

**2012 NATIONAL SURVEY OF SCIENCE AND MATHEMATICS EDUCATION
SCIENCE PROGRAM QUESTIONNAIRE**

Preview Version

This preview version is meant to assist you in gather the information needed to complete the web version of this questionnaire. Responses cannot be submitted on this preview version. *Red italicized text indicates who should answer or skip a particular item on the questionnaire.*

Some items ask about your school district. On the web questionnaire, Catholic schools associated with a diocese will be asked about their diocese instead. Other private schools will not be asked about a district or diocese.

This questionnaire asks a number of questions about “science teachers.” In responding, unless otherwise specified, consider ALL teachers of science in your school, including self-contained teachers who teach science and other subjects to the same group of students.

1. Which of the following describes your position? Mark all that apply.

- Science department chair
- Science lead teacher or coach
- Regular classroom teacher
- Principal
- Assistant principal
- Other, please specify: _____

School Programs and Practices

2. **For schools that include self-contained teachers:** Indicate whether each of the following programs and/or practices is currently being implemented in your school. Mark one circle on each line.

	Yes	No
a. Students in self-contained classes receive science instruction from a science specialist <i>instead of</i> their regular teacher	<input type="radio"/>	<input type="radio"/>
b. Students in self-contained classes receive science instruction from a science specialist <i>in addition</i> to their regular teacher	<input type="radio"/>	<input type="radio"/>
c. Students in self-contained classes are pulled out for remedial instruction in science	<input type="radio"/>	<input type="radio"/>
d. Students in self-contained classes are pulled out for enrichment in science	<input type="radio"/>	<input type="radio"/>
e. Students in self-contained classes are pulled out from science instruction for additional instruction in other content areas	<input type="radio"/>	<input type="radio"/>

3. **For schools that include any grades 9–12:** Indicate whether each of the following programs and/or practices is currently being implemented in your school. Mark one circle on each line.

	Yes	No
a. Physics courses offered this school year or in alternating years, on or off site	<input type="radio"/>	<input type="radio"/>
b. Students go to a Career and Technical Education (CTE) Center for science and/or engineering instruction.	<input type="radio"/>	<input type="radio"/>
c. Science and/or engineering courses are offered by telecommunications.	<input type="radio"/>	<input type="radio"/>
d. Students go to another K–12 school for science and/or engineering courses.	<input type="radio"/>	<input type="radio"/>
e. Students go to a college or university for science and/or engineering courses.	<input type="radio"/>	<input type="radio"/>

4. Which of the following are provided to teachers considered in need of special assistance in science teaching (for example: new teachers)? Mark all that apply.

- Seminars, classes, and/or study groups
- Guidance from a formally designated mentor or coach
- A higher level of supervision than for other teachers

5. **Indicate whether your school does each of the following to enhance students' interest and/or achievement in science and/or engineering.** Mark one circle on each line.

	Yes	No
a. Holds family science and/or engineering nights	<input type="radio"/>	<input type="radio"/>
b. Offers after-school help in science and/or engineering (for example: tutoring)	<input type="radio"/>	<input type="radio"/>
c. Offers formal after-school programs for enrichment in science and/or engineering	<input type="radio"/>	<input type="radio"/>
d. Offers one or more science clubs	<input type="radio"/>	<input type="radio"/>
e. Offers one or more engineering clubs	<input type="radio"/>	<input type="radio"/>
f. Participates in a local or regional science and/or engineering fair	<input type="radio"/>	<input type="radio"/>
g. Has one or more teams participating in science competitions (for example: Science Olympiad)	<input type="radio"/>	<input type="radio"/>
h. Has one or more teams participating in engineering competitions (for example: Robotics)	<input type="radio"/>	<input type="radio"/>
i. Encourages students to participate in science and/or engineering summer programs or camps offered by community colleges, universities, museums, or science centers	<input type="radio"/>	<input type="radio"/>
j. Sponsors visits to business, industry, and/or research sites related to science and/or engineering	<input type="radio"/>	<input type="radio"/>
k. Sponsors meetings with adult mentors who work in science and/or engineering fields	<input type="radio"/>	<input type="radio"/>

Your State Standards

6. **Please provide your opinion about each of the following statements in regard to your current state standards for science.** Mark one circle on each line.

	Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree
a. State science standards have been thoroughly discussed by science teachers in this school	①	②	③	④	⑤
b. There is a school-wide effort to align science instruction with the state science standards	①	②	③	④	⑤
c. Most science teachers in this school teach to the state standards	①	②	③	④	⑤
d. Your district organizes science professional development based on state standards	①	②	③	④	⑤

Science Courses Offered in Your School

7. **For schools that include grade 6: What types of science courses are offered to 6th grade classes in your school?** Mark one circle.

- Single-discipline science courses (for example: life science)
- Coordinated or Integrated science courses
- Both single-discipline and coordinated or integrated science courses

8. **For schools that include grade 7: What types of science courses are offered to 7th grade classes in your school?** Mark one circle.

- Single-discipline science courses (for example: life science)
- Coordinated or Integrated science courses
- Both single-discipline and coordinated or integrated science courses

9. **For schools that include grade 8: What types of science courses are offered to 8th grade classes in your school?** Mark one circle.

- Single-discipline science courses (for example: life science)
- Coordinated or Integrated science courses
- Both single-discipline and coordinated or integrated science courses

10. **For schools that include any grades 9–12:** Approximately how many grades 9–12 students in this school will not take a science course this year? Please enter your response in the space provided.

Questions 11–27 are for schools that include any grades 9–12 and ask about the types of science courses offered in your school this year. If your school does not include any of these grades skip to question 31.

11. Does your school offer one or more courses in Coordinated or Integrated science (including General Science and Physical Science) this school year in any of the grades 9–12? Mark one circle.

- Yes
- No *Skip to Question 13*

12. How many sections of Coordinated or Integrated science courses (including General Science and Physical Science) are offered in your school this year at each of the following levels? Please enter your responses in the spaces provided.

- a. Non-college prep _____
- b. College prep, including honors _____

13. Does your school offer one or more courses in Earth/Space Science this school year in any of the grades 9–12? Mark one circle

- Yes
- No *Skip to Question 15*

14. How many sections of Earth/Space Science courses are offered in your school this year at each of the following levels? Please enter your responses in the spaces provided.

- a. Non-college prep _____
- b. 1st year college prep, including honors _____
- c. 2nd year advanced, including Advanced Placement, International Baccalaureate, and concurrent college and high school credit/dual enrollment courses _____

15. Does your school offer one or more courses in Life Science/Biology this school year in any of the grades 9–12? Mark one circle.

- Yes
- No *Skip to Question 17*

16. How many sections of Life Science/Biology courses are offered in your school this year at each of the following levels? Please enter your responses in the spaces provided.

- a. Non-college prep _____
- b. 1st year college prep, