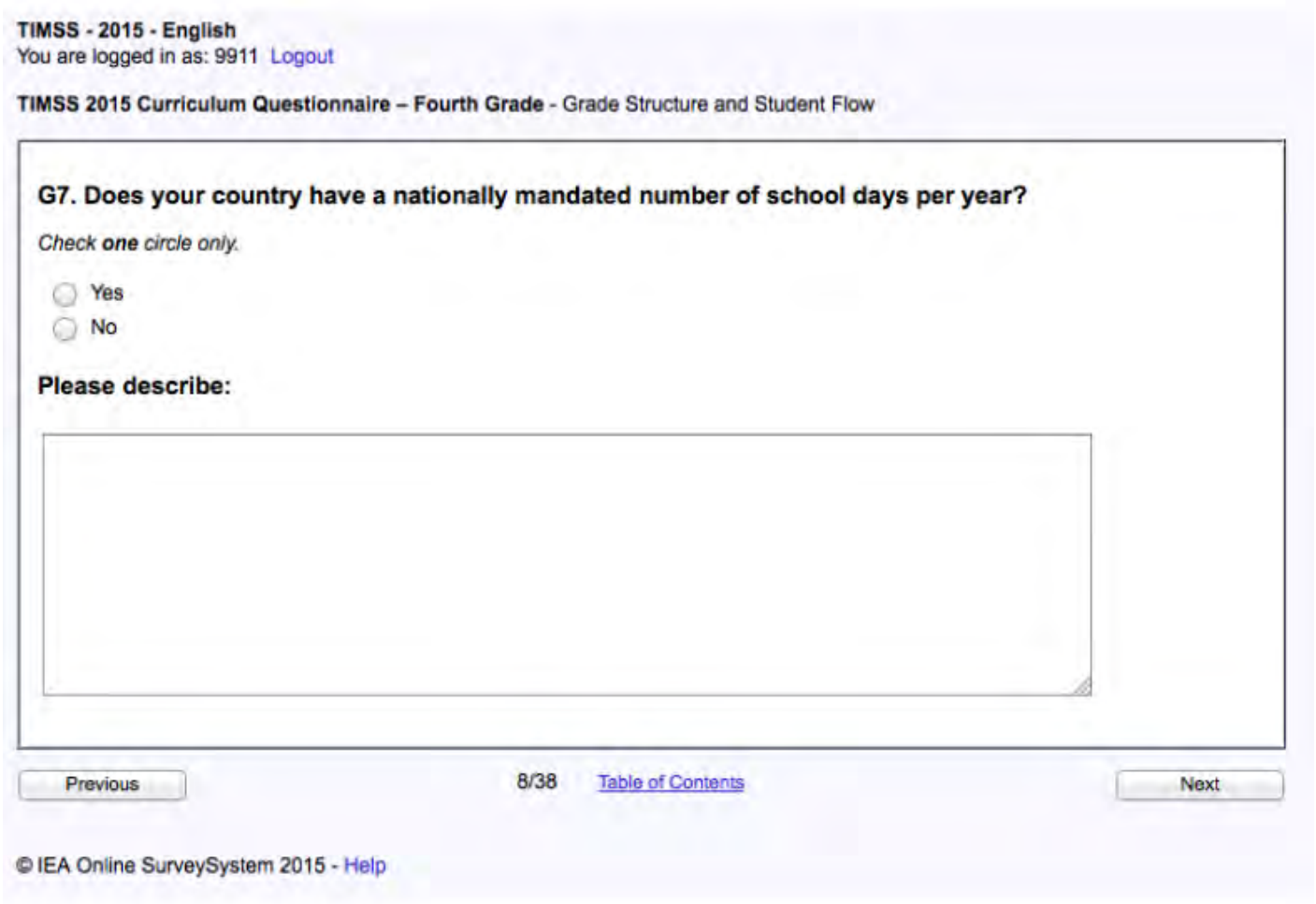


Exhibit D-4. TIMSS 2015 Grade 4 Curriculum Questionnaire—Continued



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TIMSS 2015 Curriculum Questionnaire – Fourth Grade - Grade Structure and Student Flow

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

*Check **one** circle only.*

- Yes
- No

Please describe:

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Exhibit D-4. TIMSS 2015 Grade 4 Curriculum Questionnaire—Continued

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TIMSS 2015 Curriculum Questionnaire – Fourth Grade - Early Childhood Education

Early Childhood Education

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

G8. A. Does your country provide universal ECED or PPE coverage?

*Programs with **universal** coverage are accessible and available to all children, although in some cases parents may choose not to enroll their children.*

*Check **one** circle for each line.*

	Yes	No
a) ECED programs for children under 3	○	○
b) PPE programs for children age 3 or older	○	○

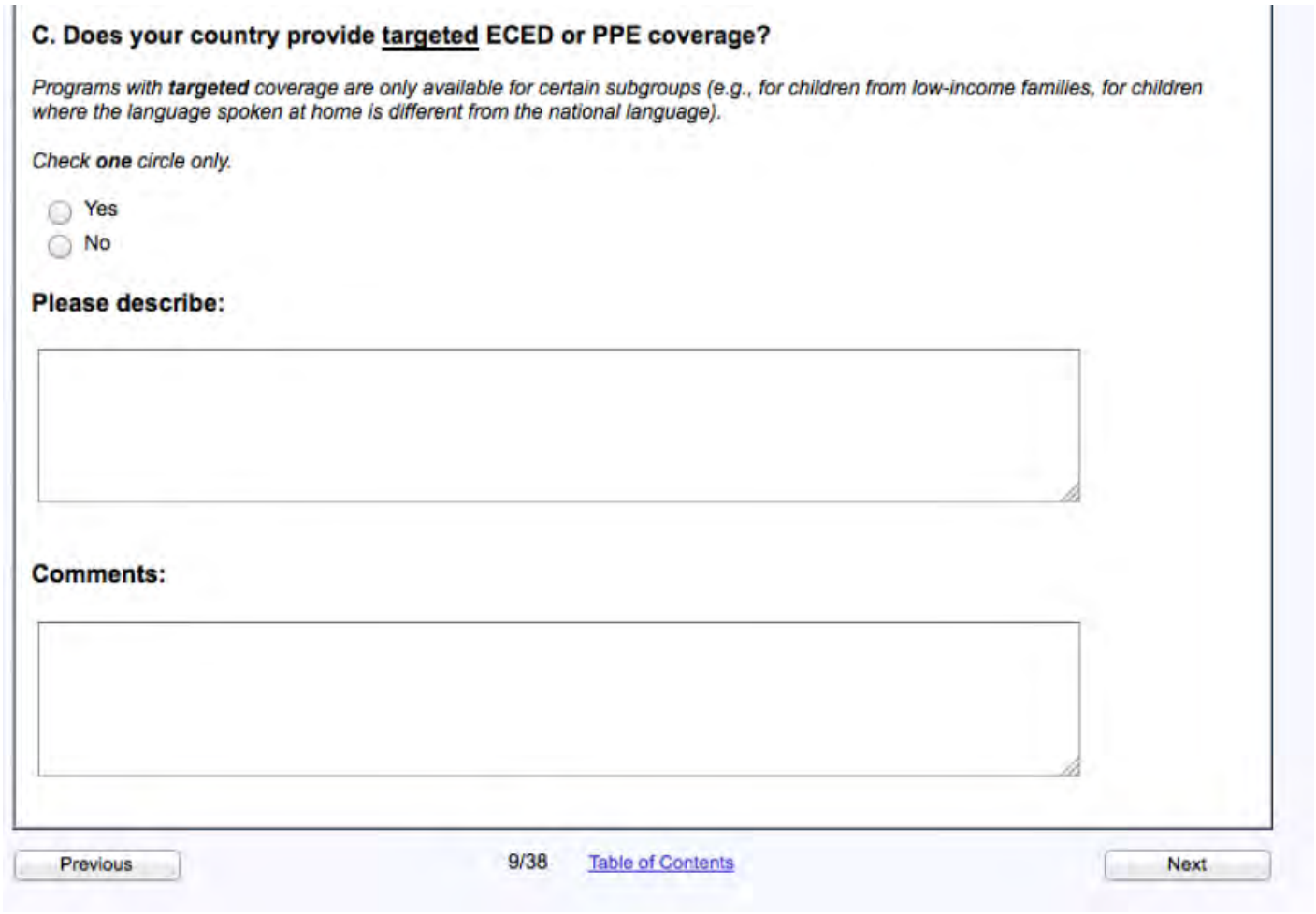
B. How many years can children attend these programs altogether?

*Check **one** circle only.*

- ○ 1 year
- ○ 2 years
- ○ 3 years
- ○ 4 or more years

Comments:

Exhibit D-4. TIMSS 2015 Grade 4 Curriculum Questionnaire—Continued



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

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

*Check **one** circle only.*

- ○ Yes
- ○ No

Please describe:

Comments:

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Exhibit D-4. TIMSS 2015 Grade 4 Curriculum Questionnaire—Continued

TIMSS - 2015 - English
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TIMSS 2015 Curriculum Questionnaire – Fourth Grade - Early Childhood Education

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

G9. A. Does your country have national curriculum guidance documents for early childhood education?

*Check **one** circle only.*

- ○ Yes
- ○ No

If Yes....

B. Do the curriculum guidance documents cover any of the following topic areas?

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

	ECED programs		PPE programs	
	Yes	No	Yes	No
a) Socio-emotional development	○	○	○	○
b) Physical development and health education	○	○	○	○
c) Oral language development and communication skills	○	○	○	○
d) Reading and literacy skills	○	○	○	○
e) Mathematics and numeracy skills	○	○	○	○
f) Science including understanding the natural world (e.g., weather)	○	○	○	○
g) Other Please specify below:	○	○	○	○

Comments:

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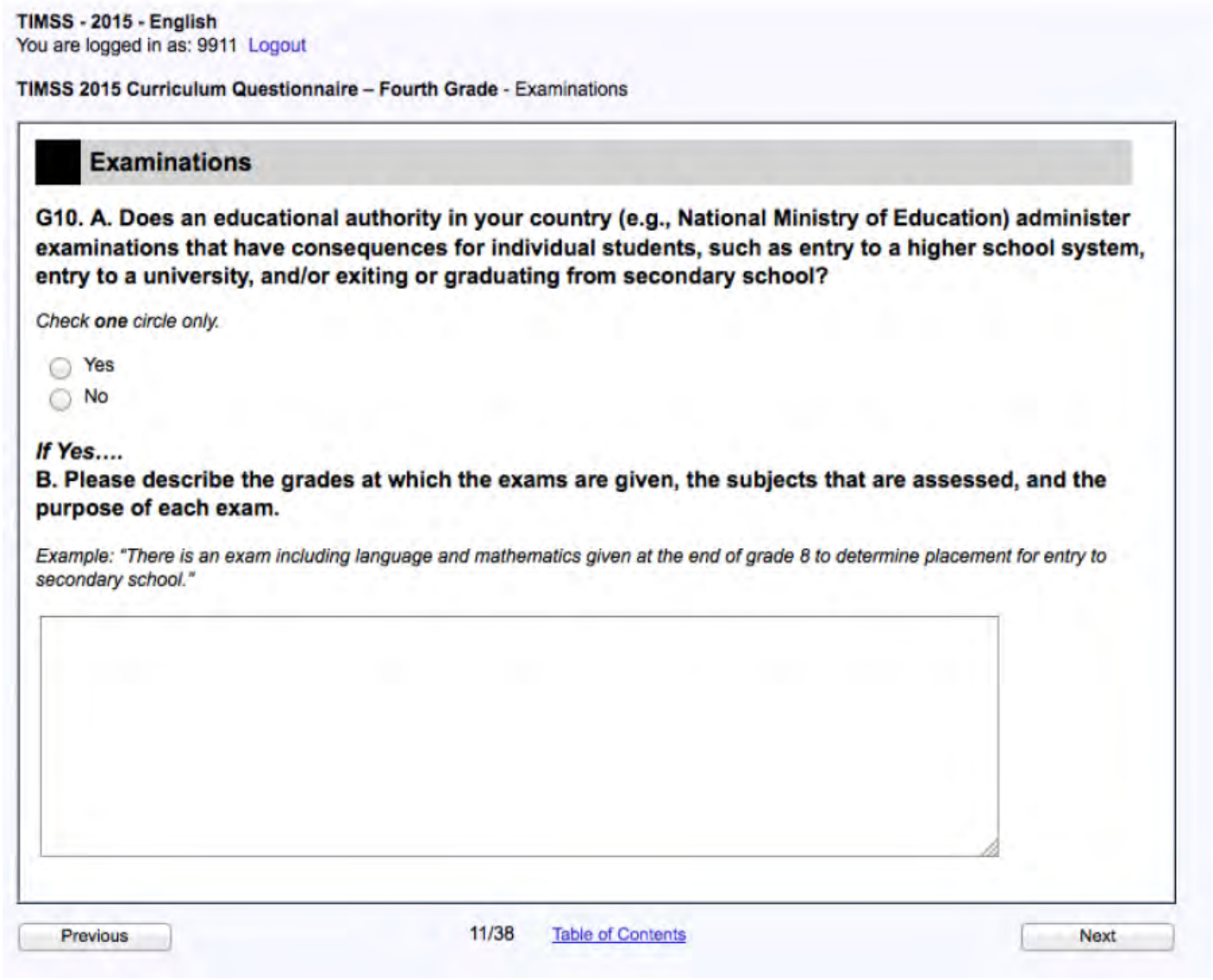
Exhibit D-4. TIMSS 2015 Grade 4 Curriculum Questionnaire—Continued



TIMSS - 2015 - English
You are logged in as: 9911 Logout

TIMSS 2015 Curriculum Questionnaire – Fourth Grade - Examinations

Examinations

G10. A. Does an educational authority in your country (e.g., National Ministry of Education) administer examinations that have consequences for individual students, such as entry to a higher school system, entry to a university, and/or exiting or graduating from secondary school?

*Check **one** circle only.*

- ○ Yes
- ○ No

If Yes….

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

Example: "There is an exam including language and mathematics given at the end of grade 8 to determine placement for entry to secondary school."

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Exhibit D-4. TIMSS 2015 Grade 4 Curriculum Questionnaire—Continued

Exhibit D-4. TIMSS 2015 Grade 4 Curriculum Questionnaire—Continued

TIMSS - 2015 - English
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TIMSS 2015 Curriculum Questionnaire – Fourth Grade - Teacher Preparation

Teacher Preparation

G12. A. What is the main preparation route(s) for teachers of students in the fourth grade?

