



School ID						Teacher ID #		Link #			
<input type="text"/>											
Class ID #1				Class ID #2		Class ID #3		Grade		Eligible Participation	
<input type="text"/>	<input type="text"/>										

IEA Third International Mathematics and Science Study - Repeat

# Science Teacher Questionnaire

## Main Survey

Name of Class: \_\_\_\_\_

Your school has agreed to participate in the Third International Mathematics and Science Study - Repeat (TIMSS-R), an educational research project sponsored by the International Association for the Evaluation of Educational Achievement (IEA). TIMSS-R is investigating mathematics and science achievement in about forty countries around the world. It is designed to measure and interpret differences in national education systems in order to help improve the teaching and learning of mathematics and science worldwide.

This questionnaire is addressed to teachers of science, who are asked to supply information about their academic and professional backgrounds, instructional practices, and attitudes towards teaching science. Since your class includes students selected as part of a nationwide sample, your responses are very important in helping to describe science classes in the United States.

Some of the questions in this questionnaire ask about a **particular science class that you teach**. This is the class which is identified at the top of this page, and which includes students who will be tested as part of TIMSS-R in your school.

It is important that you answer each question carefully so that the information provided reflects your situation as accurately as possible. It is estimated that it will require approximately 60 minutes to complete this questionnaire.

Your cooperation in completing this questionnaire is greatly appreciated.

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USA

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U.S. Department of Education  
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Washington, D.C. 20208

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## GENERAL DIRECTIONS:

1. Identify a place and a time when you will be able to complete this questionnaire without being interrupted. This questionnaire has been designed to be completed within 60 minutes by most teachers. However, the amount of time you will need may vary. To make it as easy as possible for you to respond, most items may be completed simply by checking the appropriate box.
2. There are no “right” or “wrong” answers to any of these items. The questionnaire is designed to provide information about teachers’ professional experiences, opinions, and classroom activities. **Remember, “your science class” is the class which is identified on the cover of this questionnaire, and which includes students who will be tested as part of TIMSS-R in your school.**
3. More specific instructions to assist you in responding are found in *italics* for each item. Once you have completed the questionnaire, please return it to the TIMSS-R Coordinator in your school.

Again, thank you for your time, effort, and thought in completing this questionnaire!

**THERE ARE NO QUESTIONS ON THIS PAGE.**

# Section A

## 1. How old are you?

*Check one box only.*

- under 25 .....
- 25-29 .....
- 30-39 .....
- 40-49 .....
- 50-59 .....
- 60 or more .....

## 2a. Are you female or male?

*Check one box only.*

- female .....
- male .....

## 2b. Which best describes you?

*Check one box only.*

- White (not Hispanic) .....
- Black (not Hispanic) .....
- Hispanic (“Hispanic” means someone who is Mexican, Mexican American, Chicano, Puerto Rican, Cuban, or from some other Spanish or Hispanic background.) .....
- Asian or Pacific Islander (“Asian or Pacific Islander” means someone who is Chinese, Japanese, Korean, Filipino, Vietnamese, Asian American, or from some other Asian or Pacific Island background.) .....
- American Indian or Alaskan Native (“American Indian or Alaskan Native” means someone who is from one of the American Indian tribes, or one of the original people of Alaska.) .....
- Other (specify) \_\_\_\_\_ .....

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

*Please round to the nearest whole number. ....* \_\_\_\_\_

4. **In one typical calendar week from Monday to Sunday, for how many single periods are you formally scheduled in one school week altogether?**

*Write in number.....* \_\_\_\_\_ *periods*

5. **In one typical calendar week from Monday to Sunday, for how many single periods are you formally scheduled to teach each of the following subjects?**

*Count a double period as two single periods.  
Write zero if none.*

*Number of  
single periods*

- a) mathematics ..... \_\_\_\_\_
- b) general science ..... \_\_\_\_\_
- c) other subjects ..... \_\_\_\_\_

