Section Two

Science Teacher Questionnaire

Science Questionnaire

STQ Tables
2000 National Survey of Science and Mathematics Education

Science Questionnaire

You have been selected to answer questions about your science instruction. If you do not currently teach science, please call us toll-free at 1-800-937-8288.

How to Complete the Questionnaire

Most of the questions instruct you to "darken one" answer or "darken all that apply." For a few questions, you are asked to write in your answer on the line provided. Please use a #2 pencil or blue or black pen to complete this questionnaire. Darken ovals completely, but do not stray into adjacent ovals. Be sure to erase or white out completely any stray marks.

Class Selection

Part of the questionnaire (sections C and D) asks you to provide information about instruction in a particular class. If you teach science to more than one class, use the label at the right to determine the science class that has been randomly selected for you to answer about. (If your teaching schedule varies by day, use today’s schedule, or if today is not a school day, use the most recent school day.)

If You Have Questions

If you have questions about the study or any items in the questionnaire, call us toll-free at 1-800-937-8288.

Each participating school will receive a voucher for $50 worth of science and mathematics materials. The voucher will be augmented by $15 for each responding teacher. In addition, each participating school will receive a copy of the study’s results in the spring of 2001.

Thank you very much. Your participation is greatly appreciated. Please return the completed questionnaire to us in the postage-paid envelope:

2000 National Survey of Science and Mathematics Education
Westat
1650 Research Blvd.
TB120F
Rockville, MD  20850
A. Teacher Opinions

1. Please provide your opinion about each of the following statements. (Darken one oval on each line.)

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>No Opinion</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Students learn science best in classes with students of similar abilities.</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>b. The testing program in my state/district dictates what science content I teach.</td>
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<tr>
<td>c. I enjoy teaching science.</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>d. I consider myself a &quot;master&quot; science teacher.</td>
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<td></td>
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</tr>
<tr>
<td>e. I have time during the regular school week to work with my colleagues on science curriculum and teaching.</td>
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<td></td>
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</tr>
<tr>
<td>f. My colleagues and I regularly share ideas and materials related to science teaching.</td>
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</tr>
<tr>
<td>g. Science teachers in this school regularly observe each other teaching classes as part of sharing and improving instructional strategies.</td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>h. Most science teachers in this school contribute actively to making decisions about the science curriculum.</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

2a. How familiar are you with the National Science Education Standards, published by the National Research Council? (Darken one oval.)
- Not at all familiar, SKIP TO QUESTION 3
- Somewhat familiar
- Fairly familiar
- Very familiar

2b. Please indicate the extent of your agreement with the overall vision of science education described in the National Science Education Standards. (Darken one oval.)

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>No Opinion</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2c. To what extent have you implemented recommendations from the National Science Education Standards in your science teaching? (Darken one oval.)

<table>
<thead>
<tr>
<th>Not at all</th>
<th>To a minimal extent</th>
<th>To a moderate extent</th>
<th>To a great extent</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

B. Teacher Background

3. Please indicate how well prepared you currently feel to do each of the following in your science instruction. (Darken one oval on each line.)

<table>
<thead>
<tr>
<th>Task</th>
<th>Not Adequately Prepared</th>
<th>Somewhat Prepared</th>
<th>Fairly Well Prepared</th>
<th>Very Well Prepared</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Take students' prior understanding into account when planning curriculum and instruction</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Develop students' conceptual understanding of science</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. Provide deeper coverage of fewer science concepts</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. Make connections between science and other disciplines</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. Lead a class of students using investigative strategies</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Question 3 continues on next page...
3. continued...

f. Manage a class of students engaged in hands-on/project-based work

g. Have students work in cooperative learning groups

h. Listen/ask questions as students work in order to gauge their understanding

i. Use the textbook as a resource rather than the primary instructional tool

j. Teach groups that are heterogeneous in ability

k. Teach students who have limited English proficiency

l. Encourage and respond to student cultural diversity

m. Encourage students’ interest in science

n. Encourage participation of females in science

o. Encourage participation of minorities in science

p. Involve parents in the science education of their children

q. Use calculators/computers for drill and practice

r. Use calculators/computers for science learning games

s. Use calculators/computers to collect and/or analyze data

t. Use computers to demonstrate scientific principles

u. Use computers for laboratory simulations

v. Use the Internet in your science teaching for general reference

w. Use the Internet in your science teaching for data acquisition

x. Use the Internet in your science teaching for collaborative projects with classes/individuals in other schools

4a. Do you have each of the following degrees?

<table>
<thead>
<tr>
<th>Degree</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bachelors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Masters</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Doctorate</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

4b. Please indicate the subject(s) for each of your degrees.
(Darken all that apply.)

<table>
<thead>
<tr>
<th>Subject</th>
<th>Bachelors</th>
<th>Masters</th>
<th>Doctorate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biology/Life Science</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chemistry</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Earth/Space Science</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physics</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other science, please specify:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Science Education (any science discipline)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mathematics/Mathematics Education</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elementary Education</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Education (e.g., History Education, Special Education)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other, please specify:</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

PLEASE DO NOT WRITE IN THIS AREA

[SERIAL]
5. Which of the following college courses have you completed? Include both semester hour and quarter hour courses, whether graduate or undergraduate level. Include courses for which you received college credit, even if you took the course in high school. (Darken all that apply.)

**EDUCATION**
- General methods of teaching
- Methods of teaching science
- Instructional uses of computers/other technologies
- Supervised student teaching in science

**MATHEMATICS**
- College algebra/trigonometry/elementary functions
- Calculus
- Advanced calculus
- Differential equations
- Discrete mathematics
- Probability and statistics

**CHEMISTRY**
- General/introductory chemistry
- Analytical chemistry
- Organic chemistry
- Physical chemistry
- Quantum chemistry
- Biochemistry
- Other chemistry

**EARTH/SPACE SCIENCES**
- Introductory earth science
- Astronomy
- Geology
- Meteorology
- Oceanography
- Physical geography
- Environmental science
- Agricultural science

**LIFE SCIENCES**
- Introductory biology/life science
- Botany, plant physiology
- Cell biology
- Ecology
- Entomology
- Genetics, evolution
- Microbiology
- Anatomy/Physiology
- Zoology, animal behavior
- Other life science

**PHYSICS**
- Physical science
- General/introductory physics
- Electricity and magnetism
- Heat and thermodynamics
- Mechanics
- Modern or quantum physics
- Nuclear physics
- Optics
- Solid state physics
- Other physics

**OTHER**
- History of science
- Philosophy of science
- Science and society
- Electronics
- Engineering (Any)
- Integrated science
- Computer programming
- Other computer science

6. For each of the following subject areas, indicate the number of college semester and quarter courses you have completed. Count each course you have taken, regardless of whether it was a graduate or undergraduate course. If your transcripts are not available, provide your best estimates.

<table>
<thead>
<tr>
<th>Subject Area</th>
<th>Semester Courses</th>
<th>Quarter Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Life sciences</td>
<td>0 1 2 3 4 5 6 7 8</td>
<td>0 1 2 3 4 5 6 7 8</td>
</tr>
<tr>
<td>b. Chemistry</td>
<td>0 1 2 3 4 5 6 7 8</td>
<td>0 1 2 3 4 5 6 7 8</td>
</tr>
<tr>
<td>c. Physics/physical science</td>
<td>0 1 2 3 4 5 6 7 8</td>
<td>0 1 2 3 4 5 6 7 8</td>
</tr>
<tr>
<td>d. Earth/space science</td>
<td>0 1 2 3 4 5 6 7 8</td>
<td>0 1 2 3 4 5 6 7 8</td>
</tr>
<tr>
<td>e. Science education</td>
<td>0 1 2 3 4 5 6 7 8</td>
<td>0 1 2 3 4 5 6 7 8</td>
</tr>
<tr>
<td>f. Mathematics</td>
<td>0 1 2 3 4 5 6 7 8</td>
<td>0 1 2 3 4 5 6 7 8</td>
</tr>
</tbody>
</table>

7. Considering all of your undergraduate and graduate science courses, approximately what percentage were completed at each of the following types of institutions? (Darken one oval on each line.)

<table>
<thead>
<tr>
<th>Institution Type</th>
<th>0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Two-year college/community college/technical school</td>
<td></td>
</tr>
<tr>
<td>b. Four-year college/university</td>
<td></td>
</tr>
</tbody>
</table>
8. In what year did you last take a formal course for college credit in:
   (Please enter your answers in the spaces provided, then darken the corresponding oval in each column.)
   
   a. Science  
   b. The Teaching of Science  
   If you have never taken a course in the teaching of science, darken this oval and go to question 9.

9. What is the total amount of time you have spent on professional development in science or the teaching of science in the last 12 months? in the last 3 years? (Include attendance at professional meetings, workshops, and conferences, but do not include formal courses for which you received college credit or time you spent providing professional development for other teachers.) (Darken one oval in each column.)

<table>
<thead>
<tr>
<th>Hours of In-service Education</th>
<th>Last 12 months</th>
<th>Last 3 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Less than 6 hours</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>6-15 hours</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>16-35 hours</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>More than 35 hours</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

10. In the past 12 months, have you: (Darken one oval on each line.)

   a. Taught any in-service workshops in science or science teaching? ☐ Yes ☐ No
   b. Mentored another teacher as part of a formal arrangement that is recognized or supported by the school or district, not including supervision of student teachers? ☐ Yes ☐ No
   c. Received any local, state, or national grants or awards for science teaching? ☐ Yes ☐ No
   d. Served on a school or district science curriculum committee? ☐ Yes ☐ No
   e. Served on a school or district science textbook selection committee? ☐ Yes ☐ No

11. In the past 3 years, have you participated in any of the following activities related to science or the teaching of science? (Darken one oval on each line.)

   a. Taken a formal college/university science course. (Please do not include courses taken as part of your undergraduate degree.) ☐ Yes ☐ No
   b. Taken a formal college/university course in the teaching of science. (Please do not include courses taken as part of your undergraduate degree.) ☐ Yes ☐ No
   c. Observed other teachers teaching science as part of your own professional development (formal or informal). ☐ Yes ☐ No
   d. Met with a local group of teachers on a regular basis to study/discuss science teaching issues. ☐ Yes ☐ No
   e. Collaborated on science teaching issues with a group of teachers at a distance using telecommunications. ☐ Yes ☐ No
   f. Served as a mentor and/or peer coach in science teaching, as part of a formal arrangement that is recognized or supported by the school or district. (Please do not include supervision of student teachers.) ☐ Yes ☐ No
   g. Attended a workshop on science teaching. ☐ Yes ☐ No

Question 11 continues on next page...
11. continued...

h. Attended a national or state science teacher association meeting.  Yes No
i. Applied (or applying) for certification from the National Board for Professional Teaching Standards (NBPTS).  Yes No
j. Received certification from the National Board for Professional Teaching Standards (NBPTS).  Yes No

Questions 12a-12c ask about your professional development in the last 3 years. If you have been teaching for fewer than 3 years, please answer for the time that you have been teaching.

12a. Think back to 3 years ago. How would you rate your level of need for professional development in each of these areas at that time? (Darken one oval on each line.)

<table>
<thead>
<tr>
<th>Area</th>
<th>None Needed</th>
<th>Minor Need</th>
<th>Moderate Need</th>
<th>Substantial Need</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deepening my own science content knowledge</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Understanding student thinking in science</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learning how to use inquiry/investigation-oriented teaching strategies</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learning how to use technology in science instruction</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learning how to assess student learning in science</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learning how to teach science in a class that includes students with special needs</td>
<td></td>
<td></td>
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</tbody>
</table>

12b. Considering all the professional development you have participated in during the last 3 years, how much was each of the following emphasized? (Darken one oval on each line.)

<table>
<thead>
<tr>
<th>Area</th>
<th>Not at all</th>
<th>To a great extent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deepening my own science content knowledge</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Understanding student thinking in science</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learning how to use inquiry/investigation-oriented teaching strategies</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learning how to use technology in science instruction</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learning how to assess student learning in science</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learning how to teach science in a class that includes students with special needs</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

12c. Considering all your professional development in the last 3 years, how would you rate its impact in each of these areas? (Darken one oval on each line.)

<table>
<thead>
<tr>
<th>Area</th>
<th>Little or no impact</th>
<th>Confirmed what I was already doing</th>
<th>Caused me to change my teaching practices</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deepening my own science content knowledge</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Understanding student thinking in science</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learning how to use inquiry/investigation-oriented teaching strategies</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learning how to use technology in science instruction</td>
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</tr>
<tr>
<td>Learning how to assess student learning in science</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learning how to teach science in a class that includes students with special needs</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

13a. Do you teach in a self-contained class? (i.e., you teach multiple subjects to the same class of students all or most of the day.) Yes, CONTINUE WITH QUESTIONS 13b AND 13c  No, SKIP TO QUESTION 14

13b. For teachers of self-contained classes: Many teachers feel better qualified to teach some subject areas than others. How well qualified do you feel to teach each of the following subjects at the grade level(s) you teach, whether or not they are currently included in your curriculum? (Darken one oval on each line.)

<table>
<thead>
<tr>
<th>Subject</th>
<th>Not Well Qualified</th>
<th>Adequately Qualified</th>
<th>Very Well Qualified</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Life science</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Earth science</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. Physical science</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. Mathematics</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. Reading/Language Arts</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>f. Social Studies</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>g. Art</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>h. Music</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
13c. **For teachers of self-contained classes**: We are interested in knowing how much time your students spend studying various subjects. In a typical week, how many days do you have lessons on each of the following subjects, and how many minutes long is an average lesson? *(Please indicate "0" if you do not teach a particular subject to this class.)* Please enter your answer in the spaces provided, then darken the corresponding oval in each column. Enter the number of minutes as a 3-digit number; e.g., if 30 minutes, enter as 030.)

<table>
<thead>
<tr>
<th>Subject</th>
<th>Days Per Week</th>
<th>Approximate Minutes Per Day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathematics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Science</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social Studies</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reading/Language Arts</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NOW GO TO SECTION C, PAGE 8.

14. Which of these categories best describes the way your classes at this school are organized? (Darken one oval.)

- a. **Departmentalized Instruction**—you teach subject matter courses (including science, and perhaps other courses) to several different classes of students all or most of the day.
- b. **Elementary Enrichment Class**—you teach only science in an elementary school.
- c. **Team Teaching**—you collaborate with one or more teachers in teaching multiple subjects to the same class of students; your assignment includes science.

15a. **For teachers of non-self-contained classes**: Within science, many teachers feel better qualified to teach some topics than others. How well qualified do you feel to teach each of the following topics at the grade level(s) you teach, whether or not they are currently included in your curriculum? (Darken one oval on each line.)

<table>
<thead>
<tr>
<th>Topic</th>
<th>Not Well Qualified</th>
<th>Adequately Qualified</th>
<th>Very Well Qualified</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Earth science</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Earth’s features and physical processes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. The solar system and the universe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. Climate and weather</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Biology</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Structure and function of human systems</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Plant biology</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. Animal behavior</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. Interactions of living things/ecology</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. Genetics and evolution</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Chemistry</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Structure of matter and chemical bonding</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Properties and states of matter</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. Chemical reactions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. Energy and chemical change</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Question 15a continues on next page...*
15a. continued...

4. Physics
   a. Forces and motion
   b. Energy
   c. Light and sound
   d. Electricity and magnetism
   e. Modern physics (e.g., special relativity)

5. Environmental and resource issues
   a. Pollution, acid rain, global warming
   b. Population, food supply and production

6. Science process/inquiry skills
   a. Formulating hypotheses, drawing conclusions, making generalizations
   b. Experimental design
   c. Describing, graphing, and interpreting data

15b. For teachers of non-self-contained classes: For each class period you are currently teaching, regardless of the subject, give course title, the code-number from the enclosed blue "List of Course Titles" that best describes the content addressed in the class, and the number of students in the class. (Please enter your answers in the spaces provided, then darken the corresponding oval in each column. If you teach more than one section of a course, record each section separately below.)

- Note that if you have more than 39 students in any class, you will not be able to darken the ovals, but you should still write the number in the boxes.

- If you teach more than 6 classes per day, please provide the requested information for the additional classes on a separate sheet of paper.
C. Your Science Teaching in a Particular Class

The questions in this section are about a particular science class you teach. If you teach science to more than one class per day, please consult the label on the front of this questionnaire to determine which science class to use to answer these questions.

16. Using the blue "List of Course Titles," indicate the code number that best describes this course. Please enter your answer in the spaces to the right, then darken the corresponding oval in each column. (If "other" [Code 199], briefly describe content of course:
____________________________________________________________________________
____________________________________________________________________________
____________________________________________________________________________)

17a. Are all students in this class in the same grade?

☐ Yes, specify grade:
   THEN SKIP TO QUESTION 18a

☐ No, CONTINUE WITH QUESTION 17b

17b. What grades are represented in this class? (Darken all that apply.) For each grade noted, indicate the number of students in this class in that grade. Write your answer in the space provided, then darken the corresponding oval in each column. Note that if more than 39 students in this class are in a single grade, you will not be able to darken the ovals, but you should still write the number in the boxes.

18a. What is the total number of students in this class? Write your answer in the space provided, then darken the corresponding oval in each column. Note that if you have more than 39 students in this class, you will not be able to darken the ovals, but you should still write the number in the boxes.
18b. Please indicate the number of students in each of the following categories. Consult the enclosed federal guidelines at the end of the course list (blue sheet) if you have any questions about how to classify particular students. (Please enter your answers in the spaces provided, then darken the corresponding oval in each column.)

<table>
<thead>
<tr>
<th>RACE/ETHNICITY</th>
<th>Native Hawaiian or Other Pacific Islander</th>
<th>White</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Indian or Alaskan Native</td>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td>Asian</td>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td>Black or African-American</td>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td>Hispanic or Latino (any race)</td>
<td>Male</td>
<td>Female</td>
</tr>
</tbody>
</table>

19a. Questions 19a and 19b apply only to teachers of non-self-contained classes. If you teach a self-contained class, please darken this oval and skip to question 20. What is the usual schedule and length (in minutes) of daily class meetings for this class? If the weekly schedule is normally the same, just complete Week 1, as in Example 1. If you are unable to describe this class in the format below, please attach a separate piece of paper with your description.

<table>
<thead>
<tr>
<th>Week 1</th>
<th>Week 2</th>
</tr>
</thead>
</table>
| Monday | _______
| Tuesday| _______|
| Wednesday| _______|
| Thursday| _______|
| Friday | _______|

**Examples**

<table>
<thead>
<tr>
<th></th>
<th>Example 1</th>
<th>Example 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Week 1</td>
<td>Week 2</td>
</tr>
<tr>
<td></td>
<td>45</td>
<td>90</td>
</tr>
<tr>
<td></td>
<td>45</td>
<td>90</td>
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<tr>
<td></td>
<td>45</td>
<td>90</td>
</tr>
</tbody>
</table>

19b. What is the calendar duration of this science class? (Darken one oval.)

- Year
- Semester
- Quarter

**For office use only**
20. Are students assigned to this class by level of ability? (Darken one oval.)  

- Yes  
- No

21. Which of the following best describes the ability of the students in this class relative to other students in this school? (Darken one oval.)

- Fairly homogeneous and low in ability
- Fairly homogeneous and average in ability
- Fairly homogeneous and high in ability
- Heterogeneous, with a mixture of two or more ability levels

22. Indicate if any of the students in this science class are formally classified as each of the following: (Darken all that apply.)

- Limited English Proficiency
- Learning Disabled
- Mentally Handicapped
- Physically Handicapped, please specify handicap(s): _______________________________________________________

23. Think about your plans for this science class for the entire course. How much emphasis will each of the following student objectives receive? (Darken one oval on each line.)