Example: "Most teachers receive their education through a university degree program. Some have attended a teacher college program, but that is becoming less common."

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

*Check **one** circle for each line.*

	Yes	No
a) Supervised practicum during the teacher education program.	○	○
If Yes… How long is this period?		
b) Passing a qualifying examination (e.g., licensing, certification).	○	○
c) Completion of a probationary teaching period.	○	○
If Yes… How long is this period?		
d) Completion of a mentoring or induction program (e.g., experienced teachers work with novice teachers to provide instructional guidance).	○	○
e) Other Please specify below:	○	○

Exhibit D-4. TIMSS 2015 Grade 4 Curriculum Questionnaire—Continued

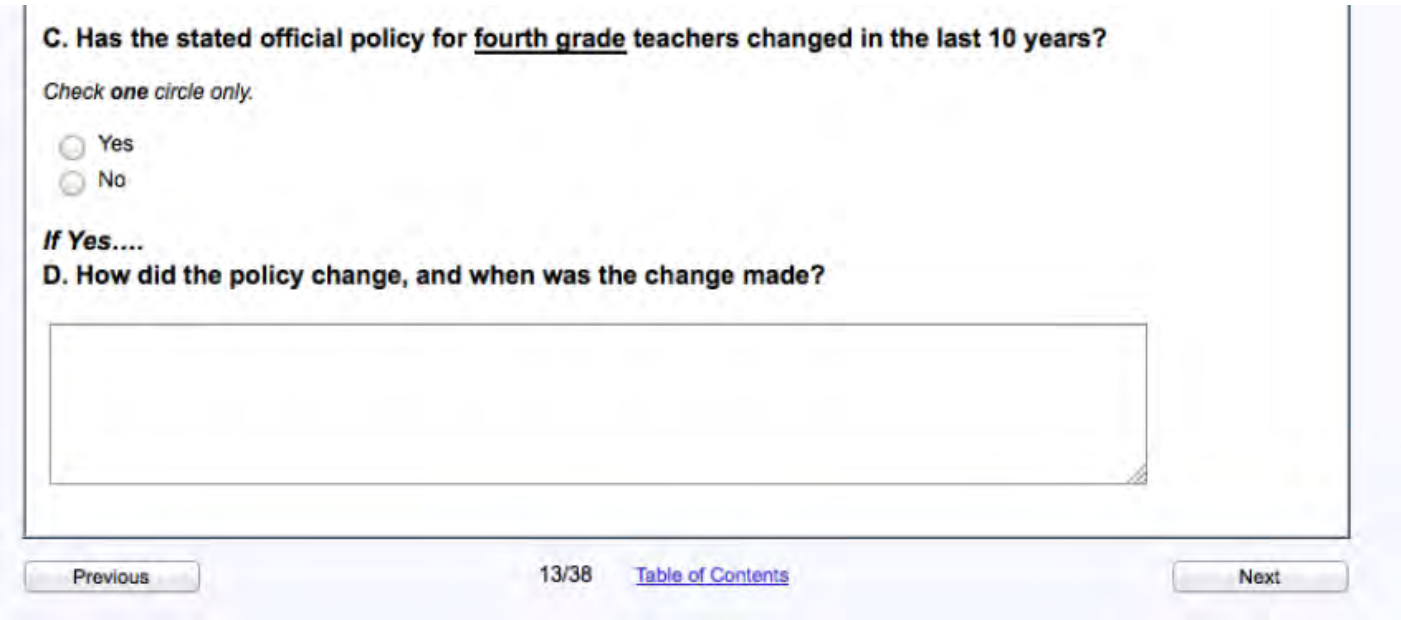
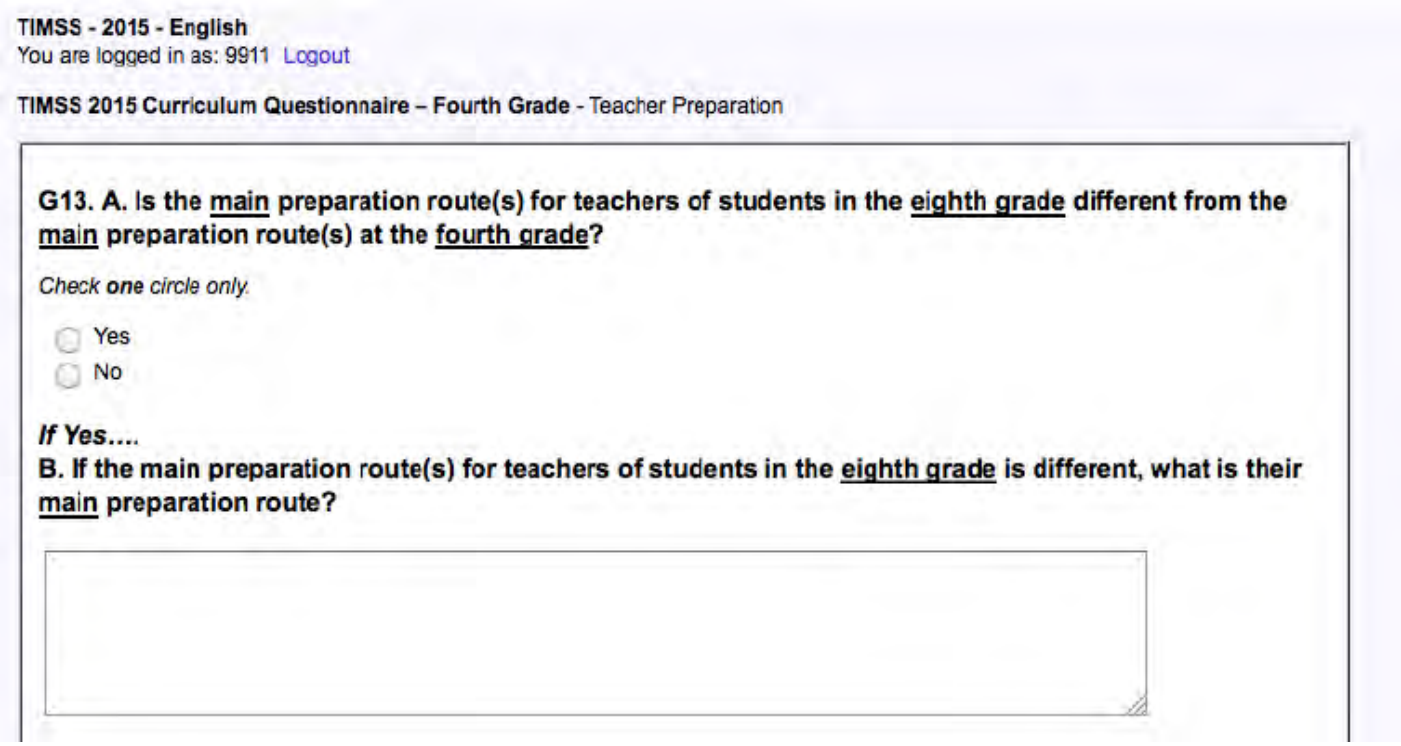


Exhibit D-4. TIMSS 2015 Grade 4 Curriculum Questionnaire—Continued



TIMSS - 2015 - English
You are logged in as: 9911 Logout

TIMSS 2015 Curriculum Questionnaire – Fourth Grade - Teacher Preparation

G13. A. Is the main preparation route(s) for teachers of students in the eighth grade different from the main preparation route(s) at the fourth grade?

*Check **one** circle only.*

- Yes
- No

If Yes….

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

Exhibit D-4. TIMSS 2015 Grade 4 Curriculum Questionnaire—Continued

C. If the requirements are different than the fourth grade, what are the current requirements for being a teacher of students in the eighth grade?

*Check **one** circle for each line.*

	Yes	No
a) Supervised practicum during the teacher education program.	○	○
If Yes... How long is this period?		
b) Passing a qualifying examination (e.g., licensing, certification).	○	○
c) Completion of a probationary teaching period.	○	○
If Yes... How long is this period?		
d) Completion of a mentoring or induction program (e.g., experienced teachers work with novice teachers to provide instructional guidance).	○	○
e) Other Please specify below:	○	○

D. Has the stated official policy changed for eighth grade teachers in the last 10 years?

*Check **one** circle only.*

- ○ Yes
- ○ No

If Yes....

E. How did the policy change, and when was the change made?

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Exhibit D-4. TIMSS 2015 Grade 4 Curriculum Questionnaire—Continued

TIMSS - 2015 - English
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TIMSS 2015 Curriculum Questionnaire – Fourth Grade - Principal Preparation

Principal Preparation

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

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

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

Check one circle for each line.

	Yes	No
a) Teaching experience	○	○
b) Completion of a specialized school leadership training program (including a school leadership degree program)	○	○
c) Other Please specify below:	○	○

C. Has the stated official policy changed in the last 10 years for principals of schools with fourth grade students?

Check one circle only.

- ○ Yes
- ○ No

If Yes....

D. How did the policy change, and when was the change made?

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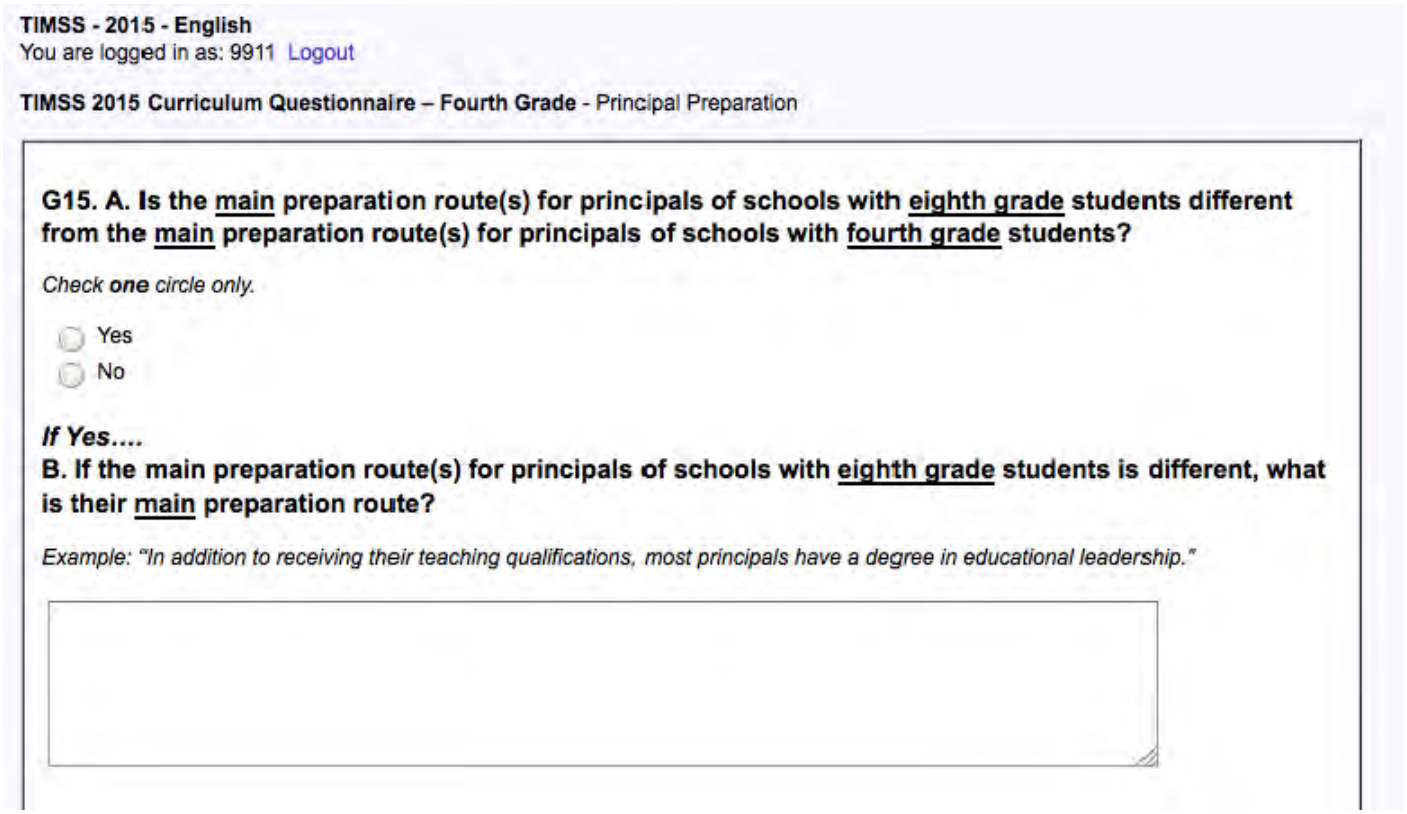
Exhibit D-4. TIMSS 2015 Grade 4 Curriculum Questionnaire—Continued



TIMSS - 2015 - English
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TIMSS 2015 Curriculum Questionnaire – Fourth Grade - Principal Preparation

G15. A. Is the main preparation route(s) for principals of schools with eighth grade students different from the main preparation route(s) for principals of schools with fourth grade students?

*Check **one** circle only.*

- Yes
- No

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

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

Exhibit D-4. TIMSS 2015 Grade 4 Curriculum Questionnaire—Continued

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

*Check **one** circle for each line.*

	Yes	No
a) Teaching experience	○	○
b) Completion of a specialized school leadership training program (including a school leadership degree program)	○	○
c) Other Please specify below:	○	○

D. Has the stated official policy changed in the last 10 years for principals of schools with eighth grade students?

*Check **one** circle only.*

- ○ Yes
- ○ No

If Yes....