6. **In one typical calendar week from Monday to Sunday, for how many single periods are you formally scheduled to perform each of the following tasks?**

*Count a double period as two single periods.  
Write zero if none.*

*Number of  
single periods*

- a) student supervision (other than teaching) ..... \_\_\_\_\_
- b) student counseling/appraisal ..... \_\_\_\_\_
- c) administrative duties ..... \_\_\_\_\_
- d) individual curriculum planning ..... \_\_\_\_\_
- e) cooperative curriculum planning ..... \_\_\_\_\_
- f) other non-student contact time (i.e., use not specified) ..... \_\_\_\_\_
- g) other ..... \_\_\_\_\_

7. **APPROXIMATELY** how many hours per week do you normally spend on each of the following activities outside the formal school day?  
Do not include time already accounted for in Question # 6.

*Check one box in each row.*

	<i>None</i>	<i>Less than 1 hour</i>	<i>1 - 2 hours</i>	<i>3 - 4 hours</i>	<i>More than 4 hours</i>
a) preparing or grading student tests or exams .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) reading and grading other student work .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) planning lessons by yourself.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) meeting with students outside of classroom time (e.g., tutoring, guidance).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) meeting with parents .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) professional reading and development activity (e.g., seminars, conferences, etc.) .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g) keeping students' records up to date.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h) administrative tasks including staff meetings (e.g., photocopying, displaying students' work).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i) other .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

8. **APPROXIMATELY** how many hours per week do you normally spend on your teaching activities altogether (include time spent in and out of school)?

*Please round to the nearest whole hour. ....* \_\_\_\_\_

**9. About how often do you have meetings with other teachers in your subject area to discuss and plan curriculum or teaching approaches?**

*Check one box only.*

- never .....
- once or twice a year .....
- every other month .....
- once a month .....
- once a week .....
- two or three times a week .....
- almost every day .....

**10. How much influence do you have on each of the following...**

*Check one box in each row.*

- |  | <i>None</i>              | <i>Little</i>            | <i>Some</i>              | <i>A lot</i>             |
|--|--------------------------|--------------------------|--------------------------|--------------------------|
| a) subject matter to be taught .....                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b) specific textbooks to be used .....               | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c) the amount of money to be spent on supplies ..... | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d) what supplies are purchased .....                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

**11. To be good at science at school, how important do you think it is for students to...**

*Check one box in each row.*

- |  | <i>Not important</i>     | <i>Somewhat important</i> | <i>Very important</i>    |
|--|--------------------------|---------------------------|--------------------------|
| a) remember formulas and procedures .....                        | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> |
| b) think in a sequential and procedural manner .....             | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> |
| c) understand science concepts, principles, and strategies ..... | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> |
| d) be able to think creatively .....                             | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> |
| e) understand how science is used in the real world .....        | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> |
| f) be able to provide reasons to support their conclusions       | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> |

**12. To what extent do you agree or disagree with each of the following statements?**

*Check one box in each row.*

	<i>Strongly disagree</i>	<i>Disagree</i>	<i>Agree</i>	<i>Strongly agree</i>
a) Science is primarily an abstract subject. ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Science is primarily a formal way of representing the real world. ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Science is primarily a practical and structured guide for addressing real situations. ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Some students have a natural talent for science and others do not. ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) It is important for teachers to give students prescriptive and sequential directions for doing science experiments. ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) Focusing on rules is a bad idea. It gives students the impression that the sciences (physics, chemistry, biology, and earth science) are a set of procedures to be memorized. ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g) If students get into debates in class about ideas or procedures covering the sciences, it can harm their learning. ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h) Students see a science task as the same task when it is represented in two different ways (picture, concrete material, symbol set, etc.). ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i) A liking for and understanding of students are essential for teaching science. ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**13. Indicate your familiarity with each of the following documents:***Check one box in each row.*

	<i>No such document</i>	<i>Not familiar</i>	<i>Fairly familiar</i>	<i>Very familiar</i>
--	-----------------------------	-------------------------	----------------------------	--------------------------