<table>
<thead>
<tr>
<th>Student Objectives</th>
<th>None</th>
<th>Minimal</th>
<th>Moderate</th>
<th>Heavy</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Increase students’ interest in science</td>
<td></td>
<td></td>
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<tr>
<td>b. Learn basic science concepts</td>
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<tr>
<td>c. Learn important terms and facts of science</td>
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<tr>
<td>d. Learn science process/inquiry skills</td>
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<tr>
<td>e. Prepare for further study in science</td>
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<tr>
<td>f. Learn to evaluate arguments based on scientific evidence</td>
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<tr>
<td>g. Learn how to communicate ideas in science effectively</td>
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<tr>
<td>h. Learn about the applications of science in business and industry</td>
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</tr>
<tr>
<td>i. Learn about the relationship between science, technology, and society</td>
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<tr>
<td>j. Learn about the history and nature of science</td>
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<tr>
<td>k. Prepare for standardized tests</td>
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</tr>
</tbody>
</table>

24. About how often do you do each of the following in your science instruction? (Darken one oval on each line.)

<table>
<thead>
<tr>
<th>Instruction</th>
<th>Never</th>
<th>Rarely (e.g., a few times a year)</th>
<th>Sometimes (e.g., once or twice a month)</th>
<th>Often (e.g., once or twice a week)</th>
<th>All or almost all science lessons</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Introduce content through formal presentations</td>
<td></td>
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<tr>
<td>b. Pose open-ended questions</td>
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<tr>
<td>c. Engage the whole class in discussions</td>
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<tr>
<td>d. Require students to supply evidence to support their claims</td>
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<tr>
<td>e. Ask students to explain concepts to one another</td>
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<tr>
<td>f. Ask students to consider alternative explanations</td>
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<tr>
<td>g. Allow students to work at their own pace</td>
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<tr>
<td>h. Help students see connections between science and other disciplines</td>
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<tr>
<td>i. Assign science homework</td>
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<tr>
<td>j. Read and comment on the reflections students have written, e.g., in their journals</td>
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</tr>
</tbody>
</table>
25. About how often do students in this science class take part in the following types of activities? (Darken one oval on each line.)

<table>
<thead>
<tr>
<th>Activity</th>
<th>Never</th>
<th>Rarely (e.g., a few times a year)</th>
<th>Sometimes (e.g., once or twice a month)</th>
<th>Often (e.g., once or twice a week)</th>
<th>All or almost all science lessons</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Listen and take notes during presentation by teacher</td>
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<tr>
<td>b. Watch a science demonstration</td>
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<tr>
<td>c. Work in groups</td>
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<tr>
<td>d. Read from a science textbook in class</td>
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<tr>
<td>e. Read other (non-textbook) science-related materials in class</td>
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<tr>
<td>f. Do hands-on/laboratory science activities or investigations</td>
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<tr>
<td>g. Follow specific instructions in an activity or investigation</td>
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<tr>
<td>h. Design or implement their own investigation</td>
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<tr>
<td>i. Participate in field work</td>
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<tr>
<td>j. Answer textbook or worksheet questions</td>
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<tr>
<td>k. Record, represent, and/or analyze data</td>
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<tr>
<td>l. Write reflections (e.g., in a journal)</td>
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<tr>
<td>m. Prepare written science reports</td>
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<tr>
<td>n. Make formal presentations to the rest of the class</td>
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<tr>
<td>o. Work on extended science investigations or projects (a week or more in duration)</td>
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<tr>
<td>p. Use computers as a tool (e.g., spreadsheets, data analysis)</td>
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<tr>
<td>q. Use mathematics as a tool in problem-solving</td>
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<tr>
<td>r. Take field trips</td>
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<tr>
<td>s. Watch audiovisual presentations (e.g., videotapes, CD-ROMs, videodiscs, television programs, films, or filmstrips)</td>
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</tbody>
</table>

26. About how often do students in this science class use **computers** to:

<table>
<thead>
<tr>
<th>Activity</th>
<th>Never</th>
<th>Rarely (e.g., a few times a year)</th>
<th>Sometimes (e.g., once or twice a month)</th>
<th>Often (e.g., once or twice a week)</th>
<th>All or almost all science lessons</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Do drill and practice</td>
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<tr>
<td>b. Demonstrate scientific principles</td>
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<tr>
<td>c. Play science learning games</td>
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<tr>
<td>d. Do laboratory simulations</td>
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<tr>
<td>e. Collect data using sensors or probes</td>
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<tr>
<td>f. Retrieve or exchange data</td>
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<tr>
<td>g. Solve problems using simulations</td>
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<tr>
<td>h. Take a test or quiz</td>
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</tbody>
</table>

27. How often do you assess student progress in science in each of the following ways? (Darken one oval on each line.)

<table>
<thead>
<tr>
<th>Activity</th>
<th>Never</th>
<th>Rarely (e.g., a few times a year)</th>
<th>Sometimes (e.g., once or twice a month)</th>
<th>Often (e.g., once or twice a week)</th>
<th>All or almost all science lessons</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Conduct a pre-assessment to determine what students already know.</td>
<td></td>
<td></td>
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<tr>
<td>b. Observe students and ask questions as they work individually.</td>
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</tr>
<tr>
<td>c. Observe students and ask questions as they work in small groups.</td>
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<tr>
<td>d. Ask students questions during large group discussions.</td>
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<tr>
<td>e. Use assessments embedded in class activities to see if students are &quot;getting it&quot;</td>
<td></td>
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<tr>
<td>f. Review student homework.</td>
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<tr>
<td>g. Review student notebooks/journals.</td>
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<tr>
<td>h. Review student portfolios.</td>
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</tbody>
</table>

Question 27 continues on next page...
27. continued...

i. Have students do long-term science projects.  
  j. Have students present their work to the class.  
  k. Give predominantly short-answer tests (e.g., multiple choice, 
      true/false, fill in the blank).  
  l. Give tests requiring open-ended responses (e.g., descriptions, 
      explanations).  
  m. Grade student work on open-ended and/or laboratory tasks 
      using defined criteria (e.g., a scoring rubric).  
  n. Have students assess each other (peer evaluation).  

28. For the following equipment, please indicate the extent to which each is available, whether or not each is needed, and the extent to which each is integrated in this science class.

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Not at all Available</th>
<th>Readily Available</th>
<th>Needed?</th>
<th>Never use in this course</th>
<th>Use in specific parts of this course</th>
<th>Fully integrated into this course</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Overhead projector</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>b. Videotape player</td>
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<tr>
<td>c. Videodisc player</td>
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<tr>
<td>d. CD-ROM player</td>
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<tr>
<td>e. Four-function calculators</td>
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<tr>
<td>f. Fraction calculators</td>
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<tr>
<td>g. Graphing calculators</td>
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<tr>
<td>h. Scientific calculators</td>
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<tr>
<td>i. Computers</td>
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<tr>
<td>j. Computers with Internet connection</td>
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<tr>
<td>k. Calculator/computer lab interfacing devices</td>
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<tr>
<td>l. Running water in labs/classrooms</td>
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<tr>
<td>m. Electric outlets in labs/classrooms</td>
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<tr>
<td>n. Gas for burners in labs/classrooms</td>
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<tr>
<td>o. Hoods or air hoses in labs/classrooms</td>
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</tr>
</tbody>
</table>

29. How much of your own money do you estimate you will spend for supplies for this science class this school year (or semester or quarter if not a full-year course)? (Please enter your answer as a 3-digit number rounded to the nearest dollar, i.e., enter $25.19 as 025. Enter your answer in the spaces to the right, then darken the corresponding oval in each column.)

If none, darken this oval:  

30. How much of your own money do you estimate you will spend for your own professional development activities during the period Sept. 1, 1999 - Aug. 31, 2000? (Please enter your answer as a 3-digit number rounded to the nearest dollar, i.e., enter $25.19 as 025. Enter your answer in the spaces to the right, then darken the corresponding oval in each column.)

If none, darken this oval:  
31. How much control do you have over each of the following for this science class? (Darken one oval on each line.)

<table>
<thead>
<tr>
<th>Control Level</th>
<th>a. Determining course goals and objectives</th>
<th>b. Selecting textbooks/instructional programs</th>
<th>c. Selecting other instructional materials</th>
<th>d. Selecting content, topics, and skills to be taught</th>
<th>e. Selecting the sequence in which topics are covered</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
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<tr>
<td>1</td>
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<td>4</td>
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<td>4</td>
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<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Control Level</th>
<th>f. Setting the pace for covering topics</th>
<th>g. Selecting teaching techniques</th>
<th>h. Determining the amount of homework to be assigned</th>
<th>i. Choosing criteria for grading students</th>
<th>j. Choosing tests for classroom assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
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<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
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</tr>
</tbody>
</table>

32. How much science homework do you assign to this science class in a typical week? (Darken one oval.)

<table>
<thead>
<tr>
<th>0-30 min</th>
<th>31-60 min</th>
<th>61-90 min</th>
<th>91-120 min</th>
<th>2-3 hours</th>
<th>More than 3 hours</th>
</tr>
</thead>
</table>

33a. Are you using one or more commercially published textbooks or programs for teaching science to this class? (Darken one oval.)

No, SKIP TO SECTION D, PAGE 14
Yes, CONTINUE WITH 33b

33b. Which best describes your use of textbooks/programs in this class? (Darken one oval.)

Use one textbook or program all or most of the time
Use multiple textbooks/programs

34. Indicate the publisher of the one textbook/program used most often by students in this class. (Darken one oval.)

Addison Wesley Longman, Inc/Scott Foresman
Benjamin/Cummings Publishing Company, Inc.
Brooks/Cole Publishing Co
Carolina Biological Supply Co
Delta Education
Encyclopaedia Britannica
Globe Fearn, Inc / Cambridge
Harcourt Brace/Harcourt, Brace & Jovanovich
Holt, Rinehart and Winston, Inc
Houghton Mifflin Company/McDougal Littell/D.C. Heath
It's About Time
J.M. LeBel Enterprises
Kendall Hunt Publishing
Lawrence Hall of Science
Modern Curriculum Press
Mosby/The C.V. Mosby Company
Nystrom
Optical Data Corporation
Prentice Hall, Inc.
Saxon Publishers
Scholastic, Inc.
Silver Burdett Ginn
South-Western Educational Publishing
Steck-Vaughn Company
Videodiscovery, Inc
W.H. Freeman
Wadsworth Publishing
Other, please specify:

______________________________________________________________
35a. Please indicate the title, author, and publication year of the **one** textbook/program used **most often** by students in this class.

Title: ____________________________________________________________

First Author: ______________________________________________________

Publication Year: ________ Edition: _____________

35b. Approximately what percentage of this textbook/program will you "cover" in this course? (Darken one oval.)

- <25%
- 25-49%
- 50-74%
- 75-90%
- >90%

35c. How would you rate the overall quality of this textbook/program? (Darken one oval.)

- Very Poor
- Poor
- Fair
- Good
- Very Good
- Excellent

### D. Your Most Recent Science Lesson in This Class

Questions 36-38 refer to the last time you taught science to this class. Do not be concerned if this lesson was not typical of instruction in this class. (Please enter your answers as 3-digit numbers, i.e., if 30 minutes, enter as 030. Enter your answers in the spaces provided, then darken the corresponding oval in each column.)

36a. How many minutes were allocated to the most recent science lesson? (Note: Teachers in departmentalized and other non-self-contained settings should answer for the entire length of the class period, even if there were interruptions.)

36b. Of these, how many minutes were spent on the following? (The sum of the numbers in 1.-6. below should equal your response in 36a.)

<table>
<thead>
<tr>
<th></th>
<th>1. Daily routines, interruptions, and other non-instructional activities</th>
<th>2. Whole class lecture/discussions</th>
<th>3. Individual students reading textbooks, completing worksheets, etc.</th>
<th>4. Working with hands-on, manipulative, or laboratory materials</th>
<th>5. Non-laboratory small group work</th>
<th>6. Other</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>[ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]</td>
<td>[ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]</td>
<td>[ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]</td>
<td>[ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]</td>
<td>[ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]</td>
<td>[ ] [ ]</td>
</tr>
<tr>
<td></td>
<td>[ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]</td>
<td>[ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]</td>
<td>[ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]</td>
<td>[ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]</td>
<td>[ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]</td>
<td>[ ] [ ]</td>
</tr>
<tr>
<td></td>
<td>[ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]</td>
<td>[ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]</td>
<td>[ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]</td>
<td>[ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]</td>
<td>[ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]</td>
<td>[ ] [ ]</td>
</tr>
<tr>
<td></td>
<td>[ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]</td>
<td>[ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]</td>
<td>[ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]</td>
<td>[ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]</td>
<td>[ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]</td>
<td>[ ] [ ]</td>
</tr>
</tbody>
</table>
37. Which of the following activities took place during that science lesson? (Darken all that apply.)

- Lecture
- Discussion
- Students completing textbook/worksheet problems
- Students doing hands-on/labatory activities
- Students reading about science
- Students working in small groups
- Students using calculators
- Students using computers
- Students using other technologies
- Test or quiz
- None of the above

38. Did that lesson take place on the most recent day you met with that class?  
- Yes  
- No

E. Demographic Information

39. Indicate your sex:

- Male
- Female

40. Are you: (Darken all that apply)

- American Indian or Alaskan Native
- Asian
- Black or African-American
- Hispanic or Latino
- Native Hawaiian or Other Pacific Islander
- White

41. In what year were you born?  
(Enter the last two digits of the year you were born; e.g., if you were born in 1959, enter 59. Please enter your answer in the spaces to the right, then darken the corresponding oval in each column.)

42. How many years have you taught at the K-12 level prior to this school year? (Please enter your answer in the spaces to the right, then darken the corresponding oval in each column.)

43. If you have an email address, please write it here: ________________________________

44. When did you complete this questionnaire? Date: _______ / _______ / _______

Please make a photocopy of this questionnaire and keep it in case the original is lost in the mail. Please return the original to:

2000 National Survey of Science and Mathematics Education
Westat
1650 Research Blvd.
TB120F
Rockville, MD  20850

THANK YOU!
### Table STQ 1.1
Grade K–4 Science Teachers’
Opinions on Curriculum and Instruction Issues

<table>
<thead>
<tr>
<th>Students learn science best in classes with students of similar abilities</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>No Opinion</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>The testing program in my state/district dictates what science content I teach</td>
<td>8 (1.3)</td>
<td>60 (2.6)</td>
<td>8 (1.2)</td>
<td>22 (1.9)</td>
<td>3 (1.0)</td>
</tr>
<tr>
<td>I enjoy teaching science</td>
<td>6 (1.1)</td>
<td>21 (2.1)</td>
<td>16 (1.7)</td>
<td>43 (2.5)</td>
<td>14 (1.9)</td>
</tr>
<tr>
<td>I consider myself a “master” science teacher</td>
<td>1 (0.8)</td>
<td>6 (1.2)</td>
<td>5 (1.3)</td>
<td>57 (2.3)</td>
<td>32 (2.1)</td>
</tr>
<tr>
<td>I have time during the regular school week to work with my colleagues on science curriculum and teaching</td>
<td>32 (2.3)</td>
<td>41 (2.6)</td>
<td>6 (1.3)</td>
<td>20 (2.0)</td>
<td>2 (0.7)</td>
</tr>
<tr>
<td>My colleagues and I regularly share ideas and materials related to science teaching</td>
<td>9 (1.3)</td>
<td>30 (2.4)</td>
<td>7 (1.6)</td>
<td>48 (2.7)</td>
<td>6 (1.1)</td>
</tr>
<tr>
<td>Science teachers in this school regularly observe each other teaching classes as part of sharing and improving instructional strategies</td>
<td>41 (2.4)</td>
<td>47 (2.3)</td>
<td>8 (1.4)</td>
<td>3 (0.8)</td>
<td>1 (0.4)</td>
</tr>
<tr>
<td>Most science teachers in this school contribute actively to making decisions about the science curriculum</td>
<td>15 (2.2)</td>
<td>35 (2.4)</td>
<td>19 (1.8)</td>
<td>27 (2.5)</td>
<td>4 (0.8)</td>
</tr>
</tbody>
</table>

### Table STQ 1.2
Grade 5–8 Science Teachers’
Opinions on Curriculum and Instruction Issues

<table>
<thead>
<tr>
<th>Students learn science best in classes with students of similar abilities</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>No Opinion</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>The testing program in my state/district dictates what science content I teach</td>
<td>7 (1.9)</td>
<td>46 (3.4)</td>
<td>8 (1.8)</td>
<td>33 (3.6)</td>
<td>5 (0.8)</td>
</tr>
<tr>
<td>I enjoy teaching science</td>
<td>8 (1.7)</td>
<td>21 (2.4)</td>
<td>14 (2.9)</td>
<td>41 (3.4)</td>
<td>15 (2.3)</td>
</tr>
<tr>
<td>I consider myself a “master” science teacher</td>
<td>1 (0.8)</td>
<td>4 (1.4)</td>
<td>6 (2.1)</td>
<td>42 (3.8)</td>
<td>47 (3.9)</td>
</tr>
<tr>
<td>I have time during the regular school week to work with my colleagues on science curriculum and teaching</td>
<td>30 (3.1)</td>
<td>40 (3.4)</td>
<td>5 (1.7)</td>
<td>23 (2.6)</td>
<td>2 (0.6)</td>
</tr>
<tr>
<td>My colleagues and I regularly share ideas and materials related to science teaching</td>
<td>10 (2.5)</td>
<td>26 (3.6)</td>
<td>5 (1.6)</td>
<td>51 (4.0)</td>
<td>8 (1.8)</td>
</tr>
<tr>
<td>Science teachers in this school regularly observe each other teaching classes as part of sharing and improving instructional strategies</td>
<td>42 (3.4)</td>
<td>46 (3.5)</td>
<td>7 (1.8)</td>
<td>4 (1.1)</td>
<td>1 (0.5)</td>
</tr>
<tr>
<td>Most science teachers in this school contribute actively to making decisions about the science curriculum</td>
<td>15 (2.6)</td>
<td>27 (3.1)</td>
<td>10 (2.2)</td>
<td>42 (3.6)</td>
<td>6 (1.4)</td>
</tr>
</tbody>
</table>
### Table STQ 1.3

**Grade 9–12 Science Teachers’ Opinions on Curriculum and Instruction Issues**

<table>
<thead>
<tr>
<th>Opinion</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>No Opinion</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students learn science best in classes with students of similar abilities</td>
<td>1 (0.3)</td>
<td>23 (2.2)</td>
<td>3 (0.6)</td>
<td>51 (2.1)</td>
<td>21 (1.8)</td>
</tr>
<tr>
<td>The testing program in my state/district dictates what science content I teach</td>
<td>10 (1.6)</td>
<td>21 (1.5)</td>
<td>11 (2.0)</td>
<td>40 (2.2)</td>
<td>17 (1.4)</td>
</tr>
<tr>
<td>I enjoy teaching science</td>
<td>0 (0.1)</td>
<td>0 (0.1)</td>
<td>2 (0.7)</td>
<td>19 (1.6)</td>
<td>79 (1.6)</td>
</tr>
<tr>
<td>I consider myself a “master” science teacher</td>
<td>0 (0.1)</td>
<td>12 (1.2)</td>
<td>24 (2.5)</td>
<td>37 (1.9)</td>
<td>27 (1.7)</td>
</tr>
<tr>
<td>I have time during the regular school week to work with my colleagues on science curriculum and teaching</td>
<td>24 (1.8)</td>
<td>45 (2.3)</td>
<td>4 (0.7)</td>
<td>25 (2.1)</td>
<td>3 (1.0)</td>
</tr>
<tr>
<td>My colleagues and I regularly share ideas and materials related to science teaching</td>
<td>6 (1.2)</td>
<td>24 (2.3)</td>
<td>4 (0.6)</td>
<td>55 (2.2)</td>
<td>11 (1.2)</td>
</tr>
<tr>
<td>Science teachers in this school regularly observe each other teaching classes as part of sharing and improving instructional strategies</td>
<td>40 (2.3)</td>
<td>43 (2.3)</td>
<td>6 (1.0)</td>
<td>9 (1.1)</td>
<td>2 (0.4)</td>
</tr>
<tr>
<td>Most science teachers in this school contribute actively to making decisions about the science curriculum</td>
<td>9 (1.0)</td>
<td>21 (1.7)</td>
<td>14 (2.3)</td>
<td>45 (2.3)</td>
<td>11 (1.4)</td>
</tr>
</tbody>
</table>