E. How did the policy change, and when was the change made?

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Exhibit D-4. TIMSS 2015 Grade 4 Curriculum Questionnaire—Continued

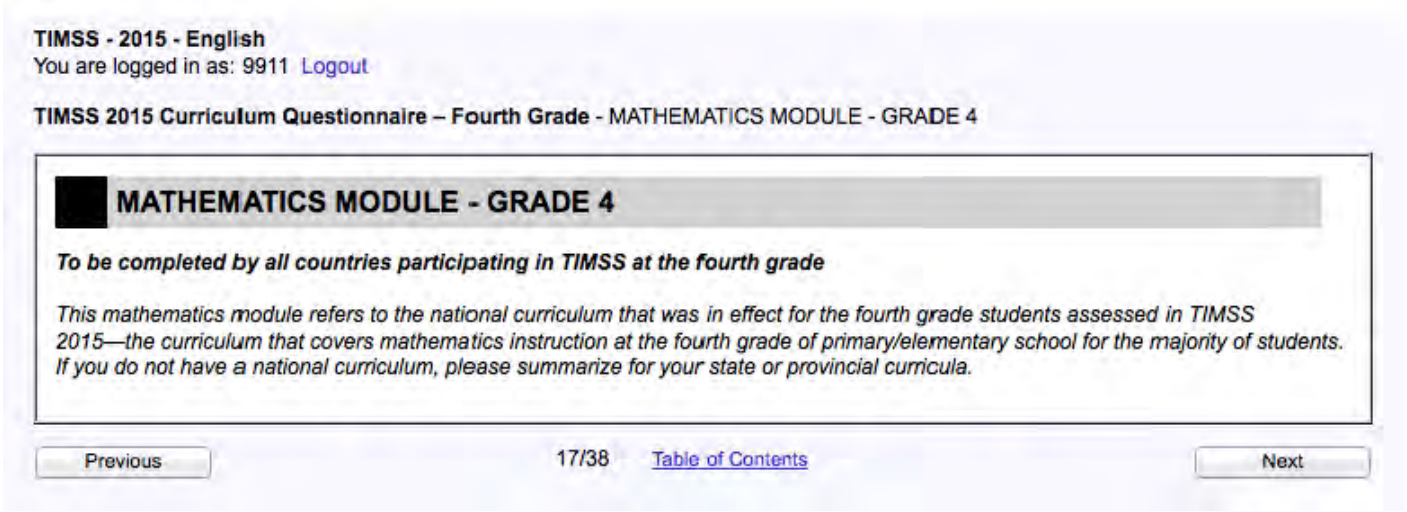

Exhibit D-4. TIMSS 2015 Grade 4 Curriculum Questionnaire—Continued

TIMSS - 2015 - English
You are logged in as: 9911 Logout

TIMSS 2015 Curriculum Questionnaire – Fourth Grade - About the Fourth Grade Mathematics Curriculum

About the Fourth Grade Mathematics Curriculum

This mathematics module refers to the national curriculum that was in effect for the fourth grade students assessed in TIMSS 2015—the curriculum that covers mathematics instruction at the fourth grade of primary/elementary school for the majority of students. If you do not have a national curriculum, please summarize for your state or provincial curricula.

M1. Does your country have a national curriculum that covers mathematics instruction at the fourth grade of primary/elementary school?

*Check **one** circle only.*

- ○ Yes
- ○ No

If Yes…
Comments:

If No…
What is the highest level of decision-making authority (e.g., state or province) that provides a curriculum that covers mathematics instruction at the fourth grade of primary/elementary school?

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Exhibit D-4. TIMSS 2015 Grade 4 Curriculum Questionnaire—Continued

TIMSS - 2015 - English
You are logged in as: 9911 Logout

TIMSS 2015 Curriculum Questionnaire – Fourth Grade - About the Fourth Grade Mathematics Curriculum

M2. A. In what year was the 2014/2015 mathematics curriculum introduced?

Comments:

B. Is the mathematics curriculum currently being revised?

*Check **one** circle only.*

- ○ Yes
- ○ No

If Yes…
Please explain:

If No…
Comments:

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Exhibit D-4. TIMSS 2015 Grade 4 Curriculum Questionnaire—Continued

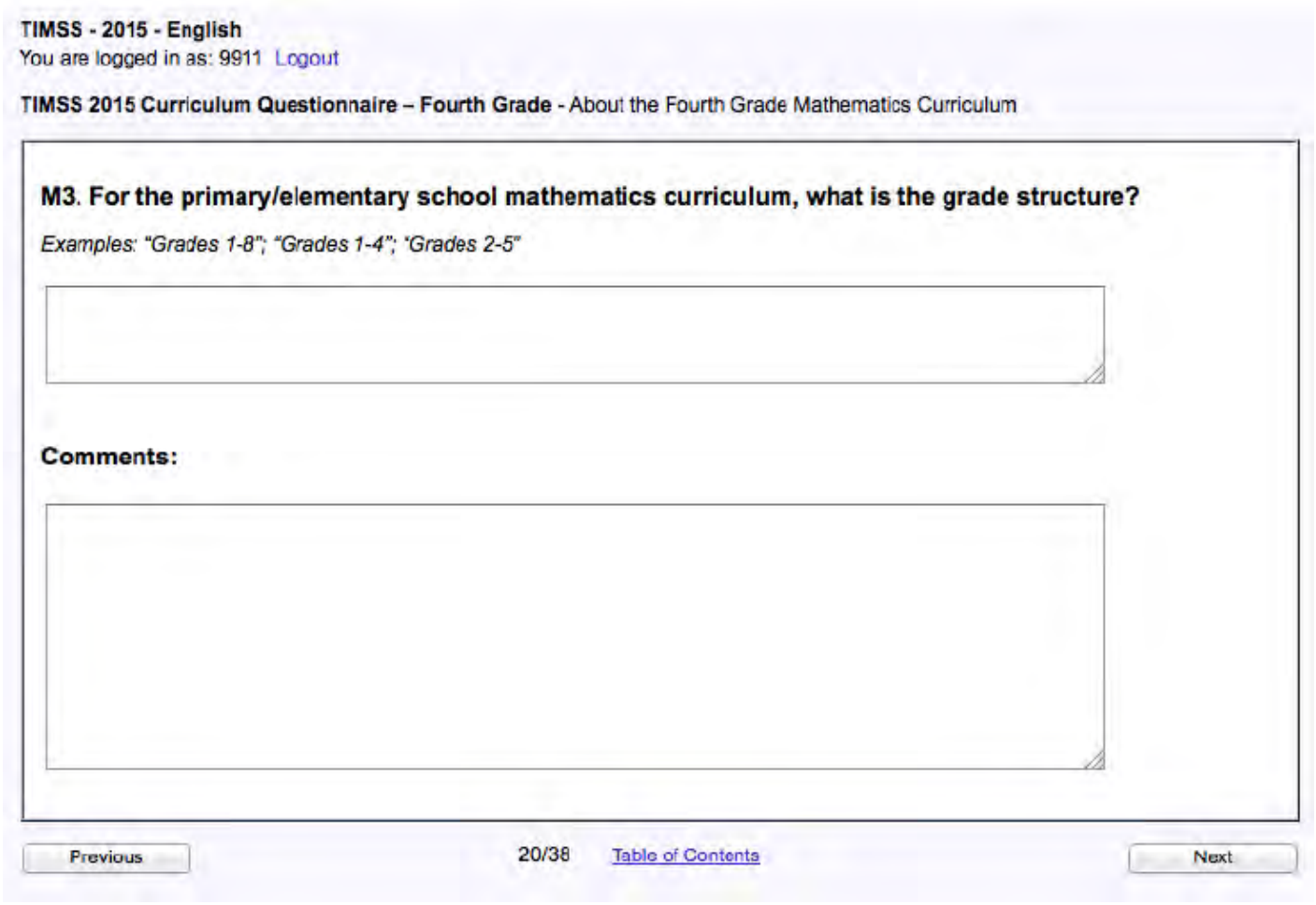

Exhibit D-4. TIMSS 2015 Grade 4 Curriculum Questionnaire—Continued

TIMSS - 2015 - English
You are logged in as: 9911 Logout

TIMSS 2015 Curriculum Questionnaire – Fourth Grade - Curriculum Specifications

Curriculum Specifications

This mathematics module refers to the national curriculum that was in effect for the fourth grade students assessed in TIMSS 2015—the curriculum that covers mathematics instruction at the fourth grade of primary/elementary school for the majority of students. If you do not have a national curriculum, please summarize for your state or provincial curricula.

M4. What does the mathematics curriculum prescribe?

*Check **one** circle for each line.*

	Yes	No
a) Goals and objectives	○	○
b) Instructional processes or methods	○	○
c) Materials (e.g., textbooks, instructional materials)	○	○
d) Assessment methods/activities	○	○
e) Other Please specify below:	○	○

Comments:

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Exhibit D-4. TIMSS 2015 Grade 4 Curriculum Questionnaire—Continued

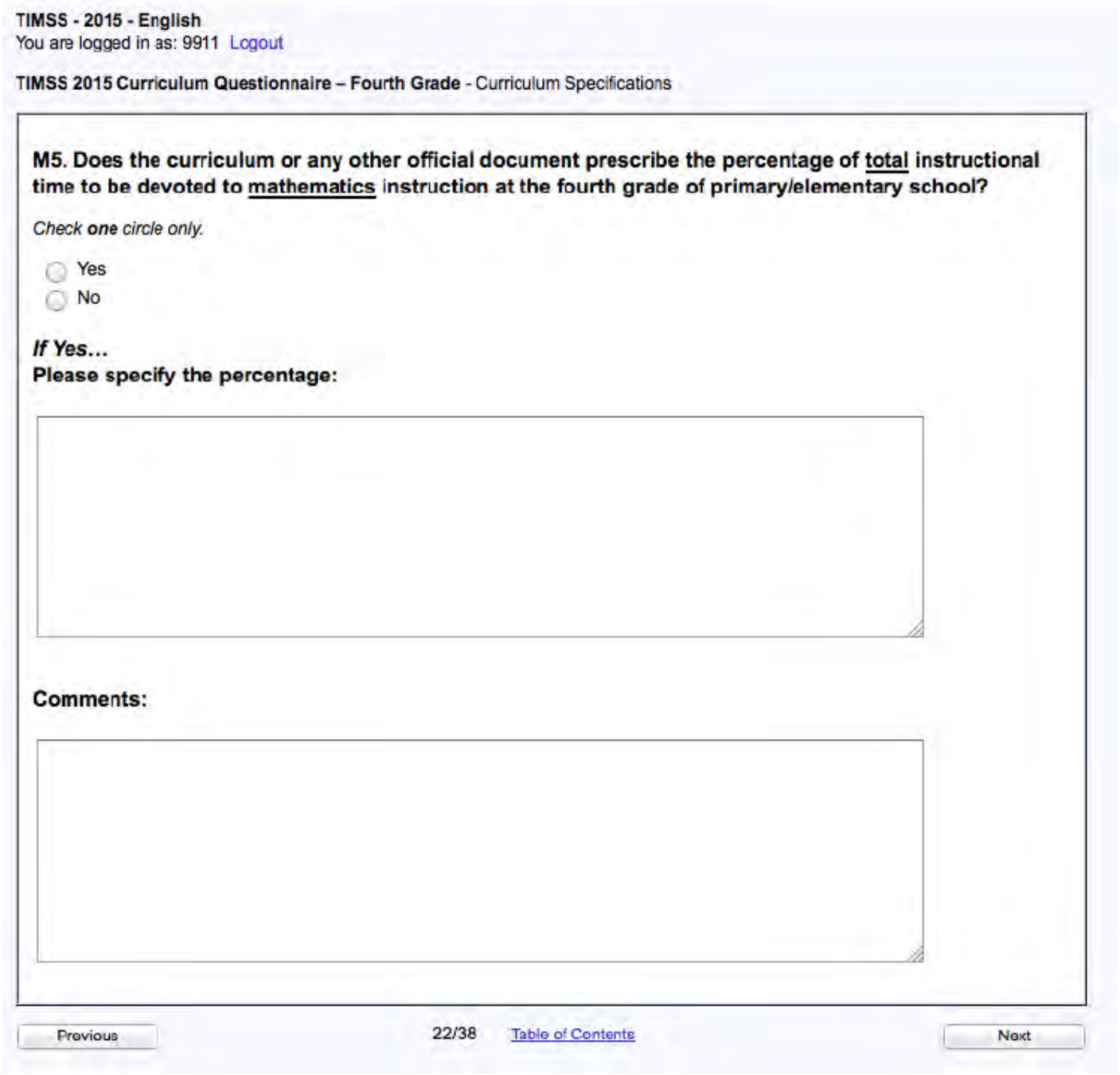
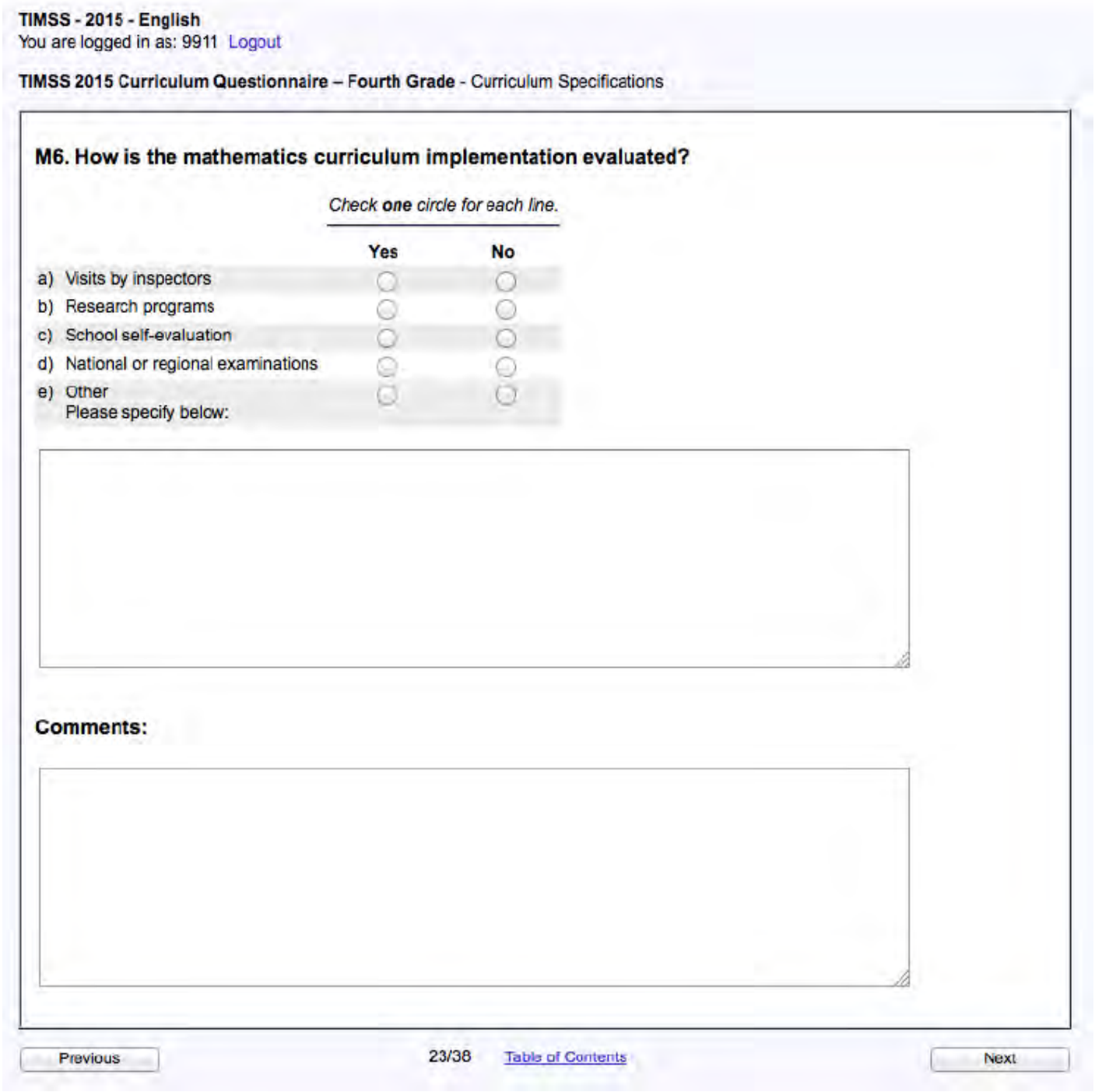


Exhibit D-4. TIMSS 2015 Grade 4 Curriculum Questionnaire—Continued



TIMSS - 2015 - English
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TIMSS 2015 Curriculum Questionnaire – Fourth Grade - Curriculum Specifications

M6. How is the mathematics curriculum implementation evaluated?