- |   |                          |                          |                          |                          |
|---|--------------------------|--------------------------|--------------------------|--------------------------|
| a) American Association for the<br>Advancement of Science (AAAS)<br>Benchmarks for Science Literacy .....   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b) State Education Department Curriculum Guide ..   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c) School District Curriculum Guide .....   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d) School Curriculum Guide .....  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e) The National Assessment of Educational<br>Progress (NAEP) Assessment Frameworks/<br>Specifications ..... | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| f) State Education Department<br>Assessment Specifications .....  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

**14. How well prepared do you feel you are to teach...***Check one box in each row.*

	<i>I do not teach these topics</i>	<i>Not well prepared</i>	<i>Somewhat prepared</i>	<i>Very well prepared</i>
--	--	----------------------------------	------------------------------	-----------------------------------

- |  |                          |                          |                          |                          |
|--|--------------------------|--------------------------|--------------------------|--------------------------|
| a) earth science – earth’s features<br>and physical processes? .....                       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b) earth science – the solar system and<br>the universe? .....                             | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c) biology – structure and function of<br>human systems? .....                             | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d) biology – diversity, structure, and processes<br>of plant and animal life? .....        | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e) chemistry – classification and structure of matter?                                     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| f) chemistry – chemical reactivity<br>and transformations? .....                           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| g) physics – types of energy, sources of energy,<br>conversion between energy types? ..... | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| h) physics – light? .....  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| i) environmental and resource issues? .....  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| j) scientific methods and inquiry skills? .....  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

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

*Check one box only.*

- Did not complete secondary school .....
- Secondary school only .....
- Bachelor's degree or equivalent .....
- Master's degree or PhD .....

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**16a. Do you have a teacher training certificate?**

*Check one box only.* ..... Yes  No

**16b. How many years of pre-service teacher training have you had?**

*Please round to the nearest whole number.* ..... \_\_\_\_\_  
*(Write in 0 (zero), if you have not had any teacher training.)*

**16c. If you have had pre-service teacher training, did you begin this training in secondary school?**

*Check one box only.* ..... Yes  No

**17. While studying to obtain your bachelor's degree or equivalent, what was your major or main area of study?**

I do not have a bachelor's degree or equivalent. ....   
*(Check the box and skip to the next question.)*

*Check one box in each row.*

	<i>Yes</i>	<i>No</i>
a) Mathematics .....	<input type="checkbox"/>	<input type="checkbox"/>
b) Biology .....	<input type="checkbox"/>	<input type="checkbox"/>
c) Physics .....	<input type="checkbox"/>	<input type="checkbox"/>
d) Chemistry .....	<input type="checkbox"/>	<input type="checkbox"/>
e) Education .....	<input type="checkbox"/>	<input type="checkbox"/>
f) Mathematics Education .....	<input type="checkbox"/>	<input type="checkbox"/>
g) Science Education .....	<input type="checkbox"/>	<input type="checkbox"/>
h) Other .....	<input type="checkbox"/>	<input type="checkbox"/>

**18. If you have a master's degree, what was your major or main area of study?**

I do not have a master's degree. ....   
*(Check the box and skip to the next question.)*

*Check one box in each row.*

	<i>Yes</i>	<i>No</i>
a) Mathematics .....	<input type="checkbox"/>	<input type="checkbox"/>
b) Biology .....	<input type="checkbox"/>	<input type="checkbox"/>
c) Physics .....	<input type="checkbox"/>	<input type="checkbox"/>
d) Chemistry .....	<input type="checkbox"/>	<input type="checkbox"/>
e) Education .....	<input type="checkbox"/>	<input type="checkbox"/>
f) Mathematics Education .....	<input type="checkbox"/>	<input type="checkbox"/>
g) Science Education .....	<input type="checkbox"/>	<input type="checkbox"/>
h) Other .....	<input type="checkbox"/>	<input type="checkbox"/>

## Section B

In this section, many of the questions refer to **a particular science class that you teach**. Please remember that this is the class which is identified on the cover of this questionnaire, and which includes students who will be tested as part of TIMSS-R in your school.