### Table STQ 2

**Science Teachers’ Familiarity with, Agreement with, and Implementation of NRC Standards**

<table>
<thead>
<tr>
<th>Opinion</th>
<th>Grades K–4</th>
<th>Grades 5–8</th>
<th>Grades 9–12</th>
</tr>
</thead>
<tbody>
<tr>
<td>How familiar are you with the National Science Education Standards, published by the National Research Council?</td>
<td>67 (2.2)</td>
<td>42 (3.7)</td>
<td>37 (2.0)</td>
</tr>
<tr>
<td>Not at all familiar</td>
<td>22 (1.8)</td>
<td>31 (3.0)</td>
<td>34 (2.2)</td>
</tr>
<tr>
<td>Somewhat familiar</td>
<td>9 (1.3)</td>
<td>19 (2.4)</td>
<td>18 (1.4)</td>
</tr>
<tr>
<td>Very familiar</td>
<td>2 (0.5)</td>
<td>8 (1.6)</td>
<td>10 (1.1)</td>
</tr>
<tr>
<td>Please indicate the extent of your agreement with the overall vision of science education described in the National Science Education Standards.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>0 (0.4)</td>
<td>0 —*</td>
<td>0 (0.2)</td>
</tr>
<tr>
<td>Disagree</td>
<td>4 (2.0)</td>
<td>5 (2.3)</td>
<td>7 (1.6)</td>
</tr>
<tr>
<td>No Opinion</td>
<td>26 (3.7)</td>
<td>27 (4.1)</td>
<td>22 (2.3)</td>
</tr>
<tr>
<td>Agree</td>
<td>61 (4.1)</td>
<td>62 (4.4)</td>
<td>65 (2.9)</td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>8 (2.4)</td>
<td>6 (2.0)</td>
<td>5 (0.9)</td>
</tr>
<tr>
<td>To what extent have you implemented recommendations from the National Education Standards in your science teaching?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not at all</td>
<td>5 (1.9)</td>
<td>4 (2.1)</td>
<td>4 (1.1)</td>
</tr>
<tr>
<td>To a minimal extent</td>
<td>26 (3.9)</td>
<td>22 (5.1)</td>
<td>28 (2.3)</td>
</tr>
<tr>
<td>To a moderate extent</td>
<td>57 (4.1)</td>
<td>51 (5.3)</td>
<td>56 (2.5)</td>
</tr>
<tr>
<td>To a great extent</td>
<td>12 (2.5)</td>
<td>23 (4.5)</td>
<td>12 (1.6)</td>
</tr>
</tbody>
</table>

*No teachers in the sample selected this response option. Thus, it is impossible to calculate the standard error of this estimate.*
<table>
<thead>
<tr>
<th>Task</th>
<th>Percent of Teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not Adequately</td>
</tr>
<tr>
<td>Take students’ prior understanding into account when planning</td>
<td>3 (0.9)</td>
</tr>
<tr>
<td>curriculum and instruction</td>
<td></td>
</tr>
<tr>
<td>Develop students’ conceptual understanding of science</td>
<td>2 (0.7)</td>
</tr>
<tr>
<td>Provide deeper coverage of fewer science concepts</td>
<td>7 (1.4)</td>
</tr>
<tr>
<td>Make connections between science and other disciplines</td>
<td>2 (0.7)</td>
</tr>
<tr>
<td>Lead a class of students using investigative strategies</td>
<td>8 (1.4)</td>
</tr>
<tr>
<td>Manage a class of students engaged in hands-on/project-based work</td>
<td>2 (0.6)</td>
</tr>
<tr>
<td>Have students work in cooperative learning groups</td>
<td>2 (0.6)</td>
</tr>
<tr>
<td>Listen/ask questions as students work in order to gauge their</td>
<td>1 (0.6)</td>
</tr>
<tr>
<td>understanding</td>
<td></td>
</tr>
<tr>
<td>Use the textbook as a resource rather than the primary instructional</td>
<td>6 (1.3)</td>
</tr>
<tr>
<td>tool</td>
<td></td>
</tr>
<tr>
<td>Teach groups that are heterogeneous in ability</td>
<td>2 (0.7)</td>
</tr>
<tr>
<td>Teach students that have limited English proficiency</td>
<td>43 (2.7)</td>
</tr>
<tr>
<td>Recognize and respond to student cultural diversity</td>
<td>4 (1.0)</td>
</tr>
<tr>
<td>Encourage students’ interest in science</td>
<td>1 (0.5)</td>
</tr>
<tr>
<td>Encourage participation of females in science</td>
<td>1 (0.5)</td>
</tr>
<tr>
<td>Encourage participation of minorities in science</td>
<td>2 (0.7)</td>
</tr>
<tr>
<td>Involve parents in the science education of their children</td>
<td>16 (1.6)</td>
</tr>
<tr>
<td>Use calculators/computers for drill and practice</td>
<td>21 (2.4)</td>
</tr>
<tr>
<td>Use calculators/computers for science learning games</td>
<td>30 (2.2)</td>
</tr>
<tr>
<td>Use calculators/computers to collect and/or analyze data</td>
<td>39 (2.6)</td>
</tr>
<tr>
<td>Use computers to demonstrate scientific principles</td>
<td>53 (2.9)</td>
</tr>
<tr>
<td>Use computers for laboratory simulations</td>
<td>64 (2.7)</td>
</tr>
<tr>
<td>Use the Internet in your science teaching for general reference</td>
<td>33 (2.8)</td>
</tr>
<tr>
<td>Use the Internet in your science teaching for data acquisition</td>
<td>43 (2.8)</td>
</tr>
<tr>
<td>Use the Internet in your science teaching for collaborative projects</td>
<td>67 (2.3)</td>
</tr>
<tr>
<td>with classes/individuals in other schools</td>
<td></td>
</tr>
<tr>
<td>Task</td>
<td>Percent of Teachers</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>---------------------</td>
</tr>
<tr>
<td></td>
<td>Not Adequately</td>
</tr>
<tr>
<td></td>
<td>Prepared</td>
</tr>
<tr>
<td>Take students’ prior understanding into account when planning</td>
<td>4 (1.8)</td>
</tr>
<tr>
<td>curriculum and instruction</td>
<td></td>
</tr>
<tr>
<td>Develop students’ conceptual understanding of science</td>
<td>4 (1.9)</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Provide deeper coverage of fewer science concepts</td>
<td>5 (2.1)</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Make connections between science and other disciplines</td>
<td>3 (1.5)</td>
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<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Lead a class of students using investigative strategies</td>
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</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Manage a class of students engaged in hands-on/project-based work</td>
<td>1 (0.8)</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Have students work in cooperative learning groups</td>
<td>0 (0.2)</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Listen/ask questions as students work in order to gauge their</td>
<td>0 (0.0)</td>
</tr>
<tr>
<td>understanding</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Use the textbook as a resource rather than the primary instructional</td>
<td>6 (2.1)</td>
</tr>
<tr>
<td>tool</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Teach groups that are heterogeneous in ability</td>
<td>1 (0.4)</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Teach students that have limited English proficiency</td>
<td>48 (3.3)</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Recognize and respond to student cultural diversity</td>
<td>6 (2.1)</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Encourage students’ interest in science</td>
<td>1 (0.7)</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Encourage participation of females in science</td>
<td>2 (1.4)</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Encourage participation of minorities in science</td>
<td>4 (1.8)</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Involve parents in the science education of their children</td>
<td>14 (2.6)</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Use calculators/computers for drill and practice</td>
<td>12 (2.5)</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Use calculators/computers for science learning games</td>
<td>21 (3.1)</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Use calculators/computers to collect and/or analyze data</td>
<td>20 (3.2)</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Use computers to demonstrate scientific principles</td>
<td>34 (3.3)</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Use computers for laboratory simulations</td>
<td>48 (3.5)</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Use the Internet in your science teaching for general reference</td>
<td>22 (3.7)</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Use the Internet in your science teaching for data acquisition</td>
<td>28 (3.6)</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Use the Internet in your science teaching for collaborative projects</td>
<td>45 (4.1)</td>
</tr>
<tr>
<td>with classes/individuals in other schools</td>
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</table>
### Table STQ 3.3

**Grade 9–12 Science Teachers’ Perceptions of Their Preparation for Each of a Number of Tasks**

<table>
<thead>
<tr>
<th>Task</th>
<th>Not Adequately Prepared</th>
<th>Somewhat Prepared</th>
<th>Fairly Well Prepared</th>
<th>Very Well Prepared</th>
</tr>
</thead>
<tbody>
<tr>
<td>Take students’ prior understanding into account when planning curriculum and instruction</td>
<td>3 (0.6)</td>
<td>20 (1.4)</td>
<td>47 (2.2)</td>
<td>30 (1.9)</td>
</tr>
<tr>
<td>Develop students’ conceptual understanding of science</td>
<td>1 (0.2)</td>
<td>7 (1.0)</td>
<td>47 (2.0)</td>
<td>45 (2.1)</td>
</tr>
<tr>
<td>Provide deeper coverage of fewer science concepts</td>
<td>2 (0.5)</td>
<td>10 (1.1)</td>
<td>42 (2.3)</td>
<td>45 (2.3)</td>
</tr>
<tr>
<td>Make connections between science and other disciplines</td>
<td>1 (0.8)</td>
<td>9 (0.9)</td>
<td>45 (2.3)</td>
<td>44 (2.3)</td>
</tr>
<tr>
<td>Lead a class of students using investigative strategies</td>
<td>3 (0.9)</td>
<td>15 (1.6)</td>
<td>45 (2.0)</td>
<td>37 (2.0)</td>
</tr>
<tr>
<td>Manage a class of students engaged in hands-on/project-based work</td>
<td>1 (0.2)</td>
<td>8 (1.2)</td>
<td>38 (2.3)</td>
<td>53 (2.5)</td>
</tr>
<tr>
<td>Have students work in cooperative learning groups</td>
<td>1 (0.3)</td>
<td>13 (1.5)</td>
<td>39 (2.3)</td>
<td>47 (2.2)</td>
</tr>
<tr>
<td>Listen/ask questions as students work in order to gauge their understanding</td>
<td>0 (0.2)</td>
<td>4 (0.8)</td>
<td>40 (2.2)</td>
<td>56 (2.3)</td>
</tr>
<tr>
<td>Use the textbook as a resource rather than the primary instructional tool</td>
<td>2 (0.4)</td>
<td>13 (1.5)</td>
<td>33 (2.1)</td>
<td>52 (2.3)</td>
</tr>
<tr>
<td>Teach groups that are heterogeneous in ability</td>
<td>4 (1.1)</td>
<td>16 (1.5)</td>
<td>48 (2.3)</td>
<td>32 (2.3)</td>
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<tr>
<td>Teach students that have limited English proficiency</td>
<td>47 (2.1)</td>
<td>32 (2.1)</td>
<td>14 (1.8)</td>
<td>7 (0.9)</td>
</tr>
<tr>
<td>Recognize and respond to student cultural diversity</td>
<td>6 (0.9)</td>
<td>32 (2.0)</td>
<td>42 (2.2)</td>
<td>19 (1.9)</td>
</tr>
<tr>
<td>Encourage students’ interest in science</td>
<td>0 (0.1)</td>
<td>5 (1.1)</td>
<td>41 (2.0)</td>
<td>54 (2.1)</td>
</tr>
<tr>
<td>Encourage participation of females in science</td>
<td>1 (0.2)</td>
<td>4 (0.7)</td>
<td>32 (1.7)</td>
<td>64 (1.9)</td>
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<tr>
<td>Encourage participation of minorities in science</td>
<td>2 (0.8)</td>
<td>8 (1.1)</td>
<td>37 (2.0)</td>
<td>52 (2.2)</td>
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<tr>
<td>Involve parents in the science education of their children</td>
<td>14 (1.3)</td>
<td>42 (2.4)</td>
<td>32 (2.2)</td>
<td>12 (1.3)</td>
</tr>
<tr>
<td>Use calculators/computers for drill and practice</td>
<td>9 (1.3)</td>
<td>23 (1.5)</td>
<td>37 (1.7)</td>
<td>31 (2.2)</td>
</tr>
<tr>
<td>Use calculators/computers for science learning games</td>
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<td>32 (1.8)</td>
<td>34 (2.2)</td>
<td>14 (1.2)</td>
</tr>
<tr>
<td>Use calculators/computers to collect and/or analyze data</td>
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<td>23 (1.7)</td>
<td>38 (1.9)</td>
<td>28 (1.9)</td>
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<tr>
<td>Use computers to demonstrate scientific principles</td>
<td>18 (1.7)</td>
<td>30 (2.1)</td>
<td>31 (2.2)</td>
<td>21 (1.9)</td>
</tr>
<tr>
<td>Use computers for laboratory simulations</td>
<td>24 (1.8)</td>
<td>31 (1.8)</td>
<td>24 (1.6)</td>
<td>21 (2.3)</td>
</tr>
<tr>
<td>Use the Internet in your science teaching for general reference</td>
<td>14 (1.5)</td>
<td>21 (1.7)</td>
<td>31 (1.9)</td>
<td>33 (2.1)</td>
</tr>
<tr>
<td>Use the Internet in your science teaching for data acquisition</td>
<td>17 (1.6)</td>
<td>26 (1.7)</td>
<td>31 (2.0)</td>
<td>26 (1.9)</td>
</tr>
<tr>
<td>Use the Internet in your science teaching for collaborative projects with classes/individuals in other schools</td>
<td>42 (2.3)</td>
<td>29 (2.2)</td>
<td>20 (1.9)</td>
<td>10 (1.1)</td>
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### Table STQ 4a
#### Degrees of Science Teachers

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<td>Grades K–4</td>
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<tr>
<td>Bachelors</td>
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<tr>
<td>Masters</td>
<td>41 (2.7)</td>
</tr>
<tr>
<td>Doctorate</td>
<td>0 (0.2)</td>
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### Table STQ 4b
#### Subjects of Science Teachers’ Degrees

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<tr>
<td>Biology/Life Science</td>
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<tr>
<td>Bachelors</td>
<td>7 (1.5)</td>
</tr>
<tr>
<td>Masters</td>
<td>0 (0.2)</td>
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<tr>
<td>Doctorate</td>
<td>0 —*</td>
</tr>
<tr>
<td>Chemistry</td>
<td></td>
</tr>
<tr>
<td>Bachelors</td>
<td>2 (0.8)</td>
</tr>
<tr>
<td>Masters</td>
<td>0 —*</td>
</tr>
<tr>
<td>Doctorate</td>
<td>0 —*</td>
</tr>
<tr>
<td>Earth/Space Science</td>
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</tr>
<tr>
<td>Bachelors</td>
<td>5 (1.0)</td>
</tr>
<tr>
<td>Masters</td>
<td>0 (0.2)</td>
</tr>
<tr>
<td>Doctorate</td>
<td>0 —*</td>
</tr>
<tr>
<td>Physics</td>
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</tr>
<tr>
<td>Bachelors</td>
<td>2 (0.7)</td>
</tr>
<tr>
<td>Masters</td>
<td>0 —*</td>
</tr>
<tr>
<td>Doctorate</td>
<td>0 —*</td>
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<tr>
<td>Other Science</td>
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</tr>
<tr>
<td>Bachelors</td>
<td>1 (0.5)</td>
</tr>
<tr>
<td>Masters</td>
<td>0 (0.1)</td>
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<tr>
<td>Doctorate</td>
<td>0 (0.2)</td>
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<td>Science Education</td>
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<td>6 (1.2)</td>
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<td>Masters</td>
<td>1 (0.4)</td>
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<tr>
<td>Doctorate</td>
<td>0 —*</td>
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<tr>
<td>Mathematics/Mathematics Education</td>
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<tr>
<td>Bachelors</td>
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<tr>
<td>Masters</td>
<td>2 (0.6)</td>
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<tr>
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<td>Elementary Education</td>
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<tr>
<td>Other Education</td>
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<tr>
<td>Bachelors</td>
<td>15 (1.9)</td>
</tr>
<tr>
<td>Masters</td>
<td>15 (1.8)</td>
</tr>
<tr>
<td>Doctorate</td>
<td>0 —*</td>
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<tr>
<td>Other Subject</td>
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</tr>
<tr>
<td>Bachelors</td>
<td>15 (2.1)</td>
</tr>
<tr>
<td>Masters</td>
<td>4 (1.1)</td>
</tr>
<tr>
<td>Doctorate</td>
<td>0 —*</td>
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* No teachers in the sample selected this response option. Thus, it is not possible to calculate the standard error of this estimate.
### Table STQ 5
College Courses Completed by Science Teachers

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<thead>
<tr>
<th></th>
<th>Percent of Teachers</th>
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<tbody>
<tr>
<td></td>
<td>Grades K–4</td>
</tr>
<tr>
<td><strong>Education</strong></td>
<td></td>
</tr>
<tr>
<td>General methods of teaching</td>
<td>97 (1.1)</td>
</tr>
<tr>
<td>Methods of teaching science</td>
<td>79 (2.1)</td>
</tr>
<tr>
<td>Instructional uses of computers/other technologies</td>
<td>46 (3.1)</td>
</tr>
<tr>
<td>Supervised student teaching in science</td>
<td>31 (2.5)</td>
</tr>
<tr>
<td><strong>Mathematics</strong></td>
<td></td>
</tr>
<tr>
<td>College algebra/trigonometry/elementary functions</td>
<td>72 (2.3)</td>
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<tr>
<td>Calculus</td>
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</tr>
<tr>
<td>Advanced calculus</td>
<td>2 (0.7)</td>
</tr>
<tr>
<td>Differential equations</td>
<td>3 (0.8)</td>
</tr>
<tr>
<td>Discrete mathematics</td>
<td>2 (0.6)</td>
</tr>
<tr>
<td>Probability and statistics</td>
<td>37 (2.7)</td>
</tr>
<tr>
<td><strong>Chemistry</strong></td>
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</tr>
<tr>
<td>General/introductory chemistry</td>
<td>49 (2.3)</td>
</tr>
<tr>
<td>Analytical chemistry</td>
<td>1 (0.5)</td>
</tr>
<tr>
<td>Organic chemistry</td>
<td>4 (0.9)</td>
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<tr>
<td>Physical chemistry</td>
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<tr>
<td>Quantum chemistry</td>
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<tr>
<td>Biochemistry</td>
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<tr>
<td>Other chemistry</td>
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<tr>
<td><strong>Earth/Space Sciences</strong></td>
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</tr>
<tr>
<td>Introductory earth science</td>
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<tr>
<td>Astronomy</td>
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<td>Geology</td>
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<td>Meteorology</td>
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<td>Oceanography</td>
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<tr>
<td>Environmental science</td>
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<tr>
<td>Agricultural science</td>
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<td><strong>Life Sciences</strong></td>
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<td>Introductory biology/life science</td>
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<td>Botany, plant physiology</td>
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<td>Cell biology</td>
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<td>Ecology</td>
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<tr>
<td>Entomology</td>
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<td>Genetics, evolution</td>
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<td>Microbiology</td>
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<td>Anatomy/Physiology</td>
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<td>Zoology, animal behavior</td>
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<td>Other life science</td>
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<tr>
<td><strong>Physics</strong></td>
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<td>General/introductory physics</td>
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<tr>
<td>Electricity and magnetism</td>
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<td>Heat and thermodynamics</td>
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<td>Mechanics</td>
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<td>Modern or quantum physics</td>
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<td>Optics</td>
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<td><strong>Other</strong></td>
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</tr>
<tr>
<td>History of science</td>
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<tr>
<td>Philosophy of science</td>
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</tr>
<tr>
<td>Science and society</td>
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<td>Engineering</td>
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<tr>
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<tr>
<td>Other computer science</td>
<td>12 (1.6)</td>
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</table>

* No teachers in the sample selected this response option. Thus, it is not possible to calculate the standard error of this estimate.
### Table STQ 6.1
Number of College Semester† Courses Completed by Grade K–4 Science Teachers

<table>
<thead>
<tr>
<th>Percent of Teachers</th>
<th>Life sciences</th>
<th>Chemistry</th>
<th>Physics/physical science</th>
<th>Earth/space science</th>
<th>Science education</th>
<th>Mathematics</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>9 (1.5)</td>
<td>49 (2.3)</td>
<td>39 (2.4)</td>
<td>17 (1.6)</td>
<td>23 (2.6)</td>
<td>7 (1.2)</td>
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<tr>
<td>1</td>
<td>36 (2.3)</td>
<td>31 (2.1)</td>
<td>34 (2.4)</td>
<td>29 (2.0)</td>
<td>34 (2.2)</td>
<td>18 (1.9)</td>
</tr>
<tr>
<td>2</td>
<td>26 (2.2)</td>
<td>11 (1.3)</td>
<td>16 (1.8)</td>
<td>24 (2.1)</td>
<td>20 (2.1)</td>
<td>26 (2.2)</td>
</tr>
<tr>
<td>3</td>
<td>11 (1.5)</td>
<td>4 (0.9)</td>
<td>6 (1.3)</td>
<td>16 (1.7)</td>
<td>10 (1.3)</td>
<td>18 (1.6)</td>
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<tr>
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<td>0 (0.3)</td>
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<td>8</td>
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<td>0 —*</td>
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<td>5 (0.9)</td>
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</table>

* No teachers in the sample selected this response option. Thus, it is not possible to calculate the standard error of this estimate.
† Questionnaire responses for Quarter Courses have been translated into Semester Courses.