*Check **one** circle for each line.*

	Yes	No
a) Visits by inspectors	○	○
b) Research programs	○	○
c) School self-evaluation	○	○
d) National or regional examinations	○	○
e) Other Please specify below:	○	○

Comments:

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Exhibit D-4. TIMSS 2015 Grade 4 Curriculum Questionnaire—Continued

TIMSS - 2015 - English
You are logged in as: 9911 Logout

TIMSS 2015 Curriculum Questionnaire – Fourth Grade - Instructional Materials and Use of Technology

Instructional Materials and Use of Technology

This mathematics module refers to the national curriculum that was in effect for the fourth grade students assessed in TIMSS 2015—the curriculum that covers mathematics instruction at the fourth grade of primary/elementary school for the majority of students. If you do not have a national curriculum, please summarize for your state or provincial curricula.

M7. A. Is there a process for approving the mathematics instructional materials?

*Check **one** circle only.*

- ○ Yes
- ○ No

If Yes…
Please describe the process, and what materials (e.g., textbooks, workbooks, online materials) must be approved through this process:

B. Does the national curriculum contain statements/policies about the use of technology (e.g., computers, tablets, calculators) in grade 4 mathematics instruction?

*Check **one** circle only.*

- ○ Yes
- ○ No

If Yes…
What are the statements/policies?

(Continued on Next Page)

Exhibit D-4. TIMSS 2015 Grade 4 Curriculum Questionnaire—Continued

TIMSS - 2015 - English *(Continued)*
You are logged in as: 9911 Logout

TIMSS 2015 Curriculum Questionnaire – Fourth Grade - Instructional Materials and Use of Technology

C. Does the national curriculum contain statements/policies about student use of technological aids (e.g., computers, tablets, calculators) in grade 4 mathematics tests or examinations?

*Check **one** circle only.*

- ○ Yes
- ○ No

If Yes…
What are the statements/policies?

Comments:

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Exhibit D-4. TIMSS 2015 Grade 4 Curriculum Questionnaire—Continued

TIMSS - 2015 - English
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TIMSS 2015 Curriculum Questionnaire – Fourth Grade - Fourth Grade Mathematics Topics Covered

Fourth Grade Mathematics Topics Covered

This mathematics module refers to the national curriculum that was in effect for the fourth grade students assessed in TIMSS 2015—the curriculum that covers mathematics instruction at the fourth grade of primary/elementary school for the majority of students. If you do not have a national curriculum, please summarize for your state or provincial curricula.

M8. (i) According to the national mathematics curriculum, what proportion of grade 4 students should have been taught each of the following topics or skills by the end of grade 4?

Be sure to include curriculum expectations for all grades up to and including grade 4. Grades represent years of formal schooling. For example, if "Year 5" in your country corresponds to the fourth year of formal schooling, please choose grade 4.

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

If there are not any specifications to this detail, please indicate national expectations to the best of your ability. If part of a topic does not apply [e.g., odd and even numbers in part A topic (c)], please explain in the comment field.

	(i) Proportion of grade 4 students expected to be taught topic *Check one circle for each line.*			(ii) Grade(s) topic is expected to be taught preprimary (PP) through the end of upper secondary (G12) *Check the corresponding grade(s) for each topic.*											
A. Number	**All or almost all students**	**Only the more able students**	**Not included in the curriculum through grade 4**	**PP**	**G1**	**G2**	**G3**	**G4**	**G5**	**G6**	**G7**	**G8**	**G9**	**G10**	**G11**	**G12**
a) Concepts of whole numbers, including place value and ordering	○	○	○	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
b) Adding, subtracting, multiplying, and/or dividing with whole numbers	○	○	○	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
c) Concepts of multiples and factors; odd and even numbers	○	○	○	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
d) Concepts of fractions (fractions as parts of a whole or of a collection, or as a location on a number line)	○	○	○	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
e) Adding and subtracting with fractions, comparing and ordering fractions	○	○	○	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
f) Concepts of decimals, including place value and ordering, adding and subtracting with decimals	○	○	○	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
g) Number sentences (finding the missing number, modeling simple situations with number sentences)	○	○	○	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
h) Number patterns (extending number patterns and finding missing terms)	○	○	○	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Exhibit D-4. TIMSS 2015 Grade 4 Curriculum Questionnaire—Continued

Exhibit D-4. TIMSS 2015 Grade 4 Curriculum Questionnaire—Continued

Fourth Grade Mathematics Topics Covered

This mathematics module refers to the national curriculum that was in effect for the fourth grade students assessed in TIMSS 2015—the curriculum that covers mathematics instruction at the fourth grade of primary/elementary school for the majority of students. If you do not have a national curriculum, please summarize for your state or provincial curricula.

M8. (i) According to the national mathematics curriculum, what proportion of grade 4 students should have been taught each of the following topics or skills by the end of grade 4?

Be sure to include curriculum expectations for all grades up to and including grade 4. Grades represent years of formal schooling. For example, if "Year 5" in your country corresponds to the fourth year of formal schooling, please choose grade 4.

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

If there are not any specifications to this detail, please indicate national expectations to the best of your ability. If part of a topic does not apply [e.g., odd and even numbers in part A topic (c)], please explain in the comment field.

	(i) Proportion of grade 4 students expected to be taught topic			(ii) Grade(s) topic is expected to be taught preprimary (PP) through the end of upper secondary (G12)												
	*Check **one** circle for each line.*			*Check the corresponding grade(s) for each topic.*												
A. Number	**All or almost all students**	**Only the more able students**	**Not included in the curriculum through grade 4**	**PP**	**G1**	**G2**	**G3**	**G4**	**G5**	**G6**	**G7**	**G8**	**G9**	**G10**	**G11**	**G12**
a) Concepts of whole numbers, including place value and ordering	○	○	○	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
b) Adding, subtracting, multiplying, and/or dividing with whole numbers	○	○	○	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
c) Concepts of multiples and factors; odd and even numbers	○	○	○	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
d) Concepts of fractions (fractions as parts of a whole or of a collection, or as a location on a number line)	○	○	○	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
e) Adding and subtracting with fractions, comparing and ordering fractions	○	○	○	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
f) Concepts of decimals, including place value and ordering, adding and subtracting with decimals	○	○	○	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
g) Number sentences (finding the missing number, modeling simple situations with number sentences)	○	○	○	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
h) Number patterns (extending number patterns and finding missing terms)	○	○	○	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Comments:

Exhibit D-4. TIMSS 2015 Grade 4 Curriculum Questionnaire—Continued

TIMSS - 2015 - English
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TIMSS 2015 Curriculum Questionnaire – Fourth Grade - Fourth Grade Mathematics Topics Covered

M8. (continued)

(i) According to the national mathematics curriculum, what proportion of grade 4 students should have been taught each of the following topics or skills by the end of grade 4?

Be sure to include curriculum expectations for all grades up to and including grade 4. Grades represent years of formal schooling. For example, if "Year 5" in your country corresponds to the fourth year of formal schooling, please choose grade 4.

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

If there are not any specifications to this detail, please indicate national expectations to the best of your ability. If part of a topic does not apply [e.g., odd and even numbers in part A topic (c)], please explain in the comment field.

	(i) Proportion of grade 4 students expected to be taught topic			(ii) Grade(s) topic is expected to be taught preprimary (PP) through the end of upper secondary (G12)												
	*Check **one** circle for each line.*			*Check the corresponding grade(s) for each topic.*												
B. Geometric Shapes and Measures	**All or almost all students**	**Only the more able students**	**Not included in the curriculum through grade 4**	**PP**	**G1**	**G2**	**G3**	**G4**	**G5**	**G6**	**G7**	**G8**	**G9**	**G10**	**G11**	**G12**
a) Lines: measuring, estimating length of; parallel and perpendicular lines	○	○	○	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
b) Comparing and drawing angles	○	○	○	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
c) Using informal coordinate systems to locate points in a plane (e.g., in square B4)	○	○	○	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
d) Elementary properties of common geometric shapes	○	○	○	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
e) Reflections and rotations	○	○	○	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
f) Relationships between two-dimensional and three-dimensional shapes	○	○	○	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
g) Finding and estimating areas, perimeters, and volumes	○	○	○	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Comments:

TIMSS - 2015 - English
You are logged in as: 9911 Logout

TIMSS 2015 Curriculum Questionnaire – Fourth Grade - Fourth Grade Mathematics Topics Covered

M8. (continued)

(i) According to the national mathematics curriculum, what proportion of grade 4 students should have been taught each of the following topics or skills by the end of grade 4?

Be sure to include curriculum expectations for all grades up to and including grade 4. Grades represent years of formal schooling. For example, if "Year 5" in your country corresponds to the fourth year of formal schooling, please choose grade 4.

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

If there are not any specifications to this detail, please indicate national expectations to the best of your ability. If part of a topic does not apply [e.g., odd and even numbers in part A topic (c)], please explain in the comment field.

	(i) Proportion of grade 4 students expected to be taught topic			(ii) Grade(s) topic is expected to be taught preprimary (PP) through the end of upper secondary (G12)											
	*Check **one** circle for each line.*			*Check the corresponding grade(s) for each topic.*											
C. Data Display	**All or almost all students**	**Only the more able students**	**Not included in the curriculum through grade 4**	**PP**	**G1**	**G2**	**G3**	**G4**	**G5**	**G6**	**G7**	**G8**	**G9**	**G10**	**G11**	**G12**
a) Reading and representing data from tables, pictographs, bar graphs, or pie charts	○	○	○	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
b) Drawing conclusions from data displays	○	○	○	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Comments:

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Exhibit D-4. TIMSS 2015 Grade 4 Curriculum Questionnaire—Continued

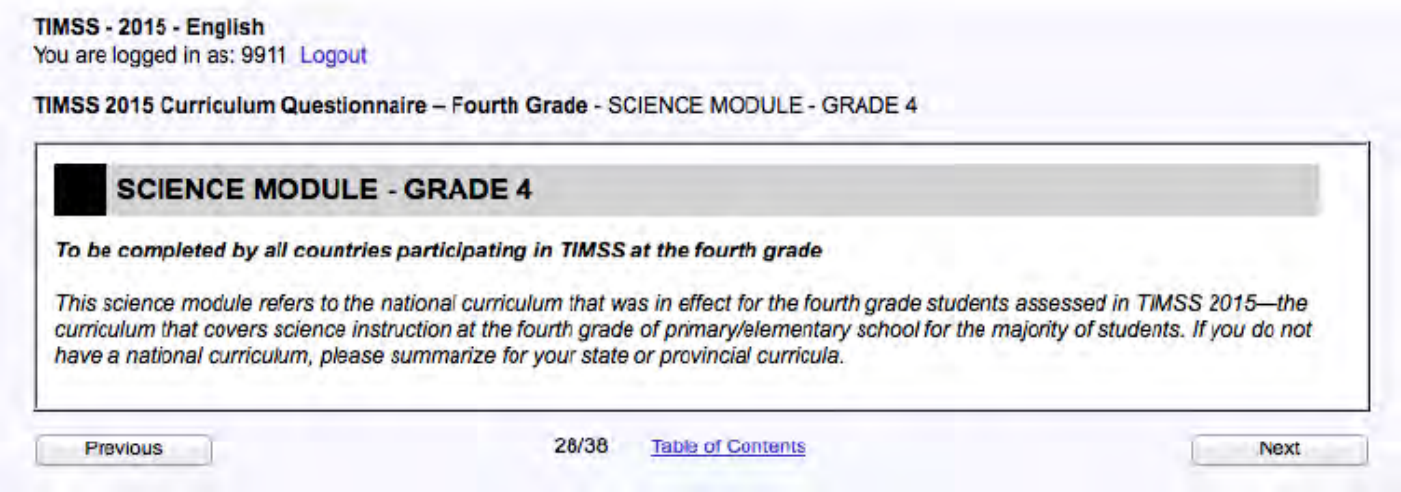

Exhibit D-4. TIMSS 2015 Grade 4 Curriculum Questionnaire—Continued

About the Fourth Grade Science Curriculum

This science module refers to the national curriculum that was in effect for the fourth grade students assessed in TIMSS 2015—the curriculum that covers science instruction at the fourth grade of primary/elementary school for the majority of students. If you do not have a national curriculum, please summarize for your state or provincial curricula.

S1. Does your country have a national curriculum that covers science instruction at the fourth grade of primary/elementary school?

*Check **one** circle only.*

- ○ Yes
- ○ No

If Yes…
Comments:

If No…
What is the highest level of decision-making authority (e.g., state or province) that provides a curriculum that covers science instruction at the fourth grade of primary/elementary school?