**1. How many students are in your science class?***Write in a number for each. Write 0 (zero) if there are none.*

boys \_\_\_\_\_ girls \_\_\_\_\_

**2. What subject matter do you emphasize most in your science class?***Check **one** box only.*

- General/integrated science .....
- Earth science .....
- Biology .....
- Chemistry .....
- Physics .....
- Physical science (chemistry/physics) .....
- Other, please specify \_\_\_\_\_ .....

**3. How many minutes per week do you teach science to your science class?***Write in the number of minutes.*

Minutes: \_\_\_\_\_

**4a. Do you use a textbook in teaching science to your class?***Check **one** box.*Yes  No **4b. If yes, approximately what percentage of your weekly science teaching time is based on your science textbook?***Check **one** box.*

- 0-25% .....
- 26-50% .....
- 51-75% .....
- 76-100% .....

**5. Do the students in your science class have calculators available to use during science lessons?**

*Check one box only.*

Yes  No

**6. To what extent are the students in your science class permitted to use calculators in science lessons?**

*Check one box only.*

- unrestricted use .....
- restricted use .....
- calculators are not permitted .....

**7. How often do students in your science class use calculators for the following activities?**

*Check one box in each row.*

	<i>Almost every class</i>	<i>Once or twice a week</i>	<i>Once or twice a month</i>	<i>Never, or hardly ever</i>
a) Checking answers .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Tests and exams .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Routine computation .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Solving complex problems .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Exploring number concepts .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**8. Do the students in your science class have computers available to use during science lessons?**

*Check one box in each row.*

	<i>Never or almost never</i>	<i>Some lessons</i>	<i>Most lessons</i>	<i>Every lesson</i>
a) in the classroom .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) in other instructional rooms (computer labs, science lab, reading lab, library, etc.) .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**If computers are available,**

	<i>Yes</i>	<i>No</i>
c) do any of the computers have access to the Internet? .....	<input type="checkbox"/>	<input type="checkbox"/>
d) do you use the Internet for instructional/educational purposes? .....	<input type="checkbox"/>	<input type="checkbox"/>

**9. In planning science lessons, what is your main source of written information when...**

*Check one box in each row.*

	<i>State or District Examination Specifications</i>					
	<i>State or School District Curriculum Guide</i>					
	<i>School Curriculum Guide</i>					
	<i>Teacher Edition of Textbook</i>					
	<i>Student Edition of Textbook</i>					
	<i>Other Resource Books</i>					
a) deciding which topics to teach (goals).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) deciding how to present a topic .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) selecting problems and exercises for work in class and homework .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) selecting problems and applications for assessment and evaluation .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**10. In your science lessons, how often do you usually ask students to do the following?**

*Check one box in each row.*

	<i>Never or almost never</i>	<i>Some lessons</i>	<i>Most lessons</i>	<i>Every lesson</i>
a) explain the reasoning behind an idea .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) represent and analyze relationships using tables, charts, or graphs .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) work on problems for which there is no immediately obvious method of solution .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) use computers to solve exercises or problems .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) write explanations about what was observed and why it happened .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) put events or objects in order and give a reason for the organization .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g) use graphing calculators to solve exercises or problems .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**11. In science lessons, how often do students...***Check one box in each row.*

	<i>Never or almost never</i>	<i>Some lessons</i>	<i>Most lessons</i>	<i>Every lesson</i>
a) work individually without assistance from the teacher .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) work individually with assistance from the teacher .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) work together as a class with the teacher teaching the whole class .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) work together as a class with students responding to one another .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) work in pairs or small groups without assistance from the teacher .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) work in pairs or small groups with assistance from the teacher .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**12. In a typical month of lessons in your science class, what percentage of time is spent on each of the following activities?***Write in a percentage for each activity.**The total should add to 100%.*

a) administrative tasks (not related to lesson's content/purpose) .....	_____%
b) homework review .....	_____%
c) lecture-style presentation by teacher .....	_____%
d) teacher-guided student practice .....	_____%
e) re-teaching and clarification of content/procedures .....	_____%
f) student independent practice .....	_____%
g) tests and quizzes .....	_____%
h) teacher demonstrations of experiments .....	_____%
i) students conducting experiments .....	_____%
j) other .....	_____%

13. The following list includes the main topics addressed by the TIMSS-R science test. Check the response that describes when students in your class have been taught each topic.