### Table STQ 6.2
Number of College Semester† Courses Completed by Grade 5–8 Science Teachers

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<th>Percent of Teachers</th>
<th>Life sciences</th>
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<th>Physics/physical science</th>
<th>Earth/space science</th>
<th>Science education</th>
<th>Mathematics</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>4 (1.1)</td>
<td>33 (3.7)</td>
<td>31 (2.7)</td>
<td>16 (2.4)</td>
<td>21 (2.7)</td>
<td>7 (1.8)</td>
</tr>
<tr>
<td>1</td>
<td>28 (3.4)</td>
<td>32 (3.5)</td>
<td>28 (3.0)</td>
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<tr>
<td>3</td>
<td>13 (2.2)</td>
<td>7 (1.4)</td>
<td>6 (1.2)</td>
<td>16 (2.5)</td>
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<tr>
<td>4</td>
<td>7 (1.5)</td>
<td>5 (1.0)</td>
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<td>9 (2.2)</td>
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<td>3 (0.8)</td>
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<td>2 (0.7)</td>
<td>1 (0.2)</td>
<td>5 (1.5)</td>
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<td>6</td>
<td>5 (1.6)</td>
<td>2 (0.6)</td>
<td>1 (0.2)</td>
<td>3 (0.6)</td>
<td>4 (1.1)</td>
<td>6 (1.6)</td>
</tr>
<tr>
<td>7</td>
<td>2 (0.8)</td>
<td>0 (0.3)</td>
<td>1 (0.4)</td>
<td>2 (0.9)</td>
<td>1 (0.6)</td>
<td>2 (0.9)</td>
</tr>
<tr>
<td>8</td>
<td>2 (0.6)</td>
<td>1 (0.3)</td>
<td>1 (0.4)</td>
<td>1 (0.3)</td>
<td>1 (0.4)</td>
<td>2 (0.9)</td>
</tr>
<tr>
<td>&gt;8</td>
<td>10 (1.5)</td>
<td>2 (0.5)</td>
<td>2 (0.5)</td>
<td>3 (0.7)</td>
<td>6 (1.5)</td>
<td></td>
</tr>
</tbody>
</table>

† Questionnaire responses for Quarter Courses have been translated into Semester Courses.
<table>
<thead>
<tr>
<th></th>
<th>Life sciences</th>
<th>Chemistry</th>
<th>Physics/physical science</th>
<th>Earth/space science</th>
<th>Science education</th>
<th>Mathematics</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>7 (1.0)</td>
<td>3 (0.5)</td>
<td>7 (0.9)</td>
<td>23 (2.6)</td>
<td>20 (2.3)</td>
<td>2 (0.5)</td>
</tr>
<tr>
<td>1</td>
<td>6 (1.6)</td>
<td>5 (1.2)</td>
<td>10 (1.2)</td>
<td>16 (1.4)</td>
<td>14 (1.4)</td>
<td>7 (0.9)</td>
</tr>
<tr>
<td>2</td>
<td>7 (1.3)</td>
<td>13 (1.3)</td>
<td>30 (2.1)</td>
<td>17 (1.4)</td>
<td>17 (1.6)</td>
<td>20 (1.4)</td>
</tr>
<tr>
<td>3</td>
<td>4 (0.6)</td>
<td>11 (1.1)</td>
<td>9 (1.1)</td>
<td>12 (1.2)</td>
<td>9 (1.0)</td>
<td>15 (1.3)</td>
</tr>
<tr>
<td>4</td>
<td>4 (0.7)</td>
<td>19 (2.0)</td>
<td>12 (1.5)</td>
<td>10 (1.3)</td>
<td>13 (1.5)</td>
<td>18 (2.0)</td>
</tr>
<tr>
<td>5</td>
<td>5 (0.8)</td>
<td>9 (1.0)</td>
<td>5 (0.7)</td>
<td>4 (0.7)</td>
<td>2 (0.4)</td>
<td>6 (0.9)</td>
</tr>
<tr>
<td>6</td>
<td>5 (0.9)</td>
<td>11 (1.1)</td>
<td>9 (1.8)</td>
<td>5 (0.9)</td>
<td>7 (1.0)</td>
<td>11 (1.8)</td>
</tr>
<tr>
<td>7</td>
<td>5 (0.8)</td>
<td>4 (1.4)</td>
<td>3 (0.8)</td>
<td>2 (0.7)</td>
<td>1 (0.5)</td>
<td>4 (1.0)</td>
</tr>
<tr>
<td>8</td>
<td>7 (1.0)</td>
<td>4 (0.6)</td>
<td>3 (0.5)</td>
<td>2 (0.3)</td>
<td>2 (0.5)</td>
<td>3 (0.6)</td>
</tr>
<tr>
<td>&gt;8</td>
<td>50 (2.2)</td>
<td>21 (1.5)</td>
<td>13 (1.2)</td>
<td>9 (1.1)</td>
<td>14 (1.1)</td>
<td>14 (1.4)</td>
</tr>
</tbody>
</table>

*Questionnaire responses for Quarter Courses have been translated into Semester Courses.*
### Table STQ 7a
**Percentage of Science Courses Completed by Science Teachers at a Two-Year College/Community College/Technical School**

<table>
<thead>
<tr>
<th>Percent of Teachers</th>
<th>Grades K–4</th>
<th>Grades 5–8</th>
<th>Grades 9–12</th>
</tr>
</thead>
<tbody>
<tr>
<td>0%</td>
<td>75 (2.2)</td>
<td>74 (3.4)</td>
<td>76 (1.9)</td>
</tr>
<tr>
<td>10%</td>
<td>4 (1.1)</td>
<td>4 (1.5)</td>
<td>10 (1.0)</td>
</tr>
<tr>
<td>20%</td>
<td>3 (1.0)</td>
<td>4 (1.1)</td>
<td>5 (0.9)</td>
</tr>
<tr>
<td>30%</td>
<td>1 (0.5)</td>
<td>2 (0.8)</td>
<td>5 (0.8)</td>
</tr>
<tr>
<td>40%</td>
<td>2 (0.7)</td>
<td>2 (1.0)</td>
<td>3 (0.6)</td>
</tr>
<tr>
<td>50%</td>
<td>8 (1.3)</td>
<td>4 (1.1)</td>
<td>1 (0.2)</td>
</tr>
<tr>
<td>60%</td>
<td>1 (0.5)</td>
<td>1 (0.7)</td>
<td>0 (0.1)</td>
</tr>
<tr>
<td>70%</td>
<td>2 (0.6)</td>
<td>2 (1.5)</td>
<td>0 (0.1)</td>
</tr>
<tr>
<td>80%</td>
<td>1 (0.6)</td>
<td>2 (1.3)</td>
<td>0 (0.1)</td>
</tr>
<tr>
<td>90%</td>
<td>1 (0.7)</td>
<td>4 (2.2)</td>
<td>0 —*</td>
</tr>
<tr>
<td>100%</td>
<td>2 (0.9)</td>
<td>1 (0.8)</td>
<td>0 (0.1)</td>
</tr>
</tbody>
</table>

* No teachers in the sample selected this response option. Thus, it is not possible to calculate the standard error of this estimate.

### Table STQ 7b
**Percentage of Science Courses Completed by Science Teachers at a Four-Year College/University**

<table>
<thead>
<tr>
<th>Percent of Teachers</th>
<th>Grades K–4</th>
<th>Grades 5–8</th>
<th>Grades 9–12</th>
</tr>
</thead>
<tbody>
<tr>
<td>0%</td>
<td>2 (0.9)</td>
<td>1 (0.8)</td>
<td>0 (0.1)</td>
</tr>
<tr>
<td>10%</td>
<td>1 (0.7)</td>
<td>4 (2.2)</td>
<td>0 —*</td>
</tr>
<tr>
<td>20%</td>
<td>2 (0.6)</td>
<td>2 (1.3)</td>
<td>0 (0.1)</td>
</tr>
<tr>
<td>30%</td>
<td>1 (0.6)</td>
<td>2 (1.5)</td>
<td>0 (0.1)</td>
</tr>
<tr>
<td>40%</td>
<td>1 (0.5)</td>
<td>1 (0.7)</td>
<td>0 (0.1)</td>
</tr>
<tr>
<td>50%</td>
<td>8 (1.3)</td>
<td>5 (1.1)</td>
<td>1 (0.2)</td>
</tr>
<tr>
<td>60%</td>
<td>2 (0.7)</td>
<td>2 (1.0)</td>
<td>3 (0.6)</td>
</tr>
<tr>
<td>70%</td>
<td>1 (0.5)</td>
<td>2 (0.8)</td>
<td>5 (0.8)</td>
</tr>
<tr>
<td>80%</td>
<td>3 (1.0)</td>
<td>4 (1.1)</td>
<td>6 (0.9)</td>
</tr>
<tr>
<td>90%</td>
<td>5 (1.1)</td>
<td>4 (1.5)</td>
<td>9 (1.0)</td>
</tr>
<tr>
<td>100%</td>
<td>74 (2.2)</td>
<td>74 (3.4)</td>
<td>76 (1.8)</td>
</tr>
</tbody>
</table>

* No teachers in the sample selected this response option. Thus, it is not possible to calculate the standard error of this estimate.
### Table STQ 8
Science Teachers’ Most Recent College Coursework in Science or The Teaching of Science

<table>
<thead>
<tr>
<th></th>
<th>Percent of Teachers</th>
<th>Grades K–4</th>
<th>Grades 5–8</th>
<th>Grades 9–12</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Science</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1996–2000</td>
<td>19 (2.0)</td>
<td>31 (3.0)</td>
<td>42 (1.7)</td>
<td></td>
</tr>
<tr>
<td>1990–1995</td>
<td>23 (2.0)</td>
<td>23 (2.8)</td>
<td>28 (2.2)</td>
<td></td>
</tr>
<tr>
<td>Prior to 1990</td>
<td>58 (2.7)</td>
<td>46 (4.0)</td>
<td>30 (1.9)</td>
<td></td>
</tr>
<tr>
<td><strong>The Teaching of Science</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1996–2000</td>
<td>22 (1.9)</td>
<td>28 (3.1)</td>
<td>34 (2.0)</td>
<td></td>
</tr>
<tr>
<td>1990–1995</td>
<td>22 (2.5)</td>
<td>19 (2.4)</td>
<td>21 (1.9)</td>
<td></td>
</tr>
<tr>
<td>Prior to 1990</td>
<td>39 (2.8)</td>
<td>33 (3.1)</td>
<td>26 (1.8)</td>
<td></td>
</tr>
<tr>
<td>Never</td>
<td>17 (1.8)</td>
<td>19 (2.4)</td>
<td>19 (1.9)</td>
<td></td>
</tr>
</tbody>
</table>

### Table STQ 9
Time Spent by Science Teachers on In-Service Education in Science or The Teaching of Science

<table>
<thead>
<tr>
<th></th>
<th>Percent of Teachers</th>
<th>Grades K–4</th>
<th>Grades 5–8</th>
<th>Grades 9–12</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>In Last 12 Months</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>52 (2.5)</td>
<td>35 (3.7)</td>
<td>14 (1.2)</td>
<td></td>
</tr>
<tr>
<td>Less than 6 hours</td>
<td>26 (1.9)</td>
<td>26 (3.4)</td>
<td>19 (1.8)</td>
<td></td>
</tr>
<tr>
<td>6–15 hours</td>
<td>15 (2.0)</td>
<td>22 (2.6)</td>
<td>30 (2.3)</td>
<td></td>
</tr>
<tr>
<td>16–35 hours</td>
<td>4 (1.0)</td>
<td>13 (2.3)</td>
<td>17 (1.3)</td>
<td></td>
</tr>
<tr>
<td>More than 35 hours</td>
<td>3 (0.8)</td>
<td>4 (0.8)</td>
<td>20 (2.2)</td>
<td></td>
</tr>
<tr>
<td><strong>In Last 3 Years</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>24 (2.2)</td>
<td>15 (2.4)</td>
<td>8 (1.0)</td>
<td></td>
</tr>
<tr>
<td>Less than 6 hours</td>
<td>26 (2.1)</td>
<td>15 (2.4)</td>
<td>8 (1.5)</td>
<td></td>
</tr>
<tr>
<td>6–15 hours</td>
<td>26 (2.1)</td>
<td>27 (3.5)</td>
<td>16 (1.3)</td>
<td></td>
</tr>
<tr>
<td>16–35 hours</td>
<td>14 (1.7)</td>
<td>25 (3.7)</td>
<td>23 (1.7)</td>
<td></td>
</tr>
<tr>
<td>More than 35 hours</td>
<td>10 (1.5)</td>
<td>18 (2.5)</td>
<td>45 (2.0)</td>
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</tbody>
</table>
Table STQ 10
Science Teachers Participating in Various Professional Activities in Last Twelve Months

<table>
<thead>
<tr>
<th>Activity</th>
<th>Percent of Teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Grades K–4</td>
</tr>
<tr>
<td>Taught any in-service workshops in science or science teaching</td>
<td>2 (0.6)</td>
</tr>
<tr>
<td>Mentored another teacher as part of a formal arrangement that is</td>
<td>15 (2.1)</td>
</tr>
<tr>
<td>recognized or supported by the school or district, not including</td>
<td></td>
</tr>
<tr>
<td>supervision of student teachers</td>
<td></td>
</tr>
<tr>
<td>Received any local, state, or national grants or awards for science</td>
<td>2 (0.6)</td>
</tr>
<tr>
<td>teaching</td>
<td></td>
</tr>
<tr>
<td>Served on a school or district science curriculum committee</td>
<td>13 (1.5)</td>
</tr>
<tr>
<td>Served on a school or district science textbook selection committee</td>
<td>12 (1.5)</td>
</tr>
</tbody>
</table>

Table STQ 11
Science Teachers Participating in Various Professional Development Activities in Past Three Years

<table>
<thead>
<tr>
<th>Activity</th>
<th>Percent of Teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Grades K–4</td>
</tr>
<tr>
<td>Taken a formal college/university science course</td>
<td>12 (1.7)</td>
</tr>
<tr>
<td>Taken a formal college/university course in the teaching of science</td>
<td>14 (2.0)</td>
</tr>
<tr>
<td>Observed other teachers teaching science as part of your own</td>
<td>33 (2.3)</td>
</tr>
<tr>
<td>professional development</td>
<td></td>
</tr>
<tr>
<td>Met with a local group teachers on a regular basis to study/discuss</td>
<td>25 (2.6)</td>
</tr>
<tr>
<td>science teaching issues</td>
<td></td>
</tr>
<tr>
<td>Collaborated on science teaching issues with a group of teachers at a</td>
<td>4 (0.8)</td>
</tr>
<tr>
<td>distance using telecommunications</td>
<td></td>
</tr>
<tr>
<td>Served as a mentor and/or peer coach in science teaching, as part of a</td>
<td>8 (1.9)</td>
</tr>
<tr>
<td>formal arrangement that is recognized or supported by the school or</td>
<td></td>
</tr>
<tr>
<td>district</td>
<td></td>
</tr>
<tr>
<td>Attended a workshop on science teaching</td>
<td>58 (2.7)</td>
</tr>
<tr>
<td>Attended a national or state science teacher association meeting</td>
<td>5 (1.0)</td>
</tr>
<tr>
<td>Applied (or applying) for certification from the National Board for</td>
<td>3 (0.9)</td>
</tr>
<tr>
<td>Professional Teaching Standards (NBPTS)</td>
<td></td>
</tr>
<tr>
<td>Received certification from the National Board for Professional</td>
<td>2 (0.8)</td>
</tr>
<tr>
<td>Teaching Standards (NBPTS)</td>
<td></td>
</tr>
</tbody>
</table>
### Table STQ 12a.1
**Grade K–4 Science Teachers’ Opinions of Their Need for Professional Development Three Years Ago**

<table>
<thead>
<tr>
<th>Percent of Teachers</th>
<th>None Needed</th>
<th>Minor Need</th>
<th>Moderate Need</th>
<th>Substantial Need</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deepening my own science content knowledge</td>
<td>4 (1.2)</td>
<td>25 (2.0)</td>
<td>51 (2.7)</td>
<td>20 (2.3)</td>
</tr>
<tr>
<td>Understanding student thinking in science</td>
<td>5 (1.2)</td>
<td>33 (2.1)</td>
<td>46 (2.6)</td>
<td>16 (2.1)</td>
</tr>
<tr>
<td>Learning how to use inquiry/investigation-oriented teaching strategies</td>
<td>7 (1.6)</td>
<td>28 (1.9)</td>
<td>47 (2.5)</td>
<td>19 (1.8)</td>
</tr>
<tr>
<td>Learning how to use technology in science instruction</td>
<td>3 (0.9)</td>
<td>13 (1.7)</td>
<td>39 (2.7)</td>
<td>46 (2.8)</td>
</tr>
<tr>
<td>Learning how to assess student learning in science</td>
<td>8 (1.6)</td>
<td>32 (2.2)</td>
<td>41 (2.6)</td>
<td>18 (1.9)</td>
</tr>
<tr>
<td>Learning how to teach science in a class that includes students with special needs</td>
<td>11 (2.0)</td>
<td>31 (2.3)</td>
<td>32 (2.3)</td>
<td>26 (2.2)</td>
</tr>
</tbody>
</table>

### Table STQ 12a.2
**Grade 5–8 Science Teachers’ Opinions of Their Need for Professional Development Three Years Ago**

<table>
<thead>
<tr>
<th>Percent of Teachers</th>
<th>None Needed</th>
<th>Minor Need</th>
<th>Moderate Need</th>
<th>Substantial Need</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deepening my own science content knowledge</td>
<td>3 (0.6)</td>
<td>30 (3.2)</td>
<td>46 (3.8)</td>
<td>22 (3.8)</td>
</tr>
<tr>
<td>Understanding student thinking in science</td>
<td>3 (0.8)</td>
<td>38 (3.8)</td>
<td>41 (3.7)</td>
<td>17 (3.3)</td>
</tr>
<tr>
<td>Learning how to use inquiry/investigation-oriented teaching strategies</td>
<td>6 (1.4)</td>
<td>33 (3.1)</td>
<td>37 (3.3)</td>
<td>24 (4.1)</td>
</tr>
<tr>
<td>Learning how to use technology in science instruction</td>
<td>3 (0.7)</td>
<td>19 (3.5)</td>
<td>34 (3.9)</td>
<td>44 (4.5)</td>
</tr>
<tr>
<td>Learning how to assess student learning in science</td>
<td>7 (1.3)</td>
<td>39 (3.0)</td>
<td>38 (3.5)</td>
<td>16 (2.9)</td>
</tr>
<tr>
<td>Learning how to teach science in a class that includes students with special needs</td>
<td>7 (1.6)</td>
<td>34 (3.3)</td>
<td>32 (3.6)</td>
<td>27 (3.1)</td>
</tr>
</tbody>
</table>

### Table STQ 12a.3
**Grade 9–12 Science Teachers’ Opinions of Their Need for Professional Development Three Years Ago**

<table>
<thead>
<tr>
<th>Percent of Teachers</th>
<th>None Needed</th>
<th>Minor Need</th>
<th>Moderate Need</th>
<th>Substantial Need</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deepening my own science content knowledge</td>
<td>13 (1.2)</td>
<td>48 (1.9)</td>
<td>32 (1.8)</td>
<td>6 (1.2)</td>
</tr>
<tr>
<td>Understanding student thinking in science</td>
<td>12 (1.2)</td>
<td>41 (2.2)</td>
<td>38 (2.1)</td>
<td>9 (1.3)</td>
</tr>
<tr>
<td>Learning how to use inquiry/investigation-oriented teaching strategies</td>
<td>12 (1.2)</td>
<td>37 (2.2)</td>
<td>38 (2.3)</td>
<td>14 (1.8)</td>
</tr>
<tr>
<td>Learning how to use technology in science instruction</td>
<td>7 (1.9)</td>
<td>23 (1.8)</td>
<td>41 (2.4)</td>
<td>29 (1.8)</td>
</tr>
<tr>
<td>Learning how to assess student learning in science</td>
<td>14 (1.2)</td>
<td>44 (2.5)</td>
<td>33 (2.0)</td>
<td>9 (1.4)</td>
</tr>
<tr>
<td>Learning how to teach science in a class that includes students with special needs</td>
<td>8 (1.1)</td>
<td>33 (2.1)</td>
<td>38 (2.3)</td>
<td>20 (1.7)</td>
</tr>
</tbody>
</table>
### Table STQ 12b.1
Grade K–4 Science Teachers’ Opinions of Professional Development Emphasis