Exhibit D-4. TIMSS 2015 Grade 4 Curriculum Questionnaire—Continued

TIMSS - 2015 - English
You are logged in as: 9911 Logout

TIMSS 2015 Curriculum Questionnaire – Fourth Grade - About the Fourth Grade Science Curriculum

S2. A. In what year was the 2014/2015 science curriculum introduced?

Comments:

B. Is the science curriculum currently being revised?

*Check **one** circle only.*

- ◯ Yes
- ◯ No

If Yes…
Please explain:

Exhibit D-4. TIMSS 2015 Grade 4 Curriculum Questionnaire—Continued

Exhibit D-4. TIMSS 2015 Grade 4 Curriculum Questionnaire—Continued

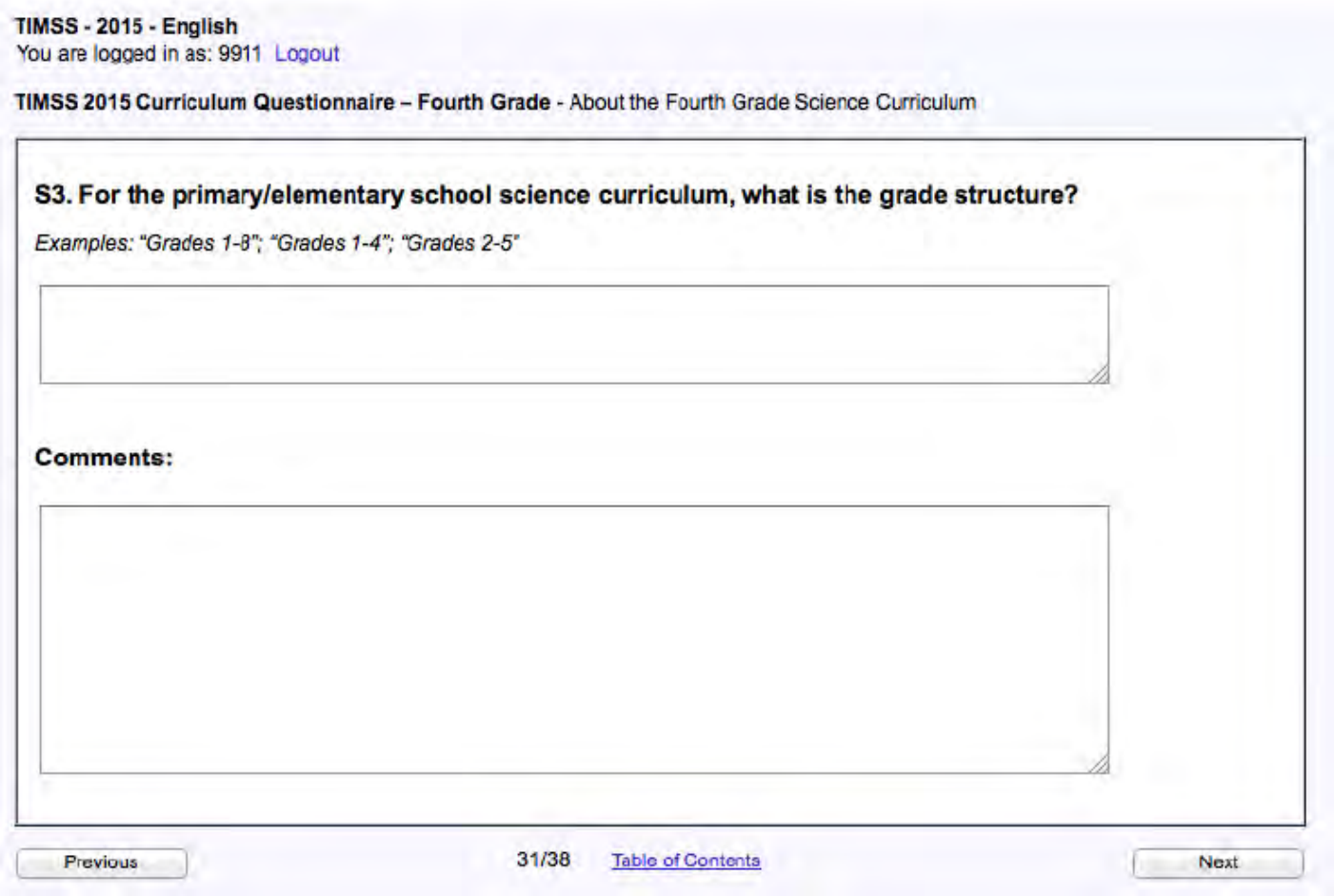

Exhibit D-4. TIMSS 2015 Grade 4 Curriculum Questionnaire—Continued

TIMSS - 2015 - English
You are logged in as: 9911 Logout

TIMSS 2015 Curriculum Questionnaire – Fourth Grade - Curriculum Specifications

Curriculum Specifications

This science module refers to the national curriculum that was in effect for the fourth grade students assessed in TIMSS 2015—the curriculum that covers science instruction at the fourth grade of primary/elementary school for the majority of students. If you do not have a national curriculum, please summarize for your state or provincial curricula.

S4. What does the science curriculum prescribe?

*Check **one** circle for each line.*

	Yes	No
a) Goals and objectives	○	○
b) Instructional processes or methods	○	○
c) Materials (e.g., textbooks, instructional materials)	○	○
d) Assessment methods/activities	○	○
e) Other Please specify below:	○	○

Comments:

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Exhibit D-4. TIMSS 2015 Grade 4 Curriculum Questionnaire—Continued

TIMSS - 2015 - English
You are logged in as: 9911 Logout

TIMSS 2015 Curriculum Questionnaire – Fourth Grade - Curriculum Specifications

S5. Does the curriculum or any other official document prescribe the percentage of total instructional time to be devoted to science instruction at the fourth grade of primary/elementary school?

Check one circle only.

- Yes
- No

If Yes…
Please specify the percentage:

Comments:

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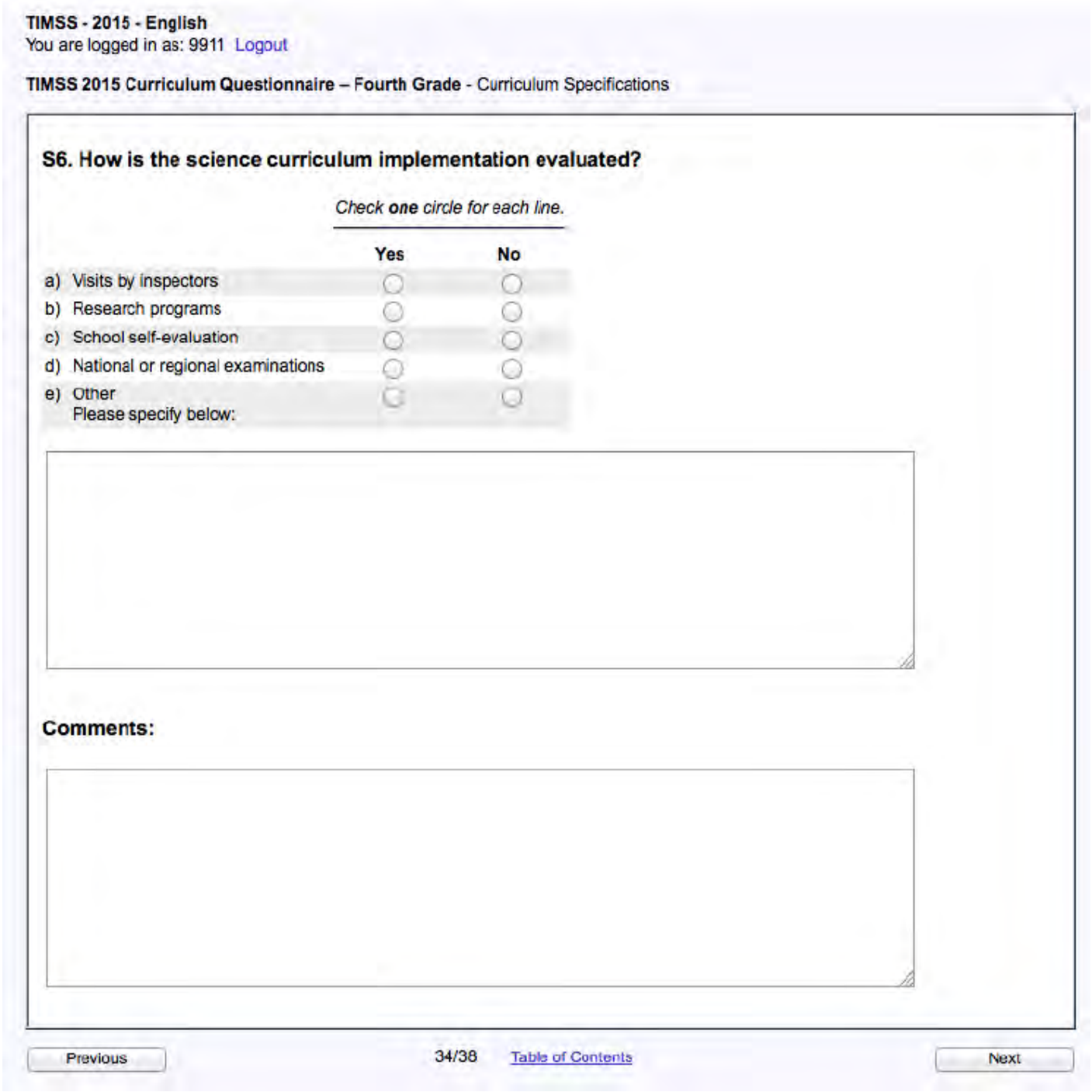
Exhibit D-4. TIMSS 2015 Grade 4 Curriculum Questionnaire—Continued



TIMSS - 2015 - English
You are logged in as: 9911 Logout

TIMSS 2015 Curriculum Questionnaire – Fourth Grade - Curriculum Specifications

S6. How is the science curriculum implementation evaluated?

*Check **one** circle for each line.*

	Yes	No
a) Visits by inspectors	○	○
b) Research programs	○	○
c) School self-evaluation	○	○
d) National or regional examinations	○	○
e) Other Please specify below:	○	○

Comments:

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Exhibit D-4. TIMSS 2015 Grade 4 Curriculum Questionnaire—Continued

TIMSS - 2015 - English
You are logged in as: 9911 Logout

TIMSS 2015 Curriculum Questionnaire – Fourth Grade - Instructional Materials and Use of Technology

Instructional Materials and Use of Technology

This science module refers to the national curriculum that was in effect for the fourth grade students assessed in TIMSS 2015—the curriculum that covers science instruction at the fourth grade of primary/elementary school for the majority of students. If you do not have a national curriculum, please summarize for your state or provincial curricula.

S7. A. Is there a process for approving the science instructional materials?

*Check **one** circle only.*

- ○ Yes
- ○ No

If Yes…
Please describe the process, and what materials (e.g., textbooks, workbooks, online materials) must be approved through this process:

B. Does the national curriculum contain statements/policies about the use of technology (e.g., computers, tablets, calculators) in grade 4 science instruction?

*Check **one** circle only.*

- ○ Yes
- ○ No

If Yes…
What are the statements/policies?

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Exhibit D-4. TIMSS 2015 Grade 4 Curriculum Questionnaire—Continued

Fourth Grade Science Topics Covered

This science module refers to the national curriculum that was in effect for the fourth grade students assessed in TIMSS 2015—the curriculum that covers science instruction at the fourth grade of primary/elementary school for the majority of students. If you do not have a national curriculum, please summarize for your state or provincial curricula.

S8. (i) According to the national science curriculum, what proportion of grade 4 students should have been taught each of the following topics or skills by the end of grade 4?

Be sure to include curriculum expectations for all grades up to and including grade 4. Grades represent years of formal schooling. For example, if "Year 5" in your country corresponds to the fourth year of formal schooling, please choose grade 4.

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

If there are not any specifications to this detail, please indicate national expectations to the best of your ability. If part of a topic does not apply [e.g., birds in part A topic (a)], please explain in the comment field.

	(i) Proportion of grade 4 students expected to be taught topic *Check **one** circle for each line.*			(ii) Grade(s) topic is expected to be taught preprimary (PP) through the end of upper secondary (G12) *Check the corresponding grade(s) for each topic*												
A. Life Science	**All or almost all students**	**Only the more able students**	**Not included in the curriculum through grade 4**	**PP**	**G1**	**G2**	**G3**	**G4**	**G5**	**G6**	**G7**	**G8**	**G9**	**G10**	**G11**	**G12**
a) Characteristics of living things and the major groups of living things (e.g., mammals, birds, insects, flowering plants)	○	○	○	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
b) Major body structures and their functions in humans, other animals, and plants	○	○	○	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
c) Life cycles of common plants and animals (e.g., humans, butterflies, frogs, flowering plants)	○	○	○	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
d) Understanding that some characteristics are inherited and some are the result of the environment	○	○	○	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
e) How physical features and behaviors help living things survive in their environments	○	○	○	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
f) Relationships in communities and ecosystems (e.g., simple food chains, predator-prey relationships, human impacts on the environment)	○	○	○	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
g) Human health (transmission and prevention of diseases, symptoms of health and illness, importance of a healthy diet and exercise)	○	○	○	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Exhibit D-4. TIMSS 2015 Grade 4 Curriculum Questionnaire—Continued

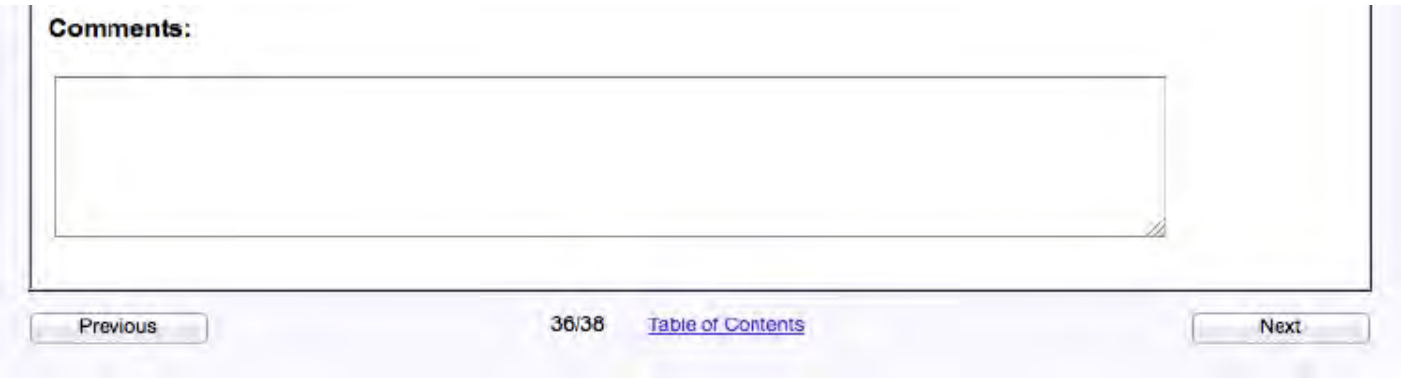

Exhibit D-4. TIMSS 2015 Grade 4 Curriculum Questionnaire—Continued

TIMSS - 2015 - English
You are logged in as: 9911 Logout

TIMSS 2015 Curriculum Questionnaire – Fourth Grade - Fourth Grade Science Topics Covered

S8. (continued)

(i) According to the national science curriculum, what proportion of grade 4 students should have been taught each of the following topics or skills by the end of grade 4?