*If a topic has been taught before this year and also in the current year, check the two boxes that apply. Otherwise, check **one** box in **each** row.*

	<i>Taught before this year</i>	<i>Taught 1-5 periods this year</i>	<i>Taught more than 5 periods this year</i>	<i>Not yet taught</i>	<i>I do not know</i>
<b>a) Earth Science</b>					
1) Earth's physical features (layers, landforms, bodies of water, rocks, soil) .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2) Earth's atmosphere (layers, composition, temperature, pressure) .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3) Earth processes and history (weather and climate, physical cycles, plate tectonics, fossils) .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4) Earth in the solar system and the universe (interactions between Earth, sun, and moon; relationship to planets and stars) .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>b) Biology</b>					
5) Human body - structure and function of organs and systems .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6) Human bodily processes (metabolism, respiration, digestion) .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7) Human nutrition, health, and disease .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8) Biology of plant and animal life (diversity, structure, life processes, life cycles) .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9) Interactions of living things (biomes and ecosystems, interdependence) .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10) Reproduction, genetics, evolution, and speciation .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>c) Chemistry</b>					
11) Classification of matter (elements, compounds, solutions, mixtures) .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12) Structure of matter (atoms, ions, molecules, crystals) .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13) Chemical reactivity and transformations (definition of chemical change, oxidation, combustion) .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14) Energy and chemical change (exothermic and endothermic reactions, reaction rates) .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

If a topic has been taught before this year and also in the current year, check the two boxes that apply. Otherwise, check **one** box in **each** row.

	<i>Taught before this year</i>	<i>Taught 1-5 periods this year</i>	<i>Taught more than 5 periods this year</i>	<i>Not yet taught</i>	<i>I do not know</i>
<b>d) Physics</b>					
15) Physical properties and physical changes of matter (weight, mass, states of matter, boiling, freezing).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16) Subatomic particles (protons, electrons, neutrons) .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17) Energy types, sources, and conversions (chemical, kinetic, electric, light energy; work and efficiency) .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18) Heat and temperature .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19) Wave phenomena, sound, and vibration .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20) Light .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21) Electricity and magnetism.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22) Forces and motion (types of forces, balanced/unbalanced forces, fluid behavior, speed, acceleration) .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>e) Environmental and Resource Issues</b>					
23) Pollution (acid rain, global warming, ozone layer, water pollution) .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24) Conservation of natural resources (land, water, forests, energy sources).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25) Food supply and production, population, and environmental effects of natural and man-made events .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>f) Nature of Science and Scientific Inquiry Skills</b>					
26) Scientific method (formulating hypotheses, making observations, drawing conclusions, generalizing).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27) Experimental design (experimental control, materials, and procedures) .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28) Scientific measurements (reliability, replication, experimental error, accuracy, scales) .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29) Using scientific apparatus and conducting routine experimental operations .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
30) Gathering, organizing, and representing data (units, tables, charts, graphs) .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
31) Describing and interpreting data .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**14. In your view to what extent do the following limit how you teach your science class?**