<table>
<thead>
<tr>
<th></th>
<th>Percent of Teachers</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not at all</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Deepening my own science content knowledge</td>
<td>28 (2.6)</td>
<td>24 (2.1)</td>
<td>30 (2.4)</td>
<td>13 (1.6)</td>
<td>7 (1.4)</td>
<td></td>
</tr>
<tr>
<td>Understanding student thinking in science</td>
<td>27 (2.5)</td>
<td>19 (2.0)</td>
<td>32 (2.3)</td>
<td>15 (1.8)</td>
<td>7 (1.5)</td>
<td></td>
</tr>
<tr>
<td>Learning how to use inquiry/investigation-oriented teaching strategies</td>
<td>23 (2.2)</td>
<td>21 (2.1)</td>
<td>29 (2.2)</td>
<td>18 (1.8)</td>
<td>10 (1.8)</td>
<td></td>
</tr>
<tr>
<td>Learning how to use technology in science instruction</td>
<td>39 (2.9)</td>
<td>22 (2.3)</td>
<td>23 (2.0)</td>
<td>9 (1.4)</td>
<td>7 (1.1)</td>
<td></td>
</tr>
<tr>
<td>Learning how to assess student learning in science</td>
<td>30 (2.5)</td>
<td>23 (2.2)</td>
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<td>13 (1.9)</td>
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<tr>
<td>Learning how to teach science in a class that includes students with special needs</td>
<td>47 (2.5)</td>
<td>25 (2.2)</td>
<td>19 (2.2)</td>
<td>6 (1.3)</td>
<td>3 (0.8)</td>
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### Table STQ 12b.2
Grade 5–8 Science Teachers’ Opinions of Professional Development Emphasis

<table>
<thead>
<tr>
<th></th>
<th>Percent of Teachers</th>
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<td>1</td>
<td>2</td>
<td>3</td>
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<td>5</td>
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<tr>
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<td>21 (3.0)</td>
<td>23 (3.3)</td>
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<tr>
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<td>20 (3.1)</td>
<td>27 (3.1)</td>
<td>26 (3.4)</td>
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<td>5 (1.3)</td>
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<tr>
<td>Learning how to use inquiry/investigation-oriented teaching strategies</td>
<td>15 (2.8)</td>
<td>20 (3.4)</td>
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<td>12 (2.4)</td>
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<td>Learning how to use technology in science instruction</td>
<td>22 (3.3)</td>
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<td>18 (3.0)</td>
<td>27 (3.7)</td>
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<td>22 (3.3)</td>
<td>4 (0.9)</td>
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<tr>
<td></td>
<td>Percent of Teachers</td>
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<tr>
<td></td>
<td>Not at all</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<td>5</td>
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<td>17 (1.9)</td>
<td>10 (1.2)</td>
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<tr>
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<td>19 (1.8)</td>
<td>26 (1.6)</td>
<td>34 (2.1)</td>
<td>15 (1.4)</td>
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<tr>
<td>Learning how to use technology in science instruction</td>
<td>11 (1.3)</td>
<td>19 (1.6)</td>
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<td>30 (2.3)</td>
<td>17 (1.6)</td>
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<td>19 (1.8)</td>
<td>27 (1.9)</td>
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### Table STQ 12c.1
**Grade K–4 Science Teachers Rating**
**Impact of Their Professional Development**

<table>
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<tr>
<th>Impact of Professional Development</th>
<th>Little or no impact</th>
<th>Confirmed what I was already doing</th>
<th>Caused me to change my teaching practices</th>
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</thead>
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<tr>
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<td>36 (2.8)</td>
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<td>16 (2.1)</td>
</tr>
<tr>
<td>Understanding student thinking in science</td>
<td>38 (2.6)</td>
<td>43 (2.5)</td>
<td>18 (2.4)</td>
</tr>
<tr>
<td>Learning how to use inquiry/investigation-oriented teaching strategies</td>
<td>39 (2.5)</td>
<td>36 (2.0)</td>
<td>25 (2.3)</td>
</tr>
<tr>
<td>Learning how to use technology in science instruction</td>
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<td>18 (2.1)</td>
<td>19 (2.1)</td>
</tr>
<tr>
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<td>41 (2.5)</td>
<td>13 (2.1)</td>
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<tr>
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### Table STQ 12c.2
**Grade 5–8 Science Teachers Rating**
**Impact of Their Professional Development**

<table>
<thead>
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<th>Impact of Professional Development</th>
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<th>Confirmed what I was already doing</th>
<th>Caused me to change my teaching practices</th>
</tr>
</thead>
<tbody>
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<td>26 (3.3)</td>
<td>51 (3.6)</td>
<td>23 (2.5)</td>
</tr>
<tr>
<td>Understanding student thinking in science</td>
<td>27 (3.4)</td>
<td>54 (3.5)</td>
<td>19 (2.9)</td>
</tr>
<tr>
<td>Learning how to use inquiry/investigation-oriented teaching strategies</td>
<td>24 (3.2)</td>
<td>46 (3.7)</td>
<td>30 (3.2)</td>
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<tr>
<td>Learning how to use technology in science instruction</td>
<td>43 (3.6)</td>
<td>26 (3.2)</td>
<td>30 (3.5)</td>
</tr>
<tr>
<td>Learning how to assess student learning in science</td>
<td>31 (3.6)</td>
<td>49 (3.8)</td>
<td>20 (2.5)</td>
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### Table STQ 12c.3
**Grade 9–12 Science Teachers Rating**
**Impact of Their Professional Development**

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<th>Little or no impact</th>
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<th>Caused me to change my teaching practices</th>
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<td>Deepening my own science content knowledge</td>
<td>30 (1.7)</td>
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<td>Understanding student thinking in science</td>
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<td>56 (2.0)</td>
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</tr>
<tr>
<td>Learning how to use inquiry/investigation-oriented teaching strategies</td>
<td>25 (1.8)</td>
<td>48 (2.0)</td>
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<td>Learning how to use technology in science instruction</td>
<td>29 (2.0)</td>
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<td>40 (2.1)</td>
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<td>Learning how to assess student learning in science</td>
<td>33 (2.1)</td>
<td>50 (2.1)</td>
<td>16 (1.6)</td>
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<td>Learning how to teach science in a class that includes students with special needs</td>
<td>55 (2.6)</td>
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### Table STQ 13a
Science Teachers in Self-Contained Classrooms

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<tr>
<th>Grades</th>
<th>Percent of Teachers</th>
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<tr>
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<tr>
<td>Grades 5–8</td>
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<tr>
<td>Grades 9–12</td>
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### Table STQ 13b
Grade K–4 Science Teachers in Self-Contained Classrooms Perceptions of Their Qualifications

<table>
<thead>
<tr>
<th>Subject</th>
<th>Not Well Qualified</th>
<th>Adequately Qualified</th>
<th>Very Well Qualified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Life science</td>
<td>10 (1.8)</td>
<td>63 (3.0)</td>
<td>27 (2.3)</td>
</tr>
<tr>
<td>Earth science</td>
<td>13 (1.9)</td>
<td>63 (2.5)</td>
<td>24 (2.0)</td>
</tr>
<tr>
<td>Physical science</td>
<td>27 (2.7)</td>
<td>60 (3.0)</td>
<td>14 (1.6)</td>
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<td>Mathematics</td>
<td>1 (0.6)</td>
<td>34 (1.9)</td>
<td>65 (2.0)</td>
</tr>
<tr>
<td>Reading/Language Arts</td>
<td>1 (0.4)</td>
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<td>78 (2.2)</td>
</tr>
<tr>
<td>Social Studies</td>
<td>4 (1.1)</td>
<td>45 (2.8)</td>
<td>51 (2.7)</td>
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### Table STQ 13c
Number of Days per Week and Minutes per Day Grade K–4 Self-Contained Science Classes Spend on Various Subjects

<table>
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<tr>
<th>Subject</th>
<th>Average Number of Days per Week</th>
<th>Average Number of Minutes</th>
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<tr>
<td>Mathematics</td>
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<tr>
<td>Science</td>
<td>3.2 (0.1)</td>
<td>24 (0.6)</td>
</tr>
<tr>
<td>Social Studies</td>
<td>3.0 (0.1)</td>
<td>22 (0.7)</td>
</tr>
<tr>
<td>Reading/Language Arts</td>
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### Table STQ 14
Science Teachers in Non-Self-Contained Classrooms Descriptions of Their Class Organization

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<th>Class Organization</th>
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<td>Departmentalized Instruction</td>
<td>Grades K–4 33 (8.0)</td>
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<tr>
<td>Elementary Enrichment Class</td>
<td>Grades K–4 17 (6.1)</td>
</tr>
<tr>
<td>Team Teaching</td>
<td>Grades K–4 50 (8.2)</td>
</tr>
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</table>
Table STQ 15a.2
Grade 5–8 Science Teachers’ Perceptions of Their Qualifications to Teach Each of a Number of Subjects

<table>
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<tr>
<th>Category</th>
<th>Not Well Qualified</th>
<th>Adequately Qualified</th>
<th>Very Well Qualified</th>
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<tbody>
<tr>
<td><strong>Earth Science</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Earth’s features and physical processes</td>
<td>10 (2.4)</td>
<td>51 (3.8)</td>
<td>38 (3.8)</td>
</tr>
<tr>
<td>The solar system and the universe</td>
<td>11 (2.2)</td>
<td>52 (4.0)</td>
<td>37 (3.9)</td>
</tr>
<tr>
<td>Climate and weather</td>
<td>15 (3.3)</td>
<td>53 (4.2)</td>
<td>32 (3.7)</td>
</tr>
<tr>
<td><strong>Biology</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Structure and function of human systems</td>
<td>9 (2.1)</td>
<td>41 (3.8)</td>
<td>50 (3.9)</td>
</tr>
<tr>
<td>Plant biology</td>
<td>11 (2.5)</td>
<td>44 (3.8)</td>
<td>45 (3.5)</td>
</tr>
<tr>
<td>Animal behavior</td>
<td>11 (2.5)</td>
<td>45 (4.1)</td>
<td>45 (3.8)</td>
</tr>
<tr>
<td>Interactions of living things/ecology</td>
<td>6 (1.9)</td>
<td>41 (3.9)</td>
<td>53 (4.0)</td>
</tr>
<tr>
<td>Genetics and evolution</td>
<td>27 (3.9)</td>
<td>45 (3.9)</td>
<td>28 (2.7)</td>
</tr>
<tr>
<td><strong>Chemistry</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Structure of matter and chemical bonding</td>
<td>26 (3.5)</td>
<td>45 (4.0)</td>
<td>29 (3.4)</td>
</tr>
<tr>
<td>Properties and states of matter</td>
<td>16 (3.4)</td>
<td>38 (3.7)</td>
<td>45 (3.7)</td>
</tr>
<tr>
<td>Chemical reactions</td>
<td>24 (3.6)</td>
<td>48 (4.2)</td>
<td>28 (3.5)</td>
</tr>
<tr>
<td>Energy and chemical change</td>
<td>24 (3.7)</td>
<td>50 (4.0)</td>
<td>26 (3.1)</td>
</tr>
<tr>
<td><strong>Physics</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Forces and motion</td>
<td>24 (3.9)</td>
<td>51 (4.0)</td>
<td>25 (3.2)</td>
</tr>
<tr>
<td>Energy</td>
<td>19 (3.2)</td>
<td>56 (3.8)</td>
<td>25 (3.2)</td>
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<tr>
<td>Light and sound</td>
<td>30 (3.7)</td>
<td>48 (3.9)</td>
<td>22 (3.2)</td>
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<td>Electricity and magnetism</td>
<td>28 (3.3)</td>
<td>52 (4.1)</td>
<td>20 (3.1)</td>
</tr>
<tr>
<td>Modern physics</td>
<td>63 (3.6)</td>
<td>30 (3.2)</td>
<td>7 (2.1)</td>
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<tr>
<td><strong>Environmental and resource issues</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Pollution, acid rain, global warming</td>
<td>10 (2.0)</td>
<td>46 (3.7)</td>
<td>44 (3.6)</td>
</tr>
<tr>
<td>Population, food supply and production</td>
<td>14 (2.9)</td>
<td>46 (3.6)</td>
<td>40 (3.8)</td>
</tr>
<tr>
<td><strong>Science process/inquiry skills</strong></td>
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<td></td>
</tr>
<tr>
<td>Formulating hypotheses, drawing conclusions, making generalizations</td>
<td>5 (2.1)</td>
<td>38 (4.3)</td>
<td>57 (4.5)</td>
</tr>
<tr>
<td>Experimental design</td>
<td>15 (3.3)</td>
<td>43 (3.9)</td>
<td>42 (4.1)</td>
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<tr>
<td>Describing, graphing, and interpreting data</td>
<td>7 (2.2)</td>
<td>40 (4.1)</td>
<td>53 (4.1)</td>
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**Table STQ 15a.3**  
Grade 9–12 Science Teachers’ Perceptions of Their Qualifications to Teach Each of a Number of Subjects

<table>
<thead>
<tr>
<th>Subject</th>
<th>Not Well Qualified</th>
<th>Adequately Qualified</th>
<th>Very Well Qualified</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Earth Science</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Earth’s features and physical processes</td>
<td>26 (1.8)</td>
<td>50 (2.4)</td>
<td>24 (1.9)</td>
</tr>
<tr>
<td>The solar system and the universe</td>
<td>32 (2.0)</td>
<td>42 (2.4)</td>
<td>26 (1.9)</td>
</tr>
<tr>
<td>Climate and weather</td>
<td>29 (1.7)</td>
<td>51 (2.0)</td>
<td>20 (1.5)</td>
</tr>
<tr>
<td><strong>Biology</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Structure and function of human systems</td>
<td>20 (1.7)</td>
<td>22 (1.9)</td>
<td>58 (2.4)</td>
</tr>
<tr>
<td>Plant biology</td>
<td>23 (1.8)</td>
<td>30 (2.2)</td>
<td>47 (2.4)</td>
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<td>Animal behavior</td>
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<td>49 (2.4)</td>
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<tr>
<td>Interactions of living things/ecology</td>
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<td>24 (2.0)</td>
<td>58 (2.3)</td>
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<tr>
<td>Genetics and evolution</td>
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<td>24 (1.8)</td>
<td>56 (2.3)</td>
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<td>Structure and function of matter and chemical bonding</td>
<td>7 (0.9)</td>
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<td>Properties and states of matter</td>
<td>6 (0.8)</td>
<td>33 (1.9)</td>
<td>61 (2.0)</td>
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<td>Chemical reactions</td>
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<td>30 (1.9)</td>
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<tr>
<td>Modern physics</td>
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<td><strong>Environmental and resource issues</strong></td>
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<tr>
<td>Pollution, acid rain, global warming</td>
<td>10 (1.1)</td>
<td>45 (2.5)</td>
<td>45 (2.3)</td>
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<tr>
<td>Population, food supply and production</td>
<td>15 (1.4)</td>
<td>42 (2.1)</td>
<td>43 (2.1)</td>
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<td>1 (0.6)</td>
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<td>61 (1.8)</td>
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There is no table for STQ 15b.

There is no table for STQ 16.

There is no table for STQ 17a.

There is no table for STQ 17b.
### Table STQ 18a
Average Number of Students in Science Classes

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<tbody>
<tr>
<td>Grades K–4</td>
<td>21.5 (0.3)</td>
</tr>
<tr>
<td>Grades 5–8</td>
<td>23.3 (0.3)</td>
</tr>
<tr>
<td>Grades 9–12</td>
<td>21.7 (0.4)</td>
</tr>
</tbody>
</table>

### Table STQ 18b
Race/Ethnicity of Students in Science Classes

<table>
<thead>
<tr>
<th></th>
<th>Percent of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Grades K–4</td>
</tr>
<tr>
<td>American Indian or Alaskan Native</td>
<td>1 (0.4)</td>
</tr>
<tr>
<td>Asian</td>
<td>3 (0.5)</td>
</tr>
<tr>
<td>Black or African American</td>
<td>17 (2.3)</td>
</tr>
<tr>
<td>Hispanic or Latino</td>
<td>15 (1.7)</td>
</tr>
<tr>
<td>Native Hawaiian/or other Pacific Islander</td>
<td>1 (0.1)</td>
</tr>
<tr>
<td>White</td>
<td>64 (3.0)</td>
</tr>
</tbody>
</table>

There is no table for STQ 19a.

### Table STQ 19b
Calendar Duration of Science Classes

<table>
<thead>
<tr>
<th></th>
<th>Percent of Classes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Grades K–4</td>
</tr>
<tr>
<td>Year</td>
<td>94 (4.2)</td>
</tr>
<tr>
<td>Semester</td>
<td>5 (4.1)</td>
</tr>
<tr>
<td>Quarter</td>
<td>1 (0.8)</td>
</tr>
</tbody>
</table>

### Table STQ 20
Students Assigned to Science Classes by Ability Level

<table>
<thead>
<tr>
<th></th>
<th>Percent of Classes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Grades K–4</td>
</tr>
<tr>
<td>Grades K–4</td>
<td>6 (1.2)</td>
</tr>
<tr>
<td>Grades 5–8</td>
<td>14 (1.5)</td>
</tr>
<tr>
<td>Grades 9–12</td>
<td>40 (2.3)</td>
</tr>
</tbody>
</table>
### Table STQ 21
**Ability Grouping of Students in Science Classes**

<table>
<thead>
<tr>
<th>Category</th>
<th>Percent of Classes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Grades K–4</td>
</tr>
<tr>
<td>Fairly homogeneous and low in ability</td>
<td>6          (1.6)</td>
</tr>
<tr>
<td>Fairly homogeneous and average in ability</td>
<td>28         (2.4)</td>
</tr>
<tr>
<td>Fairly homogeneous and high in ability</td>
<td>5          (1.3)</td>
</tr>
<tr>
<td>Heterogeneous, with a mixture of two or more ability levels</td>
<td>62         (2.6)</td>
</tr>
</tbody>
</table>

---

### Table STQ 22
**Science Classes with One or More Students with Special Needs**

<table>
<thead>
<tr>
<th>Condition</th>
<th>Percent of Classes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Grades K–4</td>
</tr>
<tr>
<td>Limited English Proficiency</td>
<td>38          (2.8)</td>
</tr>
<tr>
<td>Learning Disabled</td>
<td>50          (2.6)</td>
</tr>
<tr>
<td>Mentally Handicapped</td>
<td>8           (1.3)</td>
</tr>
<tr>
<td>Physically Handicapped</td>
<td>7           (1.5)</td>
</tr>
</tbody>
</table>

---

### Table STQ 23.1
**Emphasis Given in Grade K–4 Science Classes to Various Instructional Objectives**

<table>
<thead>
<tr>
<th>Objective</th>
<th>Percent of Classes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>None</td>
</tr>
<tr>
<td>Increase students’ interest in science</td>
<td>1    (0.5)</td>
</tr>
<tr>
<td>Learn basic science concepts</td>
<td>0    (0.5)</td>
</tr>
<tr>
<td>Learn important terms and facts of science</td>
<td>0    (0.5)</td>
</tr>
<tr>
<td>Learn science process/inquiry skills</td>
<td>1    (0.5)</td>
</tr>
<tr>
<td>Prepare for further study in science</td>
<td>3    (0.9)</td>
</tr>
<tr>
<td>Learn to evaluate arguments based on scientific evidence</td>
<td>18   (1.7)</td>
</tr>
<tr>
<td>Learn how to communicate ideas in science effectively</td>
<td>4    (1.1)</td>
</tr>
<tr>
<td>Learn about the applications of science in business and industry</td>
<td>23   (2.2)</td>
</tr>
<tr>
<td>Learn about the relationship between science, technology, and society</td>
<td>12   (1.7)</td>
</tr>
<tr>
<td>Learn about the history and nature of science</td>
<td>20   (2.0)</td>
</tr>
<tr>
<td>Prepare for standardized tests</td>
<td>21   (2.2)</td>
</tr>
</tbody>
</table>
### Table STQ 23.2

**Emphasis Given in Grade 5–8 Science Classes to Various Instructional Objectives**

<table>
<thead>
<tr>
<th>Percent of Classes</th>
<th>None</th>
<th>Minimal Emphasis</th>
<th>Moderate Emphasis</th>
<th>Heavy Emphasis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase students’ interest in science</td>
<td>0 (0.1)</td>
<td>2 (0.8)</td>
<td>40 (2.7)</td>
<td>58 (2.9)</td>
</tr>
<tr>
<td>Learn basic science concepts</td>
<td>0 (0.0)</td>
<td>1 (0.5)</td>
<td>23 (2.0)</td>
<td>76 (2.1)</td>
</tr>
<tr>
<td>Learn important terms and facts of science</td>
<td>0 (0.0)</td>
<td>8 (1.3)</td>
<td>49 (2.9)</td>
<td>43 (2.9)</td>
</tr>
<tr>
<td>Learn science process/inquiry skills</td>
<td>0 (0.1)</td>
<td>3 (0.9)</td>
<td>32 (2.7)</td>
<td>64 (2.7)</td>
</tr>
<tr>
<td>Prepare for further study in science</td>
<td>0 (0.1)</td>
<td>15 (1.8)</td>
<td>46 (2.5)</td>
<td>39 (2.3)</td>
</tr>
<tr>
<td>Learn to evaluate arguments based on scientific evidence</td>
<td>3 (1.2)</td>
<td>26 (2.5)</td>
<td>51 (3.2)</td>
<td>21 (2.4)</td>
</tr>
<tr>
<td>Learn how to communicate ideas in science effectively</td>
<td>1 (1.0)</td>
<td>9 (1.5)</td>
<td>51 (2.5)</td>
<td>39 (2.6)</td>
</tr>
<tr>
<td>Learn the applications of science in business and industry</td>
<td>4 (1.0)</td>
<td>40 (2.8)</td>
<td>45 (2.7)</td>
<td>11 (1.4)</td>
</tr>
<tr>
<td>Learn about the relationship between science, technology, and society</td>
<td>2 (0.9)</td>
<td>25 (2.7)</td>
<td>48 (2.5)</td>
<td>24 (2.3)</td>
</tr>
<tr>
<td>Learn about the history and nature of science</td>
<td>4 (1.3)</td>
<td>39 (2.8)</td>
<td>46 (2.9)</td>
<td>11 (1.7)</td>
</tr>
<tr>
<td>Prepare for standardized tests</td>
<td>11 (1.8)</td>
<td>31 (2.3)</td>
<td>36 (2.3)</td>
<td>23 (2.1)</td>
</tr>
</tbody>
</table>