Be sure to include curriculum expectations for all grades up to and including grade 4. Grades represent years of formal schooling. For example, if "Year 5" in your country corresponds to the fourth year of formal schooling, please choose grade 4.

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

If there are not any specifications to this detail, please indicate national expectations to the best of your ability. If part of a topic does not apply [e.g., birds in part A topic (a)], please explain in the comment field.

	(i) Proportion of grade 4 students expected to be taught topic			(ii) Grade(s) topic is expected to be taught preprimary (PP) through the end of upper secondary (G12)												
	*Check **one** circle for each line.*			*Check the corresponding grade(s) for each topic*												
B. Physical Science	**All or almost all students**	**Only the more able students**	**Not included in the curriculum through grade 4**	**PP**	**G1**	**G2**	**G3**	**G4**	**G5**	**G6**	**G7**	**G8**	**G9**	**G10**	**G11**	**G12**
a) States of matter (solid, liquid, gas) and properties of the states of matter (volume, shape); how the state of matter changes by heating or cooling	○	○	○	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
b) Classifying materials based on physical properties (e.g., weight/mass, volume, conducting heat, conducting electricity, magnetic attraction)	○	○	○	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
c) Mixtures and how to separate a mixture into its components (e.g., sifting, filtering, evaporation, using a magnet)	○	○	○	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
d) Chemical changes in everyday life (e.g., decaying, burning, rusting, cooking)	○	○	○	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Exhibit D-4. TIMSS 2015 Grade 4 Curriculum Questionnaire—Continued

e) Common sources of energy (e.g., the Sun, electricity, wind) and uses of energy (heating and cooling homes, providing light)	○	○	○	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
f) Light and sound in everyday life (e.g., understanding shadows and reflection, understanding that vibrating objects make sound)	○	○	○	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
g) Electricity and simple circuits (e.g., identifying materials that are conductors, recognizing that electricity can be changed to light or sound, knowing that a circuit must be complete to work correctly)	○	○	○	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
h) Properties of magnets (e.g., knowing that like poles repel and opposite poles attract, recognizing that magnets can attract some objects)	○	○	○	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
i) Forces that cause objects to move (e.g., gravity, pushing/pulling)	○	○	○	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

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Exhibit D-4. TIMSS 2015 Grade 4 Curriculum Questionnaire—Continued

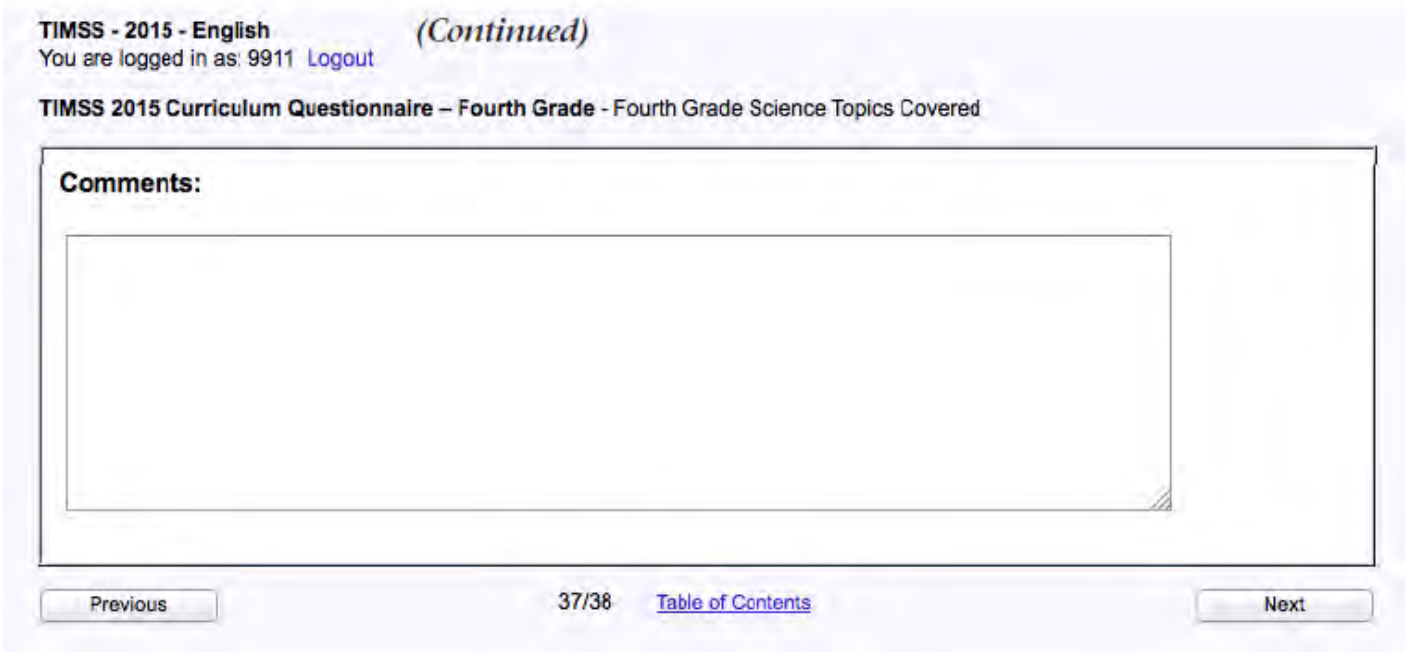

Exhibit D-4. TIMSS 2015 Grade 4 Curriculum Questionnaire—Continued

TIMSS 2015 Curriculum Questionnaire – Fourth Grade - Fourth Grade Science Topics Covered

S8. (continued)

(i) According to the national science curriculum, what proportion of grade 4 students should have been taught each of the following topics or skills by the end of grade 4?

Be sure to include curriculum expectations for all grades up to and including grade 4. Grades represent years of formal schooling. For example, if "Year 5" in your country corresponds to the fourth year of formal schooling, please choose grade 4.

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

If there are not any specifications to this detail, please indicate national expectations to the best of your ability. If part of a topic does not apply [e.g., birds in part A topic (a)], please explain in the comment field.

	(i) Proportion of grade 4 students expected to be taught topic			(ii) Grade(s) topic is expected to be taught preprimary (PP) through the end of upper secondary (G12)											
	*Check **one** circle for each line.*			*Check the corresponding grade(s) for each topic*											
C. Earth Science	**All or almost all students**	**Only the more able students**	**Not included in the curriculum through grade 4**	**PP**	**G1**	**G2**	**G3**	**G4**	**G5**	**G6**	**G7**	**G8**	**G9**	**G10**	**G11**	**G12**
a) Common features of the Earth's landscape (e.g., mountains, plains, deserts, rivers, oceans) and their relationship to human use (farming, irrigation, land development)	○	○	○	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
b) Where water is found on the Earth and how it moves in and out of the air (e.g., evaporation, rainfall, cloud formation, dew formation)	○	○	○	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
c) Understanding that weather can change from day to day, from season to season, and by geographic location	○	○	○	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
d) Understanding what fossils are and what they can tell us about past conditions on Earth	○	○	○	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
e) Objects in the solar system (the Sun, the Earth, the Moon, and other planets) and their movements (the Earth and other planets revolve around the Sun, the Moon revolves around the Earth)	○	○	○	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
f) Understanding how day and night result from the Earth's rotation on its axis and how the Earth's rotation results in changing shadows throughout the day	○	○	○	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
g) Understanding how seasons are related to the Earth's annual movement around the Sun	○	○	○	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Exhibit D-4. TIMSS 2015 Grade 4 Curriculum Questionnaire—Continued

Exhibit D-4. TIMSS 2015 Grade 4 Curriculum Questionnaire—Continued

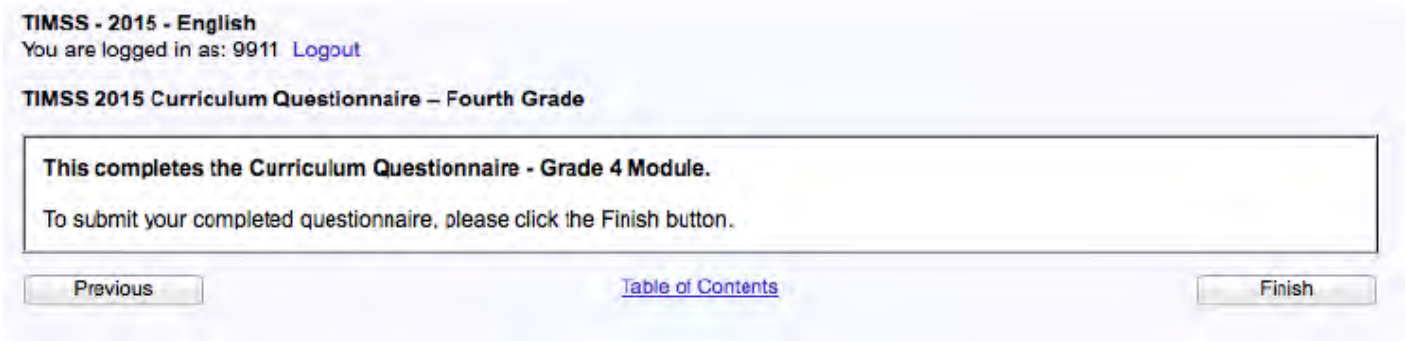

Exhibit D-4. TIMSS 2015 Grade 4 Curriculum Questionnaire—Continued

TIMSS 2015

Place Label Here

School ID ____ ____ ____ ____

Checksum ___ ___ ___ ___ ___

TRENDS IN INTERNATIONAL MATHEMATICS AND SCIENCE STUDY

School Questionnaire

Grade 8

National Center for Education Statistics
U.S. Department of Education
1990 K St. NW
Washington, DC 20006-5650

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

U.S. participation in this study is sponsored by the National Center for Education Statistics (NCES), U.S. Department of Education, and authorized by the Education Sciences Reform Act of 2002 (20 U.S.C., § 9543). Your responses are protected by federal statute (20 U.S.C., § 9573) and 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.

According to the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless such collection displays a valid OMB control number. The valid OMB control number for this voluntary information collection is 1850-0695. The time required to complete this information collection is estimated to average 30 minutes per respondent, including the time to review instructions, search existing data resources, gather the data needed, and complete and review the information collection. **If you have any comments concerning the accuracy of the time estimate(s), suggestions for improving the form, or comments or concerns regarding the status of your individual submission of this form, write directly to:** Trends in International Mathematics and Science Study (TIMSS), National Center for Education Statistics, U.S. Department of Education, 1990 K Street, N.W., Washington, D.C. 20006. OMB No. 1850-0695, Approval Expires 9/30/2017.
869864 Printed in the USA by Pearson ISD10750

School *Questionnaire*

Your school has agreed to participate in TIMSS 2015 (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 almost 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 eighth-grade 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.

When you have completed the questionnaire, please place it in the accompanying envelope and return it to the TIMSS school coordinator.

NCES is authorized to collect information from the questionnaire under the Education Science Reform Act of 2002 (ESRA 2002), 20 U.S. Code, § 9543. You do not have to provide the information requested. However, the information you provide will help the U.S. Department of Education's ongoing efforts to understand better how the educational system in the United States compares to that in other countries. There are no penalties should you choose not to participate in this study. Your answers 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. Code, § 9573). Your response will be combined with those from other participants to produce summary statistics and reports.

This survey is estimated to take an average of 30 minutes, including time for reviewing instructions, and completing and reviewing the collection of information. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing burden, to: Stephen Provasnik, National Center for Education Statistics, U.S. Department of Education, 1990 K Street NW, Room 8123, Washington, DC 20006-5650. Do not return the completed form to this address.

Thank you.

TIMSS 2015

School Enrollment and Characteristics

1

What is the total enrollment of students in your school as of March 1, 2015?

_____ students
Write in the number.

2

What is the total enrollment of <u>eighth-grade</u> students in your school as of March 1, 2015?

_____ students
Write in the number.

3

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

*Fill in only **one** circle for each row.*

	0 to 10%	11 to 25%	26 to 50%	More than 50%
a) Come from economically disadvantaged homes	①	②	③	④
b) Come from economically affluent homes	①	②	③	④

4

Around the 1st of October 2014, 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
Write in the number.

5

Approximately what percentage of students in your school have English as their native language?

*Fill in **one** circle only.*

More than 90% --- ①
76 to 90% --- ②
51 to 75% --- ③
26 to 50% --- ④
25% or less --- ⑤

6

Of the students currently enrolled in your school, what percentage has been identified as limited-English proficient (LEP)/English language learners (ELL)?

*Fill in **one** circle only.*

0% -- ①
1 - 5% -- ②
6 - 10% -- ③
11 - 25% -- ④
26 - 50% -- ⑤
51 - 75% -- ⑥
76 - 90% -- ⑦
Over 90% -- ⑧

7

What type of school is this?