*Check one box in each row.*

	<i>Not at all</i>	<i>A little</i>	<i>Quite a lot</i>	<i>A great deal</i>
a) students with different academic abilities .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) students who come from a wide range of backgrounds, (e.g., economic, language) .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) students with special needs, (e.g., hearing, vision, speech impairment, physical disabilities, mental or emotional/psychological impairment) .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) uninterested students .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) disruptive students .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) parents interested in their children's learning and progress .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g) parents uninterested in their children's learning and progress .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h) shortage of computer hardware .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i) shortage of computer software .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j) shortage of other instructional equipment for students' use .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k) shortage of equipment for your use in demonstrations and other exercises .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
l) inadequate physical facilities .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
m) high student/teacher ratio .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
n) low morale among fellow teachers/administrators .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
o) low morale among students .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
p) threat(s) to personal safety or the safety of students .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**15. How often do you usually assign science homework?**

*Check one box.*

- never .....
- less than once a week .....
- once or twice a week .....
- 3 or 4 times a week .....
- every day .....

***If “never,” please skip ahead to Question 19.***

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**16. If you assign science homework, how many minutes of science homework do you usually assign your students?**

*(Consider the time it would take an average student in your class.)*

*Check one box.*

- less than 15 minutes .....
- 15-30 minutes .....
- 31-60 minutes .....
- 61-90 minutes .....
- more than 90 minutes .....

**17. If you assign science homework, how often do you assign each of the following kinds of tasks?**

*Check one box in each row.*

	<i>Never</i>	<i>Rarely</i>	<i>Sometimes</i>	<i>Always</i>
a) worksheets or workbook .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) problem/question sets in textbook .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) reading in a textbook or supplementary materials .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) writing definitions or other short writing assignment .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) small investigation(s) or gathering data .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) working individually on long term projects or experiments .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g) working as a small group on long term projects or experiments .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h) finding one or more uses of the content covered .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i) preparing oral reports either individually or as a small group .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j) keeping a journal .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**18. If students are assigned written science homework, how often do you do the following?**

I do not assign written homework. ....

(Check the box and skip to the next question.)

Check *one* box in *each* row.

	<i>Never</i>	<i>Rarely</i>	<i>Sometimes</i>	<i>Always</i>
a) record whether or not the homework was completed .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) collect, correct and keep assignments .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) collect, correct assignments and then return to students .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) give feedback on homework to whole class .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) have students correct their own assignments in class .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) have students exchange assignments and correct them in class .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g) use it as a basis for class discussion .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h) use it to contribute towards students' grades or marks .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**19. In assessing the work of the students in your science class, how much weight do you give each of the following types of assessment?**

Check *one* box in *each* row.

	<i>None</i>	<i>Little</i>	<i>Quite a lot</i>	<i>A great deal</i>
a) standardized tests produced outside the school ...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) teacher-made short answer or essay tests that require students to describe or explain their reasoning .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) teacher-made multiple choice, true-false and matching tests .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) how well students do on homework assignments .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) how well students do on projects or practical/laboratory exercises .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) observations of students .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g) responses of students in class .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**20. How often do you use the assessment information you gather from students to...**

*Check one box in each row.*

	<i>None</i>	<i>Little</i>	<i>Quite a lot</i>	<i>A great deal</i>
a) provide students' grades or marks? .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) provide feedback to students? .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) diagnose students' learning problems? .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) report to parents? .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) assign students to different programs or tracks? .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) plan for future lessons? .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

# Section C

## Professional Development Activities

The following questions ask about **professional development** you have participated in **related to your science teaching**.

**THERE ARE NO QUESTIONS ON THIS PAGE**

1. **Since the beginning of the school year 1998, how many complete class periods *did you* observe other teachers in your school teach science?**

*Write in number ..... \_\_\_\_\_ class periods*  
*(Write zero (0), if none.)*

- 
2. **Since the beginning of the school year 1998, how many complete class periods *did other classroom teachers* in your school observe you teach science?**

*Write in number ..... \_\_\_\_\_ class periods*  
*(Write zero (0), if none.)*

3. Since June 1998, how many hours did you spend in each of the following types of professional development related to your science teaching? Do not report professional development in subjects other than science, but *do report professional development* on general teaching methods applicable to all subjects (e.g., cooperative learning, diversity, or the use of technology.) Treat the types of professional development as *mutually exclusive*. For example, if you attended a workshop conference, please report the hours either as a workshop or as a conference, but not both.