### Table STQ 23.3

**Emphasis Given in Grade 9–12 Science Classes to Various Instructional Objectives**

<table>
<thead>
<tr>
<th>Percent of Classes</th>
<th>None</th>
<th>Minimal Emphasis</th>
<th>Moderate Emphasis</th>
<th>Heavy Emphasis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase students’ interest in science</td>
<td>0 (0.1)</td>
<td>6 (1.0)</td>
<td>49 (2.4)</td>
<td>45 (2.5)</td>
</tr>
<tr>
<td>Learn basic science concepts</td>
<td>0 (0.1)</td>
<td>2 (0.5)</td>
<td>17 (1.3)</td>
<td>81 (1.3)</td>
</tr>
<tr>
<td>Learn important terms and facts of science</td>
<td>0 (0.1)</td>
<td>9 (1.3)</td>
<td>39 (2.1)</td>
<td>52 (2.5)</td>
</tr>
<tr>
<td>Learn science process/inquiry skills</td>
<td>0 (0.3)</td>
<td>3 (0.6)</td>
<td>31 (2.2)</td>
<td>65 (2.2)</td>
</tr>
<tr>
<td>Prepare for further study in science</td>
<td>1 (0.2)</td>
<td>11 (1.2)</td>
<td>40 (2.4)</td>
<td>48 (2.4)</td>
</tr>
<tr>
<td>Learn to evaluate arguments based on scientific evidence</td>
<td>2 (0.5)</td>
<td>21 (1.8)</td>
<td>49 (2.4)</td>
<td>29 (1.9)</td>
</tr>
<tr>
<td>Learn how to communicate ideas in science effectively</td>
<td>1 (0.3)</td>
<td>13 (1.6)</td>
<td>47 (2.2)</td>
<td>39 (2.3)</td>
</tr>
<tr>
<td>Learn the applications of science in business and industry</td>
<td>3 (0.7)</td>
<td>28 (1.8)</td>
<td>49 (2.0)</td>
<td>20 (2.2)</td>
</tr>
<tr>
<td>Learn about the relationship between science, technology, and society</td>
<td>2 (0.4)</td>
<td>18 (1.4)</td>
<td>51 (2.2)</td>
<td>29 (2.0)</td>
</tr>
<tr>
<td>Learn about the history and nature of science</td>
<td>4 (0.8)</td>
<td>41 (2.3)</td>
<td>45 (2.3)</td>
<td>11 (0.9)</td>
</tr>
<tr>
<td>Prepare for standardized tests</td>
<td>11 (1.5)</td>
<td>32 (2.0)</td>
<td>36 (2.5)</td>
<td>21 (1.5)</td>
</tr>
</tbody>
</table>
### Table STQ 24.1
#### Grade K–4 Science Teachers Report
Using Various Strategies in Their Classrooms

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Percent of Classes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Never</td>
</tr>
<tr>
<td>Introduce content through formal presentations</td>
<td>4 (0.9)</td>
</tr>
<tr>
<td>Pose open-ended questions</td>
<td>1 (0.5)</td>
</tr>
<tr>
<td>Engage the whole class in discussions</td>
<td>0 (0.5)</td>
</tr>
<tr>
<td>Require students to supply evidence to support their claims</td>
<td>5 (1.1)</td>
</tr>
<tr>
<td>Ask students to explain concepts to one another</td>
<td>3 (1.0)</td>
</tr>
<tr>
<td>Ask students to consider alternative explanations</td>
<td>4 (1.1)</td>
</tr>
<tr>
<td>Allow students to work at their own pace</td>
<td>2 (0.9)</td>
</tr>
<tr>
<td>Help students see connections between science and other disciplines</td>
<td>1 (0.6)</td>
</tr>
<tr>
<td>Assign science homework</td>
<td>18 (1.6)</td>
</tr>
<tr>
<td>Read and comment on the reflections students have written</td>
<td>18 (1.9)</td>
</tr>
</tbody>
</table>

### Table STQ 24.2
#### Grade 5–8 Science Teachers Report
Using Various Strategies in Their Classrooms

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Percent of Classes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Never</td>
</tr>
<tr>
<td>Introduce content through formal presentations</td>
<td>1 (0.9)</td>
</tr>
<tr>
<td>Pose open-ended questions</td>
<td>0 (0.0)</td>
</tr>
<tr>
<td>Engage the whole class in discussions</td>
<td>0 (0.0)</td>
</tr>
<tr>
<td>Require students to supply evidence to support their claims</td>
<td>0 (0.3)</td>
</tr>
<tr>
<td>Ask students to explain concepts to one another</td>
<td>1 (0.7)</td>
</tr>
<tr>
<td>Ask students to consider alternative explanations</td>
<td>1 (0.5)</td>
</tr>
<tr>
<td>Allow students to work at their own pace</td>
<td>2 (0.7)</td>
</tr>
<tr>
<td>Help students see connections between science and other disciplines</td>
<td>0 (0.4)</td>
</tr>
<tr>
<td>Assign science homework</td>
<td>0 (0.3)</td>
</tr>
<tr>
<td>Read and comment on the reflections students have written</td>
<td>11 (1.9)</td>
</tr>
</tbody>
</table>
### Table STQ 24.3
**Grade 9–12 Science Teachers Report**
**Using Various Strategies in Their Classrooms**

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Percent of Classes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Never</td>
</tr>
<tr>
<td>Introduce content through formal presentations</td>
<td>0 (0.2)</td>
</tr>
<tr>
<td>Pose open-ended questions</td>
<td>0 (0.2)</td>
</tr>
<tr>
<td>Engage the whole class in discussions</td>
<td>0 (0.1)</td>
</tr>
<tr>
<td>Require students to supply evidence to support their claims</td>
<td>0 (0.1)</td>
</tr>
<tr>
<td>Ask students to explain concepts to one another</td>
<td>1 (0.5)</td>
</tr>
<tr>
<td>Ask students to consider alternative explanations</td>
<td>1 (0.3)</td>
</tr>
<tr>
<td>Allow students to work at their own pace</td>
<td>2 (0.6)</td>
</tr>
<tr>
<td>Help students see connections between science and other disciplines</td>
<td>0 (0.2)</td>
</tr>
<tr>
<td>Assign science homework</td>
<td>1 (0.3)</td>
</tr>
<tr>
<td>Read and comment on the reflections students have written</td>
<td>25 (2.4)</td>
</tr>
<tr>
<td>Activity</td>
<td>Percent of Classes</td>
</tr>
<tr>
<td>------------------------------------------------------------</td>
<td>--------------------</td>
</tr>
<tr>
<td></td>
<td>Never</td>
</tr>
<tr>
<td>Listen and take notes during presentation by teacher</td>
<td>47 (2.2)</td>
</tr>
<tr>
<td>Watch a science demonstration</td>
<td>2 (0.6)</td>
</tr>
<tr>
<td>Work in groups</td>
<td>1 (0.8)</td>
</tr>
<tr>
<td>Read from a science textbook in class</td>
<td>32 (2.2)</td>
</tr>
<tr>
<td>Read other science-related materials in class</td>
<td>8 (1.8)</td>
</tr>
<tr>
<td>Do hands-on/laboratory science activities or investigations</td>
<td>3 (0.8)</td>
</tr>
<tr>
<td>Follow specific instructions in an activity or investigation</td>
<td>3 (0.8)</td>
</tr>
<tr>
<td>Design or implement their own investigation</td>
<td>25 (2.1)</td>
</tr>
<tr>
<td>Participate in field work</td>
<td>41 (2.4)</td>
</tr>
<tr>
<td>Answer textbook or worksheet questions</td>
<td>21 (2.1)</td>
</tr>
<tr>
<td>Record, represent, and/or analyze data</td>
<td>9 (1.3)</td>
</tr>
<tr>
<td>Write reflections</td>
<td>23 (2.2)</td>
</tr>
<tr>
<td>Prepare written science reports</td>
<td>41 (2.4)</td>
</tr>
<tr>
<td>Make formal presentations to the rest of the class</td>
<td>40 (2.4)</td>
</tr>
<tr>
<td>Work on extended science investigations or projects</td>
<td>30 (2.4)</td>
</tr>
<tr>
<td>Use computers as a tool</td>
<td>64 (2.4)</td>
</tr>
<tr>
<td>Use mathematics as a tool in problem-solving</td>
<td>15 (1.6)</td>
</tr>
<tr>
<td>Take field trips</td>
<td>17 (2.1)</td>
</tr>
<tr>
<td>Watch audiovisual presentations</td>
<td>6 (1.2)</td>
</tr>
<tr>
<td>Activity</td>
<td>Never</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
<td>-------</td>
</tr>
<tr>
<td>Listen and take notes during presentation by teacher</td>
<td>2 (0.7)</td>
</tr>
<tr>
<td>Watch a science demonstration</td>
<td>0 (0.3)</td>
</tr>
<tr>
<td>Work in groups</td>
<td>0 (0.2)</td>
</tr>
<tr>
<td>Read from a science textbook in class</td>
<td>7 (1.6)</td>
</tr>
<tr>
<td>Read other science-related materials in class</td>
<td>2 (0.6)</td>
</tr>
<tr>
<td>Do hands-on/laboratory science activities or investigations</td>
<td>0 (0.1)</td>
</tr>
<tr>
<td>Follow specific instructions in an activity or investigation</td>
<td>0 (0.1)</td>
</tr>
<tr>
<td>Design or implement their own investigation</td>
<td>3 (0.8)</td>
</tr>
<tr>
<td>Participate in field work</td>
<td>21 (2.8)</td>
</tr>
<tr>
<td>Answer textbook or worksheet questions</td>
<td>3 (1.2)</td>
</tr>
<tr>
<td>Record, represent, and/or analyze data</td>
<td>1 (0.3)</td>
</tr>
<tr>
<td>Write reflections</td>
<td>16 (2.1)</td>
</tr>
<tr>
<td>Prepare written science reports</td>
<td>5 (1.4)</td>
</tr>
<tr>
<td>Make formal presentations to the rest of the class</td>
<td>5 (1.2)</td>
</tr>
<tr>
<td>Work on extended science investigations or projects</td>
<td>7 (1.4)</td>
</tr>
<tr>
<td>Use computers as a tool</td>
<td>24 (2.4)</td>
</tr>
<tr>
<td>Use mathematics as a tool in problem-solving</td>
<td>3 (1.0)</td>
</tr>
<tr>
<td>Take field trips</td>
<td>21 (2.3)</td>
</tr>
<tr>
<td>Watch audiovisual presentations</td>
<td>2 (0.8)</td>
</tr>
<tr>
<td>Activity</td>
<td>Never</td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
<td>-------</td>
</tr>
<tr>
<td>Listen and take notes during presentation by teacher</td>
<td>0 (0.1)</td>
</tr>
<tr>
<td>Watch a science demonstration</td>
<td>1 (0.2)</td>
</tr>
<tr>
<td>Work in groups</td>
<td>0 (0.1)</td>
</tr>
<tr>
<td>Read from a science textbook in class</td>
<td>15 (1.4)</td>
</tr>
<tr>
<td>Read other science-related materials in class</td>
<td>10 (1.2)</td>
</tr>
<tr>
<td>Do hands-on/laboratory science activities or investigations</td>
<td>1 (0.2)</td>
</tr>
<tr>
<td>Follow specific instructions in an activity or investigation</td>
<td>0 (0.2)</td>
</tr>
<tr>
<td>Design or implement their own investigation</td>
<td>8 (0.9)</td>
</tr>
<tr>
<td>Participate in field work</td>
<td>32 (2.1)</td>
</tr>
<tr>
<td>Answer textbook or worksheet questions</td>
<td>1 (0.3)</td>
</tr>
<tr>
<td>Record, represent, and/or analyze data</td>
<td>1 (0.4)</td>
</tr>
<tr>
<td>Write reflections</td>
<td>39 (2.5)</td>
</tr>
<tr>
<td>Prepare written science reports</td>
<td>7 (1.2)</td>
</tr>
<tr>
<td>Make formal presentations to the rest of the class</td>
<td>17 (1.5)</td>
</tr>
<tr>
<td>Work on extended science investigations or projects</td>
<td>17 (1.4)</td>
</tr>
<tr>
<td>Use computers as a tool</td>
<td>21 (1.6)</td>
</tr>
<tr>
<td>Use mathematics as a tool in problem-solving</td>
<td>5 (0.9)</td>
</tr>
<tr>
<td>Take field trips</td>
<td>50 (2.4)</td>
</tr>
<tr>
<td>Watch audiovisual presentations</td>
<td>3 (0.5)</td>
</tr>
</tbody>
</table>
Table STQ 26.1
Grade K–4 Science Teachers Report
Use of Computers in Their Classrooms

<table>
<thead>
<tr>
<th>Activity</th>
<th>Percent of Classes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Never</td>
</tr>
<tr>
<td>Do drill and practice</td>
<td>57 (2.6)</td>
</tr>
<tr>
<td>Demonstrate scientific principles</td>
<td>70 (2.2)</td>
</tr>
<tr>
<td>Play science learning games</td>
<td>48 (2.4)</td>
</tr>
<tr>
<td>Do laboratory simulations</td>
<td>79 (1.6)</td>
</tr>
<tr>
<td>Collect data using sensors or probes</td>
<td>84 (1.7)</td>
</tr>
<tr>
<td>Retrieve or exchange data</td>
<td>73 (2.1)</td>
</tr>
<tr>
<td>Solve problems using simulations</td>
<td>76 (2.1)</td>
</tr>
<tr>
<td>Take a test or quiz</td>
<td>77 (2.2)</td>
</tr>
</tbody>
</table>

Table STQ 26.2
Grade 5–8 Science Teachers Report
Use of Computers in Their Classrooms

<table>
<thead>
<tr>
<th>Activity</th>
<th>Percent of Classes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Never</td>
</tr>
<tr>
<td>Do drill and practice</td>
<td>57 (2.7)</td>
</tr>
<tr>
<td>Demonstrate scientific principles</td>
<td>45 (3.1)</td>
</tr>
<tr>
<td>Play science learning games</td>
<td>46 (2.6)</td>
</tr>
<tr>
<td>Do laboratory simulations</td>
<td>56 (3.0)</td>
</tr>
<tr>
<td>Collect data using sensors or probes</td>
<td>69 (2.7)</td>
</tr>
<tr>
<td>Retrieve or exchange data</td>
<td>44 (2.6)</td>
</tr>
<tr>
<td>Solve problems using simulations</td>
<td>55 (3.2)</td>
</tr>
<tr>
<td>Take a test or quiz</td>
<td>61 (2.9)</td>
</tr>
</tbody>
</table>

* No teachers in the sample selected this response option. Thus, it is not possible to calculate the standard error of this estimate.

Table STQ 26.3
Grade 9–12 Science Teachers Report
Use of Computers in Their Classrooms

<table>
<thead>
<tr>
<th>Activity</th>
<th>Percent of Classes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Never</td>
</tr>
<tr>
<td>Do drill and practice</td>
<td>56 (2.2)</td>
</tr>
<tr>
<td>Demonstrate scientific principles</td>
<td>43 (2.2)</td>
</tr>
<tr>
<td>Play science learning games</td>
<td>59 (2.5)</td>
</tr>
<tr>
<td>Do laboratory simulations</td>
<td>45 (2.2)</td>
</tr>
<tr>
<td>Collect data using sensors or probes</td>
<td>55 (2.3)</td>
</tr>
<tr>
<td>Retrieve or exchange data</td>
<td>43 (2.3)</td>
</tr>
<tr>
<td>Solve problems using simulations</td>
<td>54 (2.3)</td>
</tr>
<tr>
<td>Take a test or quiz</td>
<td>69 (2.5)</td>
</tr>
<tr>
<td>Activity</td>
<td>Percent of Classes</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
<td>--------------------</td>
</tr>
<tr>
<td></td>
<td>Never</td>
</tr>
<tr>
<td>Conduct a pre-assessment to determine what students already know</td>
<td>17 (2.2)</td>
</tr>
<tr>
<td>Observe students and ask questions as they work individually</td>
<td>3 (1.1)</td>
</tr>
<tr>
<td>Observe students and ask questions as they work in small groups</td>
<td>3 (1.1)</td>
</tr>
<tr>
<td>Ask students questions during large group discussions</td>
<td>1 (0.5)</td>
</tr>
<tr>
<td>Use assessments embedded in class activities to see if students are “getting it”</td>
<td>5 (1.6)</td>
</tr>
<tr>
<td>Review student homework</td>
<td>25 (2.1)</td>
</tr>
<tr>
<td>Review student notebooks/journals</td>
<td>23 (2.3)</td>
</tr>
<tr>
<td>Review student portfolios</td>
<td>41 (2.6)</td>
</tr>
<tr>
<td>Have students do long-term science projects</td>
<td>36 (2.3)</td>
</tr>
<tr>
<td>Have students present their work to the class</td>
<td>16 (1.4)</td>
</tr>
<tr>
<td>Give predominantly short-answer tests</td>
<td>33 (2.3)</td>
</tr>
<tr>
<td>Give tests requiring open-ended responses</td>
<td>33 (2.3)</td>
</tr>
<tr>
<td>Grade student work on open-ended and/or laboratory tasks using defined criteria</td>
<td>39 (2.1)</td>
</tr>
<tr>
<td>Have students assess each other</td>
<td>55 (2.4)</td>
</tr>
</tbody>
</table>
### Table STQ 27.2

**Grade 5–8 Science Teachers Report**

**Assessing Student Progress Using Various Methods**

<table>
<thead>
<tr>
<th>Method</th>
<th>Percent of Classes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Never</td>
</tr>
<tr>
<td>Conduct a pre-assessment to determine what students already know</td>
<td>10 (1.8)</td>
</tr>
<tr>
<td>Observe students and ask questions as they work individually</td>
<td>1 (0.5)</td>
</tr>
<tr>
<td>Observe students and ask questions as they work in small groups</td>
<td>1 (0.5)</td>
</tr>
<tr>
<td>Ask students questions during large group discussions</td>
<td>1 (0.5)</td>
</tr>
<tr>
<td>Use assessments embedded in class activities to see if students are “getting it”</td>
<td>0 (0.2)</td>
</tr>
<tr>
<td>Review student homework</td>
<td>1 (0.6)</td>
</tr>
<tr>
<td>Review student notebooks/journals</td>
<td>13 (1.9)</td>
</tr>
<tr>
<td>Review student portfolios</td>
<td>37 (3.1)</td>
</tr>
<tr>
<td>Have students do long-term science projects</td>
<td>10 (1.8)</td>
</tr>
<tr>
<td>Have students present their work to the class</td>
<td>5 (1.3)</td>
</tr>
<tr>
<td>Give predominantly short-answer tests</td>
<td>5 (1.4)</td>
</tr>
<tr>
<td>Give tests requiring open-ended responses</td>
<td>2 (0.7)</td>
</tr>
<tr>
<td>Grade student work on open-ended and/or laboratory tasks using defined criteria</td>
<td>4 (1.0)</td>
</tr>
<tr>
<td>Have students assess each other</td>
<td>23 (2.0)</td>
</tr>
</tbody>
</table>
Table STQ 27.3
Grade 9–12 Science Teachers Report
Assessing Student Progress Using Various Methods