*Fill in **one** circle only.*

- Regular public school - 1
- A regular public school with a magnet program - 2
- A magnet school or school with a special program emphasis (e.g., Montessori, science/math school, performing arts school, talented/gifted school, foreign language immersion school) - 3
- Special education: a school that primarily serves students with disabilities - 4
- Alternative: a school designed to address the needs of students, typically at risk of educational failure, which cannot be met in regular schools - 5
- Vocational - 6
- Charter School - 7
- Private (independent) - 8
- Private (religiously affiliated) - 9
- Other - 0

8

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

*Fill in **one** circle only.*

- More than 500,000 people --- 1
- 100,001 to 500,000 people --- 2
- 50,001 to 100,000 people --- 3
- 30,001 to 50,000 people --- 4
- 15,001 to 30,000 people --- 5
- 3,001 to 15,000 people --- 6
- 3,000 people or fewer --- 7

B. Which best describes the immediate area in which your school is located?

*Fill in **one** circle only.*

- Urban–Densely populated --- 1
- Suburban–On fringe or outskirts of urban area --- 2
- Medium size city or large town --- 3
- Small town or village --- 4
- Remote rural --- 5

9

Which best characterizes the average income level of the school's immediate area?

*Fill in **one** circle only.*

- High --- 1
- Medium --- 2
- Low --- 3

10

Does your school provide free meals for students?

*Fill in only **one** circle for each row.*

	Yes, for all students	Yes, for some students	No
a) Breakfast	1	2	3
b) Lunch	1	2	3

Instructional Time

11

For the eighth-grade students in your school:

A. How many <u>days per year</u> is your school open for instruction?

_____ days
Write in the number.

B. What is the <u>total instructional time</u>, excluding breaks, in a <u>typical day</u>?

_____ hours _____ minutes
Write in the number of hours and minutes per day.

C. In one <u>calendar week</u>, how many days is the school open for instruction?

*Fill in **one** circle only.*

- 6 days --- ①
- 5 1/2 days --- ②
- 5 days --- ③
- 4 1/2 days --- ④
- 4 days --- ⑤
- Other --- ⑥

12

A. Does your school provide a place where students can work on their schoolwork before or after school?

*Fill in **one** circle only.*

- Yes --- ①
- No --- ② → **(If No, go to question 13)**

If Yes,

B. Is someone available to assist them with their schoolwork?

*Fill in **one** circle only.*

- Yes --- ①
- No --- ②

13

As a general school policy, is student achievement used to assign eighth-grade students to classes (e.g., streaming, tracking, setting)?

*Fill in only **one** circle for each row.*

	Yes	No
a) For mathematics classes	①	②
b) For science classes	①	②

Resources and Technology

14

How many computers (including tablets) does your school have for use by eighth-grade students?

_____ computers
Write in the number.

15

A. Does your school have a science laboratory that can be used by eighth-grade students?

*Fill in **one** circle only.*

Yes --- ①
No --- ②

B. Do teachers usually have assistance available when students are conducting science experiments?

*Fill in **one** circle only.*

Yes --- ①
No --- ②

16

Does your school have a school library?

*Fill in **one** circle only.*

Yes --- ①
No --- ② → **(If No, go to question 17)**

If Yes,

A. <u>Approximately</u> how many books (print and digital) with different titles does your school library have (exclude magazines and periodicals)?

*Fill in only **one** circle in each column.*

	Print	Digital
250 or fewer	①	①
251–500	②	②
501–2,000	③	③
2,001–5,000	④	④
5,001–10,000	⑤	⑤
More than 10,000	⑥	⑥

B. <u>Approximately</u> how many titles of magazines and other periodicals (print and digital) does your school library have?

*Fill in only **one** circle in each column.*

	Print	Digital
0	①	①
1–5	②	②
6–10	③	③
11–30	④	④
31 or more	⑤	⑤

17

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

*Fill in only **one** circle for each row.*

	Not at all	A little	Some	A lot
A. General School Resources				
a) Instructional materials (e.g., textbooks)	1	2	3	4
b) Supplies (e.g., papers, pencils, materials)	1	2	3	4
c) School buildings and grounds	1	2	3	4
d) Heating/cooling and lighting systems	1	2	3	4
e) Instructional space (e.g., classrooms)	1	2	3	4
f) Technologically competent staff	1	2	3	4
g) Audio-visual resources for delivery of instruction (e.g., interactive white boards, digital projectors)	1	2	3	4
h) Computer technology for teaching and learning (e.g., computers or tablets for student use)	1	2	3	4
i) Resources for students with disabilities	1	2	3	4

*Fill in only **one** circle for each row.*

	Not at all	A little	Some	A lot
B. Resources for Mathematics Instruction				
a) Teachers with a specialization in mathematics	1	2	3	4
b) Computer software/ applications for mathematics instruction	1	2	3	4
c) Library resources relevant to mathematics instruction	1	2	3	4
d) Calculators for mathematics instruction	1	2	3	4
e) Concrete objects or materials to help students understand quantities or procedures	1	2	3	4
C. Resources for Science Instruction				
a) Teachers with a specialization in science	1	2	3	4
b) Computer software/ applications for science instruction	1	2	3	4
c) Library resources relevant to science instruction	1	2	3	4
d) Calculators for science instruction	1	2	3	4
e) Science equipment and materials for experiments	1	2	3	4

School Emphasis on Academic Success

18

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

*Fill in only **one** circle for each row.*

	Very high	High	Medium	Low	Very low
a) Teachers' understanding of the school's curricular goals	1	2	3	4	5
b) Teachers' degree of success in implementing the school's curriculum	1	2	3	4	5
c) Teachers' expectations for student achievement	1	2	3	4	5
d) Teachers working together to improve student achievement	1	2	3	4	5
e) Teachers' ability to inspire students	1	2	3	4	5
f) Parental involvement in school activities	1	2	3	4	5
g) Parental commitment to ensure that students are ready to learn	1	2	3	4	5
h) Parental expectations for student achievement	1	2	3	4	5
i) Parental support for student achievement	1	2	3	4	5
j) Parental pressure for the school to maintain high academic standards	1	2	3	4	5
k) Students' desire to do well in school	1	2	3	4	5
l) Students' ability to reach school's academic goals	1	2	3	4	5
m) Students' respect for classmates who excel in school	1	2	3	4	5

School Discipline and Safety

19

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

*Fill in only **one** circle for each row.*

	Not a problem	Minor problem	Moderate problem	Serious problem
a) Arriving late at school	1	2	3	4
b) Absenteeism (i.e., unjustified absences)	1	2	3	4
c) Classroom disturbance	1	2	3	4
d) Cheating	1	2	3	4
e) Profanity	1	2	3	4
f) Vandalism	1	2	3	4
g) Theft	1	2	3	4
h) Intimidation or verbal abuse among students (including texting, emailing, etc.)	1	2	3	4
i) Physical injury to other students	1	2	3	4
j) Intimidation or verbal abuse of teachers or staff (including texting, emailing, etc.)	1	2	3	4
k) Physical injury to teachers or staff	1	2	3	4

Teachers in Your School

20

In your school, are any of the following used to evaluate the practice of eighth-grade mathematics teachers?

*Fill in only **one** circle for each row.*

	Yes	No
a) Observations by the principal or senior staff	1	2
b) Observations by inspectors or other persons external to the school	1	2
c) Student achievement	1	2
d) Teacher peer review	1	2

21

In your school, are any of the following used to evaluate the practice of eighth-grade science teachers?

*Fill in only **one** circle for each row.*

	Yes	No
a) Observations by the principal or senior staff	1	2
b) Observations by inspectors or other persons external to the school	1	2
c) Student achievement	1	2
d) Teacher peer review	1	2

22

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

*Fill in only **one** circle for each row.*

	Were no vacancies in this subject	Easy to fill vacancies	Somewhat difficult	Very difficult
a) Mathematics	1	2	3	4
b) Science	1	2	3	4
c) Other	1	2	3	4

23

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

*Fill in only **one** circle for each row.*

	Yes	No
a) Mathematics	1	2
b) Science	1	2
c) Other	1	2

24

To what degree is each of the following a problem among teachers in your school?

*Fill in only **one** circle for each row.*

	Not a problem	Minor problem	Moderate problem	Serious problem
a) Arriving late or leaving early	1	2	3	4
b) Absenteeism	1	2	3	4

Principal Experience and Education

25

By the end of this school year, how many years altogether will you have been a principal?

_____ years
*Please **round** to the nearest whole number.*

26

By the end of this school year, how many years will you have been a principal at this school?

_____ years
*Please **round** to the nearest whole number.*

27

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

*Fill in **one** circle only.*

- Did not complete Bachelor's degree (4-year college program) --- ①
- Bachelor's degree (4-year college program) --- ②
- Master's degree or professional degree (MD, DDS, lawyer, minister) --- ③
- Doctorate (Ph.D., or Ed.D.) --- ④

28

Do you hold the following degrees in educational leadership?

*Fill in only **one** circle for each row.*

	Yes	No
a) Master's degree or professional degree (MD, DDS, lawyer, minister)	①	②
b) Doctorate (Ph.D., or Ed.D.)	①	②

Thank You

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

BOSTON COLLEGE

TIMSS 2015

TRENDS IN INTERNATIONAL MATHEMATICS AND SCIENCE STUDY

School Questionnaire

Grade 8

International Association for the Evaluation of Educational Achievement

timss.bc.edu

TIMSS 2015

Place Label Here

School ID: ____ ____ ____ ____

Class ID: ____ ____ ____ ____ ____ ____

Teacher ID: ____ ____ ____ ____ ____ ____

Link #: ____ ____ Subject: ____ ____

Checksum: ____ ____ ____ ____ ____

TRENDS IN INTERNATIONAL MATHEMATICS AND SCIENCE STUDY

Teacher Questionnaire Mathematics

Grade 8

National Center for Education Statistics
U.S. Department of Education
1990 K St. NW
Washington, DC 20006-5650

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

U.S. participation in this study is sponsored by the National Center for Education Statistics (NCES), U.S. Department of Education, and authorized by the Education Sciences Reform Act of 2002 (20 U.S.C., § 9543). Your responses are protected by federal statute (20 U.S.C., § 9573) and 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.

According to the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless such collection displays a valid OMB control number. The valid OMB control number for this voluntary information collection is 1850-0695. The time required to complete this information collection is estimated to average 30 minutes per respondent, including the time to review instructions, search existing data resources, gather the data needed, and complete and review the information collection. **If you have any comments concerning the accuracy of the time estimate(s), suggestions for improving the form, or comments or concerns regarding the status of your individual submission of this form, write directly to:** Trends in International Mathematics and Science Study (TIMSS), National Center for Education Statistics, U.S. Department of Education, 1990 K Street, N.W., Washington, D.C. 20006. OMB No. 1850-0695, Approval Expires 9/30/2017.

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Teacher *Questionnaire*

Your school has agreed to participate in TIMSS 2015 (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 almost 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 eighth-grade 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 on the front of this booklet and that 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 30 minutes to complete this questionnaire. We appreciate the time and effort that this takes and thank you for your cooperation and contribution.

When you have completed the questionnaire, please return it to the TIMSS school coordinator.

NCES is authorized to collect information from the questionnaire under the Education Science Reform Act of 2002 (ESRA 2002), 20 U.S. Code, § 9543. You do not have to provide the information requested. However, the information you provide will help the U.S. Department of Education's ongoing efforts to understand better how the educational system in the United States compares to that in other countries. There are no penalties should you choose not to participate in this study. Your answers 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. Code, § 9573). Your response will be combined with those from other participants to produce summary statistics and reports.

This survey is estimated to take an average of 30 minutes, including time for reviewing instructions, and completing and reviewing the collection of information. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing burden, to: Stephen Provasnik, National Center for Education Statistics, U.S. Department of Education, 1990 K Street NW, Room 8123, Washington, DC 20006-5650. Do not return the completed form to this address.

Thank you.

TIMSS 2015

About You

1 **What year did you start teaching?**

_____
Please write in a year.

2 **At the end of this school year, how many years will you have taught altogether?**

_____ years
*Please **round** to the nearest whole number.*

3 **Are you female or male?**

*Fill in **one** circle only.*

Female --- ①
Male --- ②

4 **How old are you?**

*Fill in **one** circle only.*

Under 25 --- ①
25–29 --- ②
30–39 --- ③
40–49 --- ④
50–59 --- ⑤
60 or more --- ⑥

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

*Fill in **one** circle only.*

Did not complete high school --- ①
High school graduate --- ②

(If you have not completed more than high school, go to question 7)

Associate's degree (2-year college program) --- ③
Bachelor's degree (4-year college program) --- ④
Master's degree or professional degree (MD, DDS, lawyer, minister) --- ⑤
Doctorate (Ph.D., or Ed.D.) --- ⑥

6 **During your college or university education, what was your major or main area(s) of study?**

*Fill in only **one** circle for each row.*

	Yes	No
a) Mathematics	①	②
b) Biology	①	②
c) Physics	①	②
d) Chemistry	①	②
e) Earth Science	①	②
f) Education–Mathematics	①	②
g) Education–Science	①	②
h) Education–General	①	②
i) Other	①	②

School Emphasis on Academic Success

7

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

*Fill in only **one** circle for each row.*

	Very high	High	Medium	L ow	Very low
a) Teachers' understanding of the school's curricular goals	①	②	③	④	⑤
b) Teachers' degree of success in implementing the school's curriculum	①	②	③	④	⑤
c) Teachers' expectations for student achievement	①	②	③	④	⑤
d) Teachers working together to improve student achievement	①	②	③	④	⑤
e) Teachers' ability to inspire students	①	②	③	④	⑤
f) Parental involvement in school activities	①	②	③	④	⑤
g) Parental commitment to ensure that students are ready to learn	①	②	③	④	⑤
h) Parental expectations for student achievement	①	②	③	④	⑤
i) Parental support for student achievement	①	②	③	④	⑤
j) Parental pressure for the school to maintain high academic standards	①	②	③	④	⑤

*Fill in only **one** circle for each row.*

	Very high	High	Medium	L ow	Very low
k) Students' desire to do well in school	①	②	③	④	⑤
l) Students' ability to reach school's academic goals	①	②	③	④	⑤
m) Students' respect for classmates who excel in school	①	②	③	④	⑤
n) Clarity of the school's educational objectives	①	②	③	④	⑤
o) Collaboration between school leadership and teachers to plan instruction	①	②	③	④	⑤
p) Amount of instructional support provided to teachers by school leadership	①	②	③	④	⑤
q) School leadership's support for teachers' professional development	①	②	③	④	⑤

School Environment

8

Thinking about your current school, indicate the extent to which you agree or disagree with each of the following statements.