*Write in  
Number of hours  
Write 0  
(zero) if none.*

- a) *Within-district workshops or institutes*, focused on a specific topic, provided by or within the district (For private schools, include workshops offered by the school.) ..... \_\_\_\_\_
- b) *Courses for college credit* ..... \_\_\_\_\_
- c) *Out-of-district workshops and institutes*, focused on a specific topic, provided outside of the district (For private schools, include workshops offered outside the school.) ..... \_\_\_\_\_
- d) *Teacher collaboratives or networks*, connecting teachers regionally, state-wide, nationally, or internationally (do not include activities described in questions a through c.) ..... \_\_\_\_\_
- e) *Out-of-district conferences*, provided by professional organizations, regional centers, the state department of education, etc. .... \_\_\_\_\_
- f) *Immersion or internship activities*, in which a teacher spends a concentrated period of time working in a lab or industrial setting with professionals in his subject area. .... \_\_\_\_\_
- g) *Receiving mentoring, coaching, lead teaching, or observation*, in a one-on-one situation, usually in the classroom. .... \_\_\_\_\_
- h) *Teacher resource center*, which provides professional development materials and is staffed by a lead or resource teacher. .... \_\_\_\_\_
- i) *Committees or task forces* focusing on curriculum, instruction, or student assessment. .... \_\_\_\_\_
- j) *Teacher study groups* that meet regularly, in face-to-face meetings, to further your knowledge in your discipline or of pedagogical approaches. .... \_\_\_\_\_
- k) Other forms of *organized* professional development related to your science teaching. (Do not include reading or other work you have done on your own.) Specify \_\_\_\_\_

4. **Since June 1998 through the present, how many hours did you spend in each of the following types of *individual* professional development related to your science teaching? Again, do not report on professional development specific to other subjects.**

*Write in  
Number of hours*

*Write 0  
(zero) if none.*

- a) *Individual research project*, in which you examine your own teaching and your students' learning. ....
- b) *Individual learning*, in which you read journals or other professional publications, browse the internet, etc. ....
- c) Other forms of *individual* professional development related to your science teaching (specify) .....

5. **Overall, to what extent did the professional development you have participated in since June 1998, emphasize each of the following topics?**

*Check one box in each row.*

	<i>None</i>	<i>Little</i>	<i>Quite a lot</i>	<i>A great deal</i>
a) Curriculum (e.g., units, texts, standards) .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Subject-specific teaching methods in science (e.g., methods of teaching fractions or equations) .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) General teaching methods (e.g., cooperative learning or classroom management techniques) ..	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Approaches to assessment .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Use of technology in instruction (e.g., computers, graphing calculators) .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) Strategies for teaching diverse student populations (e.g., students with disabilities, from underrepresented populations, economically disadvantaged, range of abilities) ..	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g) Information on how students learn science .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h) Deepening your knowledge of science .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i) Leadership development .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j) Other: (please specify) .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

6. Did the professional development you participated in since June 1998, focus on developing your capacity to teach any of the following *curriculum content* areas?

*Check one box in each row.*

	<i>Yes</i>	<i>No</i>
a) Earth Science .....	<input type="checkbox"/>	<input type="checkbox"/>
b) Biology .....	<input type="checkbox"/>	<input type="checkbox"/>
c) Chemistry .....	<input type="checkbox"/>	<input type="checkbox"/>
d) Physics .....	<input type="checkbox"/>	<input type="checkbox"/>
e) Environmental and resource issues .....	<input type="checkbox"/>	<input type="checkbox"/>
f) Nature of science and scientific inquiry skills .....	<input type="checkbox"/>	<input type="checkbox"/>

**THANK YOU** for the thought, time, and effort you have put into completing this questionnaire.

**THERE ARE NO QUESTIONS ON THIS PAGE**