<table>
<thead>
<tr>
<th>Method</th>
<th>Percent of Classes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Never</td>
</tr>
<tr>
<td>Conduct a pre-assessment to determine what students already know</td>
<td>16 (1.6)</td>
</tr>
<tr>
<td>Observe students and ask questions as they work individually</td>
<td>1 (0.3)</td>
</tr>
<tr>
<td>Observe students and ask questions as they work in small groups</td>
<td>0 (0.2)</td>
</tr>
<tr>
<td>Ask students questions during large group discussions</td>
<td>0 (0.2)</td>
</tr>
<tr>
<td>Use assessments embedded in class activities to see if students are “getting it”</td>
<td>2 (0.5)</td>
</tr>
<tr>
<td>Review student homework</td>
<td>1 (0.4)</td>
</tr>
<tr>
<td>Review student notebooks/journals</td>
<td>26 (2.1)</td>
</tr>
<tr>
<td>Review student portfolios</td>
<td>58 (2.4)</td>
</tr>
<tr>
<td>Have students do long-term science projects</td>
<td>22 (1.7)</td>
</tr>
<tr>
<td>Have students present their work to the class</td>
<td>12 (1.2)</td>
</tr>
<tr>
<td>Give predominantly short-answer tests</td>
<td>7 (1.0)</td>
</tr>
<tr>
<td>Give tests requiring open-ended responses</td>
<td>4 (1.1)</td>
</tr>
<tr>
<td>Grade student work on open-ended and/or laboratory tasks using defined criteria</td>
<td>6 (1.1)</td>
</tr>
<tr>
<td>Have students assess each other</td>
<td>33 (1.9)</td>
</tr>
</tbody>
</table>
Table STQ 28a.1
Availability of Various Equipment in Grade K–4 Science Classrooms

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Percent of Classes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not at all Available</td>
</tr>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Overhead projector</td>
<td>3</td>
</tr>
<tr>
<td>Videotape player</td>
<td>4</td>
</tr>
<tr>
<td>Videodisc player</td>
<td>60</td>
</tr>
<tr>
<td>CD-ROM player</td>
<td>27</td>
</tr>
<tr>
<td>Four-function calculators</td>
<td>47</td>
</tr>
<tr>
<td>Fraction calculators</td>
<td>86</td>
</tr>
<tr>
<td>Graphing calculators</td>
<td>93</td>
</tr>
<tr>
<td>Scientific calculators</td>
<td>91</td>
</tr>
<tr>
<td>Computers</td>
<td>8</td>
</tr>
<tr>
<td>Computers with Internet connection</td>
<td>18</td>
</tr>
<tr>
<td>Calculator/computer lab interfacing devices</td>
<td>81</td>
</tr>
<tr>
<td>Running water in labs/classrooms</td>
<td>31</td>
</tr>
<tr>
<td>Electric outlets in labs/classrooms</td>
<td>7</td>
</tr>
<tr>
<td>Gas for burners in labs/classrooms</td>
<td>91</td>
</tr>
<tr>
<td>Hoods or air hoses in labs/classrooms</td>
<td>97</td>
</tr>
</tbody>
</table>

Table STQ 28a.2
Availability of Various Equipment in Grade 5–8 Science Classrooms

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Percent of Classes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not at all Available</td>
</tr>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Overhead projector</td>
<td>1</td>
</tr>
<tr>
<td>Videotape player</td>
<td>2</td>
</tr>
<tr>
<td>Videodisc player</td>
<td>45</td>
</tr>
<tr>
<td>CD-ROM player</td>
<td>21</td>
</tr>
<tr>
<td>Four-function calculators</td>
<td>26</td>
</tr>
<tr>
<td>Fraction calculators</td>
<td>62</td>
</tr>
<tr>
<td>Graphing calculators</td>
<td>73</td>
</tr>
<tr>
<td>Scientific calculators</td>
<td>62</td>
</tr>
<tr>
<td>Computers</td>
<td>5</td>
</tr>
<tr>
<td>Computers with Internet connection</td>
<td>15</td>
</tr>
<tr>
<td>Calculator/computer lab interfacing devices</td>
<td>73</td>
</tr>
<tr>
<td>Running water in labs/classrooms</td>
<td>24</td>
</tr>
<tr>
<td>Electric outlets in labs/classrooms</td>
<td>3</td>
</tr>
<tr>
<td>Gas for burners in labs/classrooms</td>
<td>70</td>
</tr>
<tr>
<td>Hoods or air hoses in labs/classrooms</td>
<td>83</td>
</tr>
</tbody>
</table>
### Table STQ 28a.3
#### Availability of Various Equipment in Grade 9–12 Science Classrooms

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Percent of Classes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not at all Available</td>
</tr>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Overhead projector</td>
<td>1 (0.4)</td>
</tr>
<tr>
<td>Videotape player</td>
<td>2 (0.6)</td>
</tr>
<tr>
<td>Videodisc player</td>
<td>27 (2.3)</td>
</tr>
<tr>
<td>CD-ROM player</td>
<td>21 (1.6)</td>
</tr>
<tr>
<td>Four-function calculators</td>
<td>29 (1.9)</td>
</tr>
<tr>
<td>Fraction calculators</td>
<td>49 (2.5)</td>
</tr>
<tr>
<td>Graphing calculators</td>
<td>42 (2.4)</td>
</tr>
<tr>
<td>Scientific calculators</td>
<td>33 (2.1)</td>
</tr>
<tr>
<td>Computers</td>
<td>11 (1.2)</td>
</tr>
<tr>
<td>Computers with Internet connection</td>
<td>15 (1.5)</td>
</tr>
<tr>
<td>Calculator/computer lab interfacing devices</td>
<td>51 (2.4)</td>
</tr>
<tr>
<td>Running water in labs/classrooms</td>
<td>8 (2.1)</td>
</tr>
<tr>
<td>Electric outlets in labs/classrooms</td>
<td>2 (0.7)</td>
</tr>
<tr>
<td>Gas for burners in labs/classrooms</td>
<td>20 (2.2)</td>
</tr>
<tr>
<td>Hoods or air hoses in labs/classrooms</td>
<td>40 (2.5)</td>
</tr>
</tbody>
</table>

### Table STQ 28b
#### Science Classes Where Teachers Indicate They Need Various Equipment

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Percent of Classes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Grades K–4</td>
</tr>
<tr>
<td>Overhead projector</td>
<td>77 (2.2)</td>
</tr>
<tr>
<td>Videotape player</td>
<td>82 (1.8)</td>
</tr>
<tr>
<td>Videodisc player</td>
<td>28 (2.7)</td>
</tr>
<tr>
<td>CD-ROM player</td>
<td>52 (3.3)</td>
</tr>
<tr>
<td>Four-function calculator</td>
<td>30 (2.8)</td>
</tr>
<tr>
<td>Fraction calculator</td>
<td>5 (1.1)</td>
</tr>
<tr>
<td>Graphing calculator</td>
<td>4 (1.0)</td>
</tr>
<tr>
<td>Scientific calculator</td>
<td>4 (1.0)</td>
</tr>
<tr>
<td>Computers</td>
<td>68 (2.9)</td>
</tr>
<tr>
<td>Computers with Internet connection</td>
<td>68 (3.1)</td>
</tr>
<tr>
<td>Calculator/computer lab interfacing devices</td>
<td>11 (1.5)</td>
</tr>
<tr>
<td>Running water in labs/classrooms</td>
<td>79 (2.4)</td>
</tr>
<tr>
<td>Electric outlets in labs/classrooms</td>
<td>80 (2.3)</td>
</tr>
<tr>
<td>Gas for burners in labs/classrooms</td>
<td>12 (1.9)</td>
</tr>
<tr>
<td>Hoods or air hoses in labs/classrooms</td>
<td>8 (1.5)</td>
</tr>
</tbody>
</table>
### Table STQ 28c.1
**Use of Various Equipment in Grade K–4 Science Classes**

<table>
<thead>
<tr>
<th>Percent of Classes</th>
<th>Never use in this course</th>
<th>Use in specific parts of this course</th>
<th>Fully integrated into this course</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overhead projector</td>
<td>17 (2.2)</td>
<td>60 (3.1)</td>
<td>22 (2.3)</td>
</tr>
<tr>
<td>Videotape player</td>
<td>14 (1.7)</td>
<td>66 (2.9)</td>
<td>20 (2.4)</td>
</tr>
<tr>
<td>Videodisc player</td>
<td>80 (2.4)</td>
<td>16 (2.0)</td>
<td>4 (1.2)</td>
</tr>
<tr>
<td>CD-ROM player</td>
<td>59 (2.8)</td>
<td>37 (2.5)</td>
<td>4 (1.0)</td>
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<tr>
<td>Four-function calculator</td>
<td>75 (2.5)</td>
<td>22 (2.1)</td>
<td>3 (1.1)</td>
</tr>
<tr>
<td>Fraction calculator</td>
<td>99 (0.6)</td>
<td>1 (0.4)</td>
<td>1 (0.4)</td>
</tr>
<tr>
<td>Graphing calculator</td>
<td>99 (0.3)</td>
<td>1 (0.3)</td>
<td>0 —*</td>
</tr>
<tr>
<td>Scientific calculator</td>
<td>99 (0.5)</td>
<td>1 (0.4)</td>
<td>0 (0.2)</td>
</tr>
<tr>
<td>Computers</td>
<td>42 (2.9)</td>
<td>48 (2.8)</td>
<td>10 (1.7)</td>
</tr>
<tr>
<td>Computers with Internet connection</td>
<td>46 (3.1)</td>
<td>47 (2.9)</td>
<td>7 (1.3)</td>
</tr>
<tr>
<td>Calculator/computer lab interfacing devices</td>
<td>94 (1.1)</td>
<td>5 (1.1)</td>
<td>1 (0.3)</td>
</tr>
<tr>
<td>Running water in labs/classrooms</td>
<td>25 (2.4)</td>
<td>51 (2.6)</td>
<td>24 (2.1)</td>
</tr>
<tr>
<td>Electric outlets in labs/classrooms</td>
<td>18 (2.3)</td>
<td>52 (2.6)</td>
<td>30 (2.3)</td>
</tr>
<tr>
<td>Gas for burners in labs/classrooms</td>
<td>95 (1.1)</td>
<td>4 (1.0)</td>
<td>1 (0.3)</td>
</tr>
<tr>
<td>Hoods or air hoses in labs/classrooms</td>
<td>98 (0.7)</td>
<td>2 (0.7)</td>
<td>0 (0.1)</td>
</tr>
</tbody>
</table>

* No teachers in the sample selected this response option. Thus, it is not possible to calculate the standard error of this estimate.

### Table STQ 28c.2
**Use of Various Equipment in Grade 5–8 Science Classes**

<table>
<thead>
<tr>
<th>Percent of Classes</th>
<th>Never use in this course</th>
<th>Use in specific parts of this course</th>
<th>Fully integrated into this course</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overhead projector</td>
<td>9 (2.0)</td>
<td>41 (3.0)</td>
<td>49 (2.9)</td>
</tr>
<tr>
<td>Videotape player</td>
<td>9 (2.2)</td>
<td>59 (3.1)</td>
<td>32 (2.8)</td>
</tr>
<tr>
<td>Videodisc player</td>
<td>60 (2.8)</td>
<td>27 (2.7)</td>
<td>13 (1.8)</td>
</tr>
<tr>
<td>CD-ROM player</td>
<td>48 (2.9)</td>
<td>42 (2.7)</td>
<td>10 (1.5)</td>
</tr>
<tr>
<td>Four-function calculator</td>
<td>42 (2.8)</td>
<td>46 (2.7)</td>
<td>12 (1.9)</td>
</tr>
<tr>
<td>Fraction calculator</td>
<td>86 (2.4)</td>
<td>12 (2.2)</td>
<td>2 (0.7)</td>
</tr>
<tr>
<td>Graphing calculator</td>
<td>91 (1.4)</td>
<td>8 (1.2)</td>
<td>2 (0.7)</td>
</tr>
<tr>
<td>Scientific calculator</td>
<td>76 (2.3)</td>
<td>20 (2.3)</td>
<td>3 (1.0)</td>
</tr>
<tr>
<td>Computers</td>
<td>18 (2.1)</td>
<td>65 (2.7)</td>
<td>17 (2.3)</td>
</tr>
<tr>
<td>Computers with Internet connection</td>
<td>27 (2.6)</td>
<td>59 (2.9)</td>
<td>15 (2.0)</td>
</tr>
<tr>
<td>Calculator/computer lab interfacing devices</td>
<td>77 (2.3)</td>
<td>20 (2.3)</td>
<td>3 (1.0)</td>
</tr>
<tr>
<td>Running water in labs/classrooms</td>
<td>13 (2.1)</td>
<td>47 (3.0)</td>
<td>40 (2.6)</td>
</tr>
<tr>
<td>Electric outlets in labs/classrooms</td>
<td>6 (1.2)</td>
<td>48 (3.0)</td>
<td>47 (3.2)</td>
</tr>
<tr>
<td>Gas for burners in labs/classrooms</td>
<td>70 (2.7)</td>
<td>22 (2.5)</td>
<td>8 (1.2)</td>
</tr>
<tr>
<td>Hoods or air hoses in labs/classrooms</td>
<td>82 (2.3)</td>
<td>14 (2.0)</td>
<td>4 (0.9)</td>
</tr>
</tbody>
</table>
Table STQ 28c.3
Use of Various Equipment in
Grade 9–12 Science Classes

<table>
<thead>
<tr>
<th></th>
<th>Never use in this course</th>
<th>Use in specific parts of this course</th>
<th>Fully integrated into this course</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overhead projector</td>
<td>13 (2.6)</td>
<td>35 (2.1)</td>
<td>52 (2.2)</td>
</tr>
<tr>
<td>Videotape player</td>
<td>7 (0.9)</td>
<td>59 (2.3)</td>
<td>35 (2.3)</td>
</tr>
<tr>
<td>Videodisc player</td>
<td>51 (2.3)</td>
<td>36 (2.0)</td>
<td>13 (1.4)</td>
</tr>
<tr>
<td>CD-ROM player</td>
<td>50 (2.3)</td>
<td>38 (2.5)</td>
<td>12 (2.0)</td>
</tr>
<tr>
<td>Four-function calculator</td>
<td>46 (2.3)</td>
<td>30 (2.1)</td>
<td>25 (2.0)</td>
</tr>
<tr>
<td>Fraction calculator</td>
<td>77 (2.4)</td>
<td>15 (2.3)</td>
<td>9 (1.2)</td>
</tr>
<tr>
<td>Graphing calculator</td>
<td>68 (2.4)</td>
<td>22 (1.6)</td>
<td>10 (2.0)</td>
</tr>
<tr>
<td>Scientific calculator</td>
<td>47 (2.6)</td>
<td>24 (1.8)</td>
<td>28 (2.6)</td>
</tr>
<tr>
<td>Computers</td>
<td>21 (1.8)</td>
<td>60 (2.4)</td>
<td>19 (2.2)</td>
</tr>
<tr>
<td>Computers with Internet connection</td>
<td>29 (2.1)</td>
<td>56 (2.4)</td>
<td>15 (1.7)</td>
</tr>
<tr>
<td>Calculator/computer lab interfacing devices</td>
<td>63 (2.3)</td>
<td>31 (2.3)</td>
<td>6 (0.9)</td>
</tr>
<tr>
<td>Running water in labs/classrooms</td>
<td>6 (1.0)</td>
<td>37 (2.3)</td>
<td>58 (2.2)</td>
</tr>
<tr>
<td>Electric outlets in labs/classrooms</td>
<td>4 (1.0)</td>
<td>36 (2.3)</td>
<td>59 (2.4)</td>
</tr>
<tr>
<td>Gas for burners in labs/classrooms</td>
<td>31 (2.1)</td>
<td>34 (2.3)</td>
<td>35 (2.3)</td>
</tr>
<tr>
<td>Hoods or air hoses in labs/classrooms</td>
<td>48 (2.3)</td>
<td>30 (2.2)</td>
<td>22 (2.1)</td>
</tr>
</tbody>
</table>

Table STQ 29
Estimated Amount of Own Money
Science Teachers Spend on Supplies per Class

<table>
<thead>
<tr>
<th>Grade</th>
<th>Median Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grades K–4</td>
<td>$ 50</td>
</tr>
<tr>
<td>Grades 5–8</td>
<td>$ 75</td>
</tr>
<tr>
<td>Grades 9–12</td>
<td>$ 75</td>
</tr>
</tbody>
</table>

Table STQ 30
Estimated Amount of Own Money Science Teachers Spend on Professional Development

<table>
<thead>
<tr>
<th>Grade</th>
<th>Median Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grades K–4</td>
<td>$ 0</td>
</tr>
<tr>
<td>Grades 5–8</td>
<td>$ 50</td>
</tr>
<tr>
<td>Grades 9–12</td>
<td>$ 100</td>
</tr>
</tbody>
</table>
**Table STQ 31.1**  
Grade K–4 Science Classes Where Teachers Report Having Control Over Various Curriculum and Instruction Decisions

<table>
<thead>
<tr>
<th>Percent of Classes</th>
<th>No Control</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>Strong Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Determining course goals and objectives</td>
<td>31 (2.7)</td>
<td>13 (1.7)</td>
<td>31 (2.7)</td>
<td>12 (1.6)</td>
<td>14 (2.0)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Selecting textbooks/instructional programs</td>
<td>37 (2.5)</td>
<td>18 (1.8)</td>
<td>24 (2.6)</td>
<td>13 (1.8)</td>
<td>8 (1.6)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Selecting other instructional materials</td>
<td>10 (1.2)</td>
<td>10 (1.8)</td>
<td>29 (2.5)</td>
<td>23 (2.0)</td>
<td>28 (2.1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Selecting content, topics, and skills to be taught</td>
<td>27 (2.5)</td>
<td>15 (1.7)</td>
<td>25 (2.3)</td>
<td>19 (2.2)</td>
<td>14 (2.0)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Selecting the sequence in which topics are covered</td>
<td>8 (1.6)</td>
<td>6 (1.4)</td>
<td>18 (2.1)</td>
<td>24 (2.2)</td>
<td>44 (3.0)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Setting the pace for covering topics</td>
<td>5 (1.2)</td>
<td>7 (1.0)</td>
<td>20 (2.1)</td>
<td>23 (2.0)</td>
<td>45 (3.1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Selecting teaching techniques</td>
<td>2 (0.7)</td>
<td>1 (0.5)</td>
<td>13 (1.8)</td>
<td>28 (2.4)</td>
<td>56 (3.3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Determining the amount of homework to be assigned</td>
<td>2 (0.7)</td>
<td>1 (0.6)</td>
<td>8 (1.1)</td>
<td>22 (2.1)</td>
<td>67 (2.5)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Choosing criteria for grading students</td>
<td>3 (1.0)</td>
<td>4 (1.1)</td>
<td>15 (1.9)</td>
<td>28 (2.3)</td>
<td>50 (2.6)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Choosing tests for classroom assessment</td>
<td>5 (1.4)</td>
<td>4 (1.0)</td>
<td>11 (1.3)</td>
<td>27 (2.5)</td>
<td>53 (2.9)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Table STQ 31.2**  
Grade 5–8 Science Classes Where Teachers Report Having Control Over Various Curriculum and Instruction Decisions

<table>
<thead>
<tr>
<th>Percent of Classes</th>
<th>No Control</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>Strong Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Determining course goals and objectives</td>
<td>21 (2.5)</td>
<td>8 (1.5)</td>
<td>27 (2.4)</td>
<td>20 (2.4)</td>
<td>24 (2.6)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Selecting textbooks/instructional programs</td>
<td>22 (2.1)</td>
<td>14 (1.8)</td>
<td>27 (2.6)</td>
<td>15 (2.0)</td>
<td>22 (2.4)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Selecting other instructional materials</td>
<td>4 (1.0)</td>
<td>5 (1.3)</td>
<td>21 (2.1)</td>
<td>30 (2.3)</td>
<td>40 (2.8)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Selecting content, topics, and skills to be taught</td>
<td>15 (2.1)</td>
<td>16 (2.1)</td>
<td>22 (2.5)</td>
<td>24 (2.5)</td>
<td>22 (2.4)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Selecting the sequence in which topics are covered</td>
<td>6 (1.3)</td>
<td>4 (1.4)</td>
<td>11 (1.6)</td>
<td>20 (2.6)</td>
<td>59 (2.9)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Setting the pace for covering topics</td>
<td>2 (0.7)</td>
<td>5 (1.1)</td>
<td>12 (1.8)</td>
<td>25 (2.4)</td>
<td>56 (2.6)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Selecting teaching techniques</td>
<td>1 (0.3)</td>
<td>1 (0.6)</td>
<td>4 (1.0)</td>
<td>26 (2.7)</td>
<td>68 (2.6)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Determining the amount of homework to be assigned</td>
<td>0 (0.3)</td>
<td>1 (0.5)</td>
<td>4 (0.9)</td>
<td>19 (2.1)</td>
<td>75 (2.4)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Choosing criteria for grading students</td>
<td>1 (0.5)</td>
<td>2 (0.9)</td>
<td>11 (2.1)</td>
<td>23 (2.4)</td>
<td>63 (3.0)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Choosing tests for classroom assessment</td>
<td>1 (0.5)</td>
<td>1 (0.5)</td>
<td>7 (1.4)</td>
<td>21 (2.1)</td>
<td>70 (2.6)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table STQ 31.3
Grade 9–12 Science Classes Where Teachers Report
Having Control Over Various Curriculum and Instruction Decisions