*Fill in only **one** circle for each row.*

	Agree a lot	Agree a little	Disagree a little	Disagree a lot
a) This school is located in a safe neighborhood	1	2	3	4
b) I feel safe at this school	1	2	3	4
c) This school's security policies and practices are sufficient	1	2	3	4
d) The students behave in an orderly manner	1	2	3	4
e) The students are respectful of the teachers	1	2	3	4
f) The students respect school property	1	2	3	4
g) This school has clear rules about student conduct	1	2	3	4
h) This school's rules are enforced in a fair and consistent manner	1	2	3	4

9

In your current school, how severe is each problem?

*Fill in only **one** circle for each row.*

	Not a problem	Minor problem	Moderate problem	Serious problem
a) The school building needs significant repair	1	2	3	4
b) Teachers do not have adequate workspace (e.g., for preparation, collaboration, or meeting with students)	1	2	3	4
c) Teachers do not have adequate instructional materials and supplies	1	2	3	4
d) The school classrooms are not cleaned often enough	1	2	3	4
e) The school classrooms need maintenance work	1	2	3	4
f) Teachers do not have adequate technological resources	1	2	3	4
g) Teachers do not have adequate support for using technology	1	2	3	4

About Being a Teacher

10

How often do you have the following types of interactions with other teachers?

*Fill in only **one** circle for each row.*

	Very often	Often	Sometimes	Never or almost never
a) Discuss how to teach a particular topic	1	2	3	4
b) Collaborate in planning and preparing instructional materials	1	2	3	4
c) Share what I have learned about my teaching experiences	1	2	3	4
d) Visit another classroom to learn more about teaching	1	2	3	4
e) Work together to try out new ideas	1	2	3	4
f) Work as a group on implementing the curriculum	1	2	3	4
g) Work with teachers from other grades to ensure continuity in learning	1	2	3	4

11

How often do you feel the following way about being a teacher?

*Fill in only **one** circle for each row.*

	Very often	Often	Sometimes	Never or almost never
a) I am content with my profession as a teacher	1	2	3	4
b) I am satisfied with being a teacher at this school	1	2	3	4
c) I find my work full of meaning and purpose	1	2	3	4
d) I am enthusiastic about my job	1	2	3	4
e) My work inspires me	1	2	3	4
f) I am proud of the work I do	1	2	3	4
g) I am going to continue teaching for as long as I can	1	2	3	4

12

Indicate the extent to which you agree or disagree with each of the following statements.

*Fill in only **one** circle for each row.*

	Agree a lot	Agree a little	Disagree a little	Disagree a lot
a) There are too many students in the classes	1	2	3	4
b) I have too much material to cover in class	1	2	3	4
c) I have too many teaching hours	1	2	3	4
d) I need more time to prepare for class	1	2	3	4
e) I need more time to assist individual students	1	2	3	4
f) I feel too much pressure from parents	1	2	3	4
g) I have difficulty keeping up with all of the changes to the curriculum	1	2	3	4
h) I have too many administrative tasks	1	2	3	4

About Teaching the TIMSS Class

Questions 13 -16 ask about instruction for the <u>eighth-grade</u> students in the TIMSS class.

13

How many students are in this class?

_____ students
Write in the number.

14

How many eighth-grade students experience difficulties understanding <u>spoken</u> English?

_____ students in this class
Write in the number.

15

How often do you do the following in teaching this class?

*Fill in only **one** circle for each row.*

	Every or almost every lesson	About half the lessons	Some lessons	Never
a) Relate the lesson to students' daily lives	1	2	3	4
b) Ask students to explain their answers	1	2	3	4
c) Ask students to complete challenging exercises that require them to go beyond the instruction	1	2	3	4
d) Encourage classroom discussions among students	1	2	3	4
e) Link new content to students' prior knowledge	1	2	3	4
f) Ask students to decide their own problem solving procedures	1	2	3	4
g) Encourage students to express their ideas in class	1	2	3	4

16

In your view, to what extent do the following limit how you teach this class?

*Fill in only **one** circle for each row.*

	Not at all	Some	A lot
a) Students lacking prerequisite knowledge or skills	1	2	3
b) Students suffering from lack of basic nutrition	1	2	3
c) Students suffering from not enough sleep	1	2	3
d) Disruptive students	1	2	3
e) Uninterested students	1	2	3
f) Students with physical disabilities	1	2	3
g) Students with mental, emotional, or psychological disabilities	1	2	3

Teaching Mathematics to the TIMSS Class

Questions 17 - 20 ask about mathematics instruction for the eighth-grade students in the TIMSS class.

17

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

_____ minutes per week

Write in the number of minutes per week.
Please convert the number of hours into minutes.

18

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

*Fill in only **one** circle for each row.*

	Very high	High	Medium	Low
a) Inspiring students to learn mathematics	1	2	3	4
b) Showing students a variety of problem solving strategies	1	2	3	4
c) Providing challenging tasks for the highest achieving students	1	2	3	4
d) Adapting my teaching to engage students' interest	1	2	3	4
e) Helping students appreciate the value of learning mathematics	1	2	3	4
f) Assessing student comprehension of mathematics	1	2	3	4
g) Improving the understanding of struggling students	1	2	3	4
h) Making mathematics relevant to students	1	2	3	4
i) Developing students' higher-order thinking skills	1	2	3	4

19

In teaching mathematics to this class, how often do you ask students to do the following?

*Fill in only **one** circle for each row.*

	Every or almost every lesson	About half the lessons	Some lessons	Never
a) Listen to me explain new mathematics content	1	2	3	4
b) Listen to me explain how to solve problems	1	2	3	4
c) Memorize rules, procedures, and facts	1	2	3	4
d) Work problems (individually or with peers) with my guidance	1	2	3	4
e) Work problems together in the whole class with direct guidance from me	1	2	3	4
f) Work problems (individually or with peers) while I am occupied by other tasks	1	2	3	4
g) Work on problems for which there is no immediately obvious method of solution	1	2	3	4
h) Take a written test or quiz	1	2	3	4
i) Work in mixed ability groups	1	2	3	4
j) Work in same ability groups	1	2	3	4

20

Which best describes the mathematics course you are teaching to the class with the TIMSS students?

*Fill in **one** circle only.*

a) Basic or general eighth-grade math (not algebra or pre-algebra) ---------- ①

b) Pre-algebra or introduction to algebra ---------- ②

c) Two-year pre-algebra ---------- ③

d) Algebra I (one-year course) ---------- ④

e) Algebra I (first year of a two-year Algebra I course) ---------- ⑤

f) Algebra I (second year of two-year Algebra I course) ---------- ⑥

g) Geometry ---------- ⑦

h) Algebra II ---------- ⑧

i) Integrated or sequential math ---------- ⑨

j) Other math class ---------- ⓪

Using Calculators and Computers for Teaching Mathematics to the TIMSS Class

Questions 21 - 22 ask about resources for teaching mathematics to the <u>eighth-grade</u> students in the TIMSS class.

21

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

*Fill in **one** circle only.*

- Yes, with unrestricted use ---- ①
- Yes, with restricted use ---- ②
- No, calculators are not permitted ---- ③ → **(If No, go to question 22)**

If Yes,

B. How often do students in this class use calculators in their mathematics lessons for the following activities?

*Fill in only **one** circle for each row.*

	Every or almost every lesson	About half the lessons	Some lessons	Never
a) Check answers	①	②	③	④
b) Do routine computations	①	②	③	④
c) Solve complex problems	①	②	③	④
d) Explore number concepts	①	②	③	④

22

A. Do the students in this class have computers (including tablets) available to use during their mathematics lessons?

*Fill in **one** circle only.*

- Yes --- ①
- No --- ② → **(If No, go to question 23)**

If Yes,

B. What access do the students have to computers?

*Fill in only **one** circle for each row.*

	Yes	No
a) Each student has a computer	①	②
b) The class has computers that students can share	①	②
c) The school has computers that the class can use sometimes	①	②

C. How often do you have the students do the following activities on computers during mathematics lessons?

*Fill in only **one** circle for each row.*

	Every or almost every day	Once or twice a week	Once or twice a month	Never or almost never
a) Explore mathematics principles and concepts	①	②	③	④
b) Practice skills and procedures	①	②	③	④
c) Look up ideas and information	①	②	③	④
d) Process and analyze data	①	②	③	④

Mathematics Topics Taught to the TIMSS Class

Question 23 asks about the topics taught and the content covered in teaching mathematics to the eighth-grade students in the TIMSS class.

23

The following list includes the main topics addressed by the TIMSS mathematics test. Choose the response that best describes when the students in this class have been taught each topic. If a topic was in the curriculum before the eighth grade, please choose "Mostly taught before this year." If a topic was taught half this year but not yet completed, please choose "Mostly taught this year." If a topic is not in the curriculum, please choose "Not yet taught or just introduced."

*Fill in only **one** circle for each row.*

	Mostly taught before this year	Mostly taught this year or just introduced	Not yet taught
A. Number			
a) Computing with whole numbers	①	②	③
b) Comparing and ordering rational numbers	①	②	③
c) Computing with rational numbers (fractions, decimals, and integers)	①	②	③
d) Concepts of irrational numbers	①	②	③
e) Problem solving involving percents or proportions	①	②	③
B. Algebra			
a) Simplifying and evaluating algebraic expressions	①	②	③
b) Simple linear equations and inequalities	①	②	③
c) Simultaneous (two variables) equations	①	②	③
d) Numeric, algebraic, and geometric patterns or sequences (extension, missing terms, generalization of patterns)	①	②	③
e) Representation of functions as ordered pairs, tables, graphs, words, or equations	①	②	③
f) Properties of functions (slopes, intercepts, etc.)	①	②	③
C. Geometry			
a) Geometric properties of angles and geometric shapes (triangles, quadrilaterals, and other common polygons)	①	②	③
b) Congruent figures and similar triangles	①	②	③
c) Relationship between three-dimensional shapes and their two-dimensional representations	①	②	③
d) Using appropriate measurement formulas for perimeters, circumferences, areas, surface areas, and volumes	①	②	③
e) Points on the Cartesian plane	①	②	③
f) Translation, reflection, and rotation	①	②	③
D. Data and Chance			
a) Characteristics of data sets (mean, median, mode, and shape of distributions)	①	②	③
b) Interpreting data sets (e.g., draw conclusions, make predictions, and estimate values between and beyond given data points)	①	②	③
c) Judging, predicting, and determining the chances of possible outcomes	①	②	③

Mathematics Homework for the TIMSS Class

Question 24 asks about mathematics homework for the eighth-grade students in the TIMSS class.

24

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

*Fill in **one** circle only.*

- I do not assign mathematics homework ---- ① → **(Go to question 25)**
- Less than once a week ---- ②
- 1 or 2 times a week ---- ③
- 3 or 4 times a week ---- ④
- Every day ---- ⑤

B. When you assign mathematics homework to the students in this class, about how many minutes do you usually assign? (Consider the time it would take an average student in your class.)

*Fill in **one** circle only.*

- 15 minutes or less ---- ①
- 16–30 minutes ---- ②
- 31–60 minutes ---- ③
- 61–90 minutes ---- ④
- More than 90 minutes ---- ⑤

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

*Fill in only **one** circle for each row.*

	Always or almost always	Sometimes	Never or almost never
a) Correct assignments and give feedback to students	①	②	③
b) Have students correct their own homework	①	②	③
c) Discuss the homework in class	①	②	③
d) Monitor whether or not the homework was completed	①	②	③
e) Use the homework to contribute towards students' grades or marks	①	②	③

Mathematics Assessment of the TIMSS Class

Question 25 asks about mathematics assessment for the eighth-grade students in the TIMSS class.

25

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

*Fill in only **one** circle for each row.*

	Major emphasis	Some emphasis	Little or no emphasis
a) Assessment of students' ongoing work	①	②	③
b) Classroom tests (for example, teacher-made or textbook tests)	①	②	③
c) State or district achievement tests	①	②	③

Preparation to Teach Mathematics

26

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

*Fill in only **one** circle for each row.*

	Yes	No
a) Mathematics content	1	2
b) Mathematics pedagogy/instruction	1	2
c) Mathematics curriculum	1	2
d) Integrating information technology into mathematics	1	2
e) Improving students' critical thinking or problem solving skills	1	2
f) Mathematics assessment	1	2
g) Addressing individual students' needs	1	2

27

In the past two years, how many hours in total have you spent in formal in-service/professional development (e.g., workshops, seminars) for mathematics?

*Fill in **one** circle only.*

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

28

How well prepared do you feel you are to teach the following mathematics topics?
If a topic is not in the eighth-grade curriculum or you are not responsible for teaching this topic, please choose "Not applicable."

*Fill in only **one** circle for each row.*

	Not applicable	Very well prepared	Somewhat prepared	Not well prepared
A. Number				
a) Computing with whole numbers	①	②	③	④
b) Comparing and ordering rational numbers	①	②	③	④
c) Computing with rational numbers (fractions, decimals, and integers)	①	②	③	④
d) Concepts of irrational numbers	①	②	③	④
e) Problem solving involving percents or proportions	①	②	③	④
B. Algebra				
a) Simplifying and evaluating algebraic expressions	①	②	③	④
b) Simple linear equations and inequalities	①	②	③	④
c) Simultaneous (two variables) equations	①	②	③	④
d) Numeric, algebraic, and geometric patterns or sequences (extension, missing terms, generalization of patterns)	①	②	③	④
e) Representation of functions as ordered pairs, tables, graphs, words, or equations	①	②	③	④
f) Properties of functions (slopes, intercepts, etc.)	①	②	③	④
C. Geometry				
a) Geometric properties of angles and geometric shapes (triangles, quadrilaterals, and other common polygons)	①	②	③	④
b) Congruent figures and similar triangles	①	②	③	④
c) Relationship between three-dimensional shapes and their two-dimensional representations	①	②	③	④
d) Using appropriate measurement formulas for perimeters, circumferences, areas, surface areas, and volumes	①	②	③	④
e) Points on the Cartesian plane	①	②	③	④
f) Translation, reflection, and rotation	①	②	③	④
D. Data and Chance				
a) Characteristics of data sets (mean, median, mode, and shape of distributions)	①	②	③	④
b) Interpreting data sets (e.g., draw conclusions, make predictions, and estimate values between and beyond given data points)	①	②	③	④
c) Judging, predicting, and determining the chances of possible outcomes	①	②	③	④

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Thank You

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

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BOSTON COLLEGE

TIMSS 2015

TRENDS IN INTERNATIONAL MATHEMATICS AND SCIENCE STUDY

Teacher Questionnaire Mathematics

Grade 8

International Association for the Evaluation of Educational Achievement

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