

2000 National Survey of Science and Mathematics Education Science Questionnaire

A. Teacher Opinions

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

	Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree
a. Students learn science best in classes with students of similar abilities.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
b. The testing program in my state/district dictates what science content I teach.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
c. I enjoy teaching science.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
d. I consider myself a "master" science teacher.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
e. I have time during the regular school week to work with my colleagues on science curriculum and teaching.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
f. Science teachers in this school regularly observe each other teaching classes as part of sharing and improving instructional strategies.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
g. Most science teachers in this school contribute actively to making decisions about the science curriculum.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>

2. How familiar are you with the *National Science Education Standards*, published by the National Research Council? (Darken one oval.)

- Not at all familiar
- Somewhat familiar
- Fairly familiar
- Very familiar

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.)

	Not Adequately Prepared	Somewhat Prepared	Fairly Well Prepared	Very Well Prepared
a. Take students' prior understanding into account when planning curriculum and instruction	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
b. Have students work in cooperative learning groups	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
c. Use the textbook as a resource rather than the primary instructional tool	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
d. Teach groups that are heterogeneous in ability	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
e. Teach students who have limited English proficiency	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
f. Encourage participation of females in science	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
g. Encourage participation of minorities in science	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>

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

Bachelors	<input checked="" type="radio"/> Yes	<input type="radio"/> No
Masters	<input checked="" type="radio"/> Yes	<input type="radio"/> No
Doctorate	<input checked="" type="radio"/> Yes	<input type="radio"/> No

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

	Bachelors	Masters	Doctorate
Biology/Life Science	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Chemistry	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Earth/Space Science	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Physics	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other science, please specify: _____	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Science Education (any science discipline)	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mathematics/Mathematics Education	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Elementary Education	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other Education (e.g., History Education, Special Education)	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other, please specify: _____	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

9. 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

10a. 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 10b and 10c No, SKIP TO QUESTION 11

10b. **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.)

	Not Well Qualified	Adequately Qualified	Very Well Qualified
a. Life science	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
b. Earth science	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
c. Physical science	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
d. Mathematics	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
e. Reading/Language Arts	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
f. Social Studies	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>

10c. **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.)

	Days Per Week	Approximate Minutes Per Day		Days Per Week	Approximate Minutes Per Day
Mathematics	_____	_____	Social Studies	_____	_____
Science	_____	_____	Reading/Language Arts	_____	_____

NOW GO TO SECTION C, ON THE NEXT PAGE .

11. **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. (If you teach more than one section of a course, record each section separately below. If you teach more than 6 classes per day, please provide the requested information for the additional classes on a separate sheet of paper.)

<i>Course Title</i>	<i>Course Code</i>	<i>Number of Students</i>
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

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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 cover letter to determine which science class to use to answer these questions.**

12. Using the blue "List of Course Titles," indicate the code number that best describes this course. _____
 (If "other" [Code 199], briefly describe content of course: _____)

13. Please indicate the grades of the students in this class. (Darken all that apply.)

K 1 2 3 4 5 6 7 8 9 10 11 12

14a. What is the total number of students in this class? _____

14b. Please indicate the number of students in this class 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.

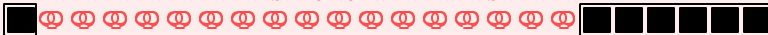
	Male	Female
American Indian or American Native	_____	_____
Asian	_____	_____
Black or African-American	_____	_____
Hispanic or Latino (any race)	_____	_____
Native Hawaiian or Other Pacific Islander	_____	_____
White	_____	_____

15. **This question applies only to teachers of non-self-contained classes. If you teach a self-contained class, please darken this oval and skip to question 16.** 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.

	Week 1	Week 2
Monday	_____	_____
Tuesday	_____	_____
Wednesday	_____	_____
Thursday	_____	_____
Friday	_____	_____

Examples			
Example 1		Example 2	
Week 1	Week 2	Week 1	Week 2
45	_____	90	_____
45	_____	_____	90
45	_____	90	_____
45	_____	_____	90
45	_____	90	_____

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16. Are students assigned to this class by level of ability? (Darken one oval.) Yes No

17. 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

18. 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): _____

19. 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.)

	None	Minimal Emphasis	Moderate Emphasis	Heavy Emphasis
a. Increase students' interest in science	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
b. Learn basic science concepts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. Learn important terms and facts of science	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. Learn science process/inquiry skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. Prepare for further study in science	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f. Learn to evaluate arguments based on scientific evidence	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g. Learn how to communicate ideas in science effectively	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
h. Learn about the applications of science in business and industry	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
i. Learn about the relationship between science, technology, and society	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
j. Learn about the history and nature of science	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
k. Prepare for standardized tests	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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

	Never	Rarely (e.g., a few times a year)	Sometimes (e.g., once or twice a month)	Often (e.g., once or twice a week)	All or almost all science lessons
a. Introduce content through formal presentations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
b. Pose open-ended questions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. Engage the whole class in discussions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. Require students to supply evidence to support their claims	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. Ask students to explain concepts to one another	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f. Ask students to consider alternative explanations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g. Allow students to work at their own pace	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
h. Help students see connections between science and other disciplines	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
i. Assign science homework	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
j. Read and comment on the reflections students have written, e.g., in their journals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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21. About how often do students in this science class take part in the following types of activities? (Darken one oval on each line.)

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

22. About how often do students in this science class use **computers** to: (Darken one oval on each line.)

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

23. 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)? _____ If none, darken this oval:

24. How much of your own money do you estimate you will spend for your own professional development activities during the period Sept. 1, 2000 - Aug. 31, 2001? _____ If none, darken this oval:

25. How much science homework do you assign to this science class in a typical **week**? (Darken one oval.)
 0-30 min 31-60 min 61-90 min 91-120 min 2-3 hours More than 3 hours

26a. 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, ON THE NEXT PAGE
 Yes, CONTINUE WITH 26b

26b. 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

27a. Please indicate the title, author, publisher, and publication year of the **one** textbook/program used **most often** by students in this class.

Title: _____

First Author: _____

Publisher: _____

Publication Year: _____ Edition: _____

27b. Approximately what percentage of this textbook/program will you "cover" in this course? (Darken one oval.)

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

27c. 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 28-30 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.

28a. 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.

28b. Of these, how many minutes were spent on the following: (The sum of the numbers in 1.-6. below should equal your response in 28a.)

- _____ 1. Daily routines, interruptions, and other non-instructional activities
- _____ 2. Whole class lecture/discussions
- _____ 3. Individual students reading textbooks, completing worksheets, etc.
- _____ 4. Working with hands-on or manipulative materials
- _____ 5. Non-manipulative small group work
- _____ 6. Other

29. 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/laboratory 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 these activities took place

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