<table>
<thead>
<tr>
<th>Determining course goals and objectives</th>
<th>No Control</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>Strong Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 (1.5)</td>
<td>8 (1.2)</td>
<td>15 (1.4)</td>
<td>22 (2.1)</td>
<td>39 (2.5)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Selecting textbooks/instructional programs</td>
<td>12 (1.2)</td>
<td>10 (1.2)</td>
<td>22 (2.3)</td>
<td>20 (1.7)</td>
<td>36 (2.4)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Selecting other instructional materials</td>
<td>2 (0.3)</td>
<td>4 (0.7)</td>
<td>15 (1.3)</td>
<td>27 (1.9)</td>
<td>52 (2.5)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Selecting content, topics, and skills to be taught</td>
<td>10 (1.0)</td>
<td>8 (1.1)</td>
<td>15 (1.6)</td>
<td>25 (1.9)</td>
<td>42 (2.6)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Selecting the sequence in which topics are covered</td>
<td>2 (0.5)</td>
<td>4 (0.6)</td>
<td>9 (1.3)</td>
<td>21 (1.5)</td>
<td>64 (2.1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Setting the pace for covering topics</td>
<td>2 (0.4)</td>
<td>3 (0.6)</td>
<td>10 (1.1)</td>
<td>22 (1.6)</td>
<td>63 (2.2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Selecting teaching techniques</td>
<td>0 (0.2)</td>
<td>1 (0.2)</td>
<td>3 (0.6)</td>
<td>16 (1.6)</td>
<td>80 (1.6)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Determining the amount of homework to be assigned</td>
<td>0 (0.1)</td>
<td>0 (0.1)</td>
<td>3 (0.7)</td>
<td>14 (1.5)</td>
<td>83 (1.5)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Choosing criteria for grading students</td>
<td>1 (0.3)</td>
<td>2 (0.4)</td>
<td>6 (0.6)</td>
<td>20 (1.7)</td>
<td>71 (1.7)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Choosing tests for classroom assessment</td>
<td>1 (0.2)</td>
<td>1 (0.3)</td>
<td>3 (0.6)</td>
<td>16 (1.4)</td>
<td>80 (1.6)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table STQ 32
Amount of Homework Assigned
in Science Classes per Week

<table>
<thead>
<tr>
<th>Percent of Classes</th>
<th>Grades K–4</th>
<th>Grades 5–8</th>
<th>Grades 9–12</th>
</tr>
</thead>
<tbody>
<tr>
<td>0–30 minutes</td>
<td>89 (1.5)</td>
<td>37 (2.8)</td>
<td>11 (1.2)</td>
</tr>
<tr>
<td>31–60 minutes</td>
<td>8 (1.1)</td>
<td>35 (2.3)</td>
<td>27 (1.7)</td>
</tr>
<tr>
<td>61–90 minutes</td>
<td>2 (0.8)</td>
<td>19 (2.2)</td>
<td>25 (1.7)</td>
</tr>
<tr>
<td>91–120 minutes</td>
<td>1 (0.4)</td>
<td>6 (1.5)</td>
<td>16 (1.4)</td>
</tr>
<tr>
<td>2–3 hours</td>
<td>0 —*</td>
<td>3 (0.7)</td>
<td>14 (1.8)</td>
</tr>
<tr>
<td>More than 3 hours</td>
<td>0 (0.2)</td>
<td>0 (0.2)</td>
<td>7 (1.6)</td>
</tr>
</tbody>
</table>

* No teachers in the sample selected this response option. Thus, it is not possible to calculate the standard error of this estimate.

Table STQ 33a
Science Classes Using
Commercially-Published Textbooks or Programs

<table>
<thead>
<tr>
<th>Percent of Classes</th>
<th>Grades K–4</th>
<th>Grades 5–8</th>
<th>Grades 9–12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grades K–4</td>
<td>64 (2.3)</td>
<td>85 (2.5)</td>
<td>96 (0.5)</td>
</tr>
</tbody>
</table>
### Table STQ 33b

**Use of Commercially-Published Textbooks or Programs in Science Classes**

<table>
<thead>
<tr>
<th>Percent of Classes</th>
<th>Grades K–4</th>
<th>Grades 5–8</th>
<th>Grades 9–12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use one textbook or program all or most of the time</td>
<td>37 (2.6)</td>
<td>48 (3.0)</td>
<td>63 (2.7)</td>
</tr>
<tr>
<td>Use multiple textbooks/programs</td>
<td>24 (2.5)</td>
<td>36 (2.5)</td>
<td>32 (2.6)</td>
</tr>
</tbody>
</table>

### Table STQ 34

**Publishers of Textbooks/Programs Used in Science Classes**

<table>
<thead>
<tr>
<th>Publishers of Textbooks/Programs</th>
<th>Percent of Classes</th>
<th>Grades K–4</th>
<th>Grades 5–8</th>
<th>Grades 9–12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Addison-Wesley Longman, Inc/ Scott Foresman</td>
<td>30 (3.3)</td>
<td>17 (3.1)</td>
<td>13 (1.1)</td>
<td></td>
</tr>
<tr>
<td>Benjamin/Cummings Publishing Company, Inc.</td>
<td>0 —*</td>
<td>0 —*</td>
<td>0 —*</td>
<td></td>
</tr>
<tr>
<td>Brooks/Cole Publishing Co</td>
<td>0 —*</td>
<td>0 —*</td>
<td>0 (0.2)</td>
<td></td>
</tr>
<tr>
<td>Carolina Biological Supply Co</td>
<td>2 (0.8)</td>
<td>1 (0.6)</td>
<td>0 (0.3)</td>
<td></td>
</tr>
<tr>
<td>Delta Education</td>
<td>1 (0.5)</td>
<td>0 —*</td>
<td>0 —*</td>
<td></td>
</tr>
<tr>
<td>Encyclopaedia Britannica</td>
<td>0 (0.4)</td>
<td>0 (0.1)</td>
<td>0 —*</td>
<td></td>
</tr>
<tr>
<td>Globe Fearon, Inc/Cambridge</td>
<td>0 —*</td>
<td>2 (0.6)</td>
<td>0 (0.2)</td>
<td></td>
</tr>
<tr>
<td>Harcourt Brace/Harcourt, Brace &amp; Jovanovich</td>
<td>5 (1.6)</td>
<td>4 (1.2)</td>
<td>3 (0.5)</td>
<td></td>
</tr>
<tr>
<td>Holt, Rinehart, and Winston, Inc</td>
<td>2 (1.1)</td>
<td>6 (1.2)</td>
<td>21 (1.8)</td>
<td></td>
</tr>
<tr>
<td>Houghton Mifflin Company/McDougal Littell/D.C. Heath</td>
<td>2 (0.9)</td>
<td>3 (1.1)</td>
<td>5 (0.9)</td>
<td></td>
</tr>
<tr>
<td>It’s About Time</td>
<td>0 —*</td>
<td>0 —*</td>
<td>0 (0.2)</td>
<td></td>
</tr>
<tr>
<td>J.M. LeBel Enterprises</td>
<td>0 —*</td>
<td>0 —*</td>
<td>0 (0.1)</td>
<td></td>
</tr>
<tr>
<td>Kendall Hunt Publishing</td>
<td>0 (0.3)</td>
<td>1 (0.4)</td>
<td>2 (0.7)</td>
<td></td>
</tr>
<tr>
<td>Lawrence Hall of Science</td>
<td>1 (0.6)</td>
<td>1 (0.6)</td>
<td>0 —*</td>
<td></td>
</tr>
<tr>
<td>McGraw-Hill/Merrill Co</td>
<td>13 (2.3)</td>
<td>23 (2.5)</td>
<td>30 (2.2)</td>
<td></td>
</tr>
<tr>
<td>Modern Curriculum Press</td>
<td>0 —*</td>
<td>0 —*</td>
<td>0 (0.1)</td>
<td></td>
</tr>
<tr>
<td>Mosby/The C.V. Mosby Company</td>
<td>0 —*</td>
<td>0 —*</td>
<td>0 —*</td>
<td></td>
</tr>
<tr>
<td>Nystrom</td>
<td>0 (0.5)</td>
<td>0 —*</td>
<td>0 —*</td>
<td></td>
</tr>
<tr>
<td>Optical Data Corporation</td>
<td>0 (0.5)</td>
<td>0 (0.0)</td>
<td>0 —*</td>
<td></td>
</tr>
<tr>
<td>Prentice Hall, Inc.</td>
<td>0 —*</td>
<td>24 (2.4)</td>
<td>18 (1.5)</td>
<td></td>
</tr>
<tr>
<td>Saxon Publishers</td>
<td>0 —*</td>
<td>0 —*</td>
<td>0 —*</td>
<td></td>
</tr>
<tr>
<td>Scholastic, Inc.</td>
<td>6 (1.6)</td>
<td>2 (1.4)</td>
<td>0 —*</td>
<td></td>
</tr>
<tr>
<td>Silver Burdett Ginn</td>
<td>26 (3.8)</td>
<td>14 (2.4)</td>
<td>0 —*</td>
<td></td>
</tr>
<tr>
<td>South-Western Educational Publishing</td>
<td>0 —*</td>
<td>0 —*</td>
<td>0 (0.2)</td>
<td></td>
</tr>
<tr>
<td>Steck-Vaughn Company</td>
<td>0 (0.3)</td>
<td>0 (0.3)</td>
<td>0 —*</td>
<td></td>
</tr>
<tr>
<td>Videodiscovery, Inc</td>
<td>0 —*</td>
<td>0 —*</td>
<td>0 —*</td>
<td></td>
</tr>
<tr>
<td>W.H. Freeman</td>
<td>0 —*</td>
<td>0 —*</td>
<td>0 (0.0)</td>
<td></td>
</tr>
<tr>
<td>Wadsworth Publishing</td>
<td>0 —*</td>
<td>0 —*</td>
<td>1 (0.3)</td>
<td></td>
</tr>
</tbody>
</table>

* Other specified: A-Beka, CORD Communications, FOSS, National Science Resource Center

* No teachers in the sample selected this response option. Thus, it is not possible to calculate the standard error of this estimate.
There is no table for STQ 35a.

### Table STQ 35b
**Percentage of Science Textbooks/Programs Covered During the Course**

<table>
<thead>
<tr>
<th>Percent of Classes</th>
<th>Grades K–4</th>
<th>Grades 5–8</th>
<th>Grades 9–12</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;25%</td>
<td>5 (1.2)</td>
<td>8 (1.5)</td>
<td>3 (0.6)</td>
</tr>
<tr>
<td>25–49%</td>
<td>16 (2.2)</td>
<td>19 (2.2)</td>
<td>13 (1.4)</td>
</tr>
<tr>
<td>50–74%</td>
<td>30 (3.1)</td>
<td>33 (2.7)</td>
<td>38 (2.3)</td>
</tr>
<tr>
<td>75–90%</td>
<td>24 (2.4)</td>
<td>28 (2.5)</td>
<td>37 (2.2)</td>
</tr>
<tr>
<td>&gt;90%</td>
<td>26 (2.9)</td>
<td>11 (1.7)</td>
<td>9 (1.1)</td>
</tr>
</tbody>
</table>

*Only classes using published textbooks/programs were included in these analyses.*

### Table STQ 35c
**Teachers’ Perceptions of Quality of Textbooks/Programs Used in Science Classes**

<table>
<thead>
<tr>
<th>Percent of Classes</th>
<th>Grades K–4</th>
<th>Grades 5–8</th>
<th>Grades 9–12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Poor</td>
<td>4 (1.2)</td>
<td>3 (0.9)</td>
<td>1 (0.3)</td>
</tr>
<tr>
<td>Poor</td>
<td>7 (1.6)</td>
<td>8 (2.6)</td>
<td>4 (0.8)</td>
</tr>
<tr>
<td>Fair</td>
<td>33 (3.1)</td>
<td>28 (2.6)</td>
<td>18 (1.8)</td>
</tr>
<tr>
<td>Good</td>
<td>33 (3.3)</td>
<td>32 (2.7)</td>
<td>39 (2.2)</td>
</tr>
<tr>
<td>Very Good</td>
<td>19 (2.6)</td>
<td>22 (2.6)</td>
<td>31 (2.1)</td>
</tr>
<tr>
<td>Excellent</td>
<td>4 (1.2)</td>
<td>6 (1.5)</td>
<td>8 (1.1)</td>
</tr>
</tbody>
</table>

### Table STQ 36a
**Average Length of Most Recent Science Lesson**

<table>
<thead>
<tr>
<th>Number of Minutes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grades K–4</td>
</tr>
<tr>
<td>Grades 5–8</td>
</tr>
<tr>
<td>Grades 9–12</td>
</tr>
</tbody>
</table>
### Table STQ 36b
**Time Spent on Various Types of Activities in Most Recent Science Lesson**

<table>
<thead>
<tr>
<th>Activity</th>
<th>Grades K–4</th>
<th>Grades 5–8</th>
<th>Grades 9–12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily routines, interruptions, and other non-instructional activities</td>
<td>9 (0.5)</td>
<td>11 (0.5)</td>
<td>11 (0.3)</td>
</tr>
<tr>
<td>Whole class lecture/discussion</td>
<td>33 (1.0)</td>
<td>30 (1.2)</td>
<td>37 (1.1)</td>
</tr>
<tr>
<td>Individual students reading textbooks, completing worksheets, etc.</td>
<td>16 (1.0)</td>
<td>18 (1.0)</td>
<td>14 (0.9)</td>
</tr>
<tr>
<td>Working with hands-on, manipulative, or laboratory materials</td>
<td>30 (1.6)</td>
<td>24 (1.6)</td>
<td>22 (1.2)</td>
</tr>
<tr>
<td>Non-laboratory small group work</td>
<td>8 (0.8)</td>
<td>11 (1.1)</td>
<td>10 (0.8)</td>
</tr>
<tr>
<td>Other activities</td>
<td>4 (0.8)</td>
<td>5 (1.1)</td>
<td>7 (0.6)</td>
</tr>
</tbody>
</table>

### Table STQ 37
**Science Classes Participating in Various Activities in Most Recent Lesson**

<table>
<thead>
<tr>
<th>Activity</th>
<th>Grades K–4</th>
<th>Grades 5–8</th>
<th>Grades 9–12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecture</td>
<td>59 (2.7)</td>
<td>62 (3.1)</td>
<td>71 (2.1)</td>
</tr>
<tr>
<td>Discussion</td>
<td>90 (2.0)</td>
<td>83 (2.6)</td>
<td>81 (1.4)</td>
</tr>
<tr>
<td>Students completing textbook/workbook problems</td>
<td>43 (2.5)</td>
<td>50 (3.0)</td>
<td>52 (2.3)</td>
</tr>
<tr>
<td>Students doing hands-on/laboratory activities</td>
<td>62 (2.6)</td>
<td>50 (3.2)</td>
<td>42 (2.2)</td>
</tr>
<tr>
<td>Students reading about science</td>
<td>41 (2.6)</td>
<td>41 (2.6)</td>
<td>26 (2.2)</td>
</tr>
<tr>
<td>Students working in small groups</td>
<td>55 (2.9)</td>
<td>56 (2.9)</td>
<td>52 (1.9)</td>
</tr>
<tr>
<td>Students using calculators</td>
<td>1 (0.5)</td>
<td>8 (1.4)</td>
<td>27 (1.9)</td>
</tr>
<tr>
<td>Students using computers</td>
<td>4 (0.8)</td>
<td>10 (1.6)</td>
<td>7 (1.0)</td>
</tr>
<tr>
<td>Students using other technologies</td>
<td>4 (0.9)</td>
<td>9 (1.4)</td>
<td>9 (1.2)</td>
</tr>
<tr>
<td>Test or quiz</td>
<td>7 (1.4)</td>
<td>11 (1.6)</td>
<td>12 (1.2)</td>
</tr>
<tr>
<td>None of the above</td>
<td>2 (0.7)</td>
<td>3 (1.1)</td>
<td>2 (0.5)</td>
</tr>
</tbody>
</table>

### Table STQ 38
**Science Taught on Most Recent Day of School**

<table>
<thead>
<tr>
<th>Percent of Classes</th>
<th>Grades K–4</th>
<th>Grades 5–8</th>
<th>Grades 9–12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grades K–4</td>
<td>69 (2.2)</td>
<td>90 (1.9)</td>
<td>93 (1.1)</td>
</tr>
</tbody>
</table>

### Table STQ 39
**Gender of Science Teachers**

<table>
<thead>
<tr>
<th>Percent of Teachers</th>
<th>Grades K–4</th>
<th>Grades 5–8</th>
<th>Grades 9–12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>8 (1.2)</td>
<td>23 (3.1)</td>
<td>50 (2.1)</td>
</tr>
<tr>
<td>Female</td>
<td>92 (1.2)</td>
<td>77 (3.1)</td>
<td>50 (2.1)</td>
</tr>
</tbody>
</table>
### Table STQ 40

#### Race/Ethnicity of Science Teachers

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>Grades K–4</th>
<th>Grades 5–8</th>
<th>Grades 9–12</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Indian or Alaskan Native</td>
<td>1 (0.3)</td>
<td>1 (0.5)</td>
<td>2 (0.5)</td>
</tr>
<tr>
<td>Asian</td>
<td>1 (1.0)</td>
<td>1 (0.6)</td>
<td>2 (0.6)</td>
</tr>
<tr>
<td>Black or African American</td>
<td>5 (0.9)</td>
<td>5 (1.1)</td>
<td>4 (0.8)</td>
</tr>
<tr>
<td>Hispanic or Latino</td>
<td>4 (1.1)</td>
<td>3 (1.0)</td>
<td>3 (0.5)</td>
</tr>
<tr>
<td>Native Hawaiian or Other Pacific Islander</td>
<td>0 (0.1)</td>
<td>0 (0.1)</td>
<td>0 (0.1)</td>
</tr>
<tr>
<td>White</td>
<td>88 (1.9)</td>
<td>87 (1.8)</td>
<td>90 (1.2)</td>
</tr>
</tbody>
</table>

*Percents may not add to 100 because respondents were given the option of selecting more than one category. Of the science teachers responding to the survey, 96 percent selected only one category, 2 percent selected more than one category, and 2 percent selected no category.*

### Table STQ 41

#### Age of Science Teachers

<table>
<thead>
<tr>
<th>Age</th>
<th>Grades K–4</th>
<th>Grades 5–8</th>
<th>Grades 9–12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 31 years old</td>
<td>20 (2.0)</td>
<td>19 (2.8)</td>
<td>20 (2.5)</td>
</tr>
<tr>
<td>31–40 years old</td>
<td>19 (1.8)</td>
<td>22 (3.1)</td>
<td>23 (1.7)</td>
</tr>
<tr>
<td>41–50 years old</td>
<td>34 (2.1)</td>
<td>30 (3.1)</td>
<td>29 (1.9)</td>
</tr>
<tr>
<td>51 years old or over</td>
<td>27 (1.9)</td>
<td>29 (3.7)</td>
<td>28 (1.7)</td>
</tr>
</tbody>
</table>

### Table STQ 42

#### Number of Years Teaching

#### Experience of Science Teachers

<table>
<thead>
<tr>
<th>Experience</th>
<th>Grades K–4</th>
<th>Grades 5–8</th>
<th>Grades 9–12</th>
</tr>
</thead>
<tbody>
<tr>
<td>0–2 years</td>
<td>14 (1.6)</td>
<td>16 (2.7)</td>
<td>16 (2.2)</td>
</tr>
<tr>
<td>3–5 years</td>
<td>17 (1.6)</td>
<td>9 (1.5)</td>
<td>16 (1.7)</td>
</tr>
<tr>
<td>6–10 years</td>
<td>16 (1.8)</td>
<td>19 (2.6)</td>
<td>18 (1.4)</td>
</tr>
<tr>
<td>11–20 years</td>
<td>27 (1.9)</td>
<td>24 (3.3)</td>
<td>21 (1.6)</td>
</tr>
<tr>
<td>More than 20 years</td>
<td>26 (2.4)</td>
<td>32 (3.1)</td>
<td>29 (1.7)</td>
</tr>
</tbody>
</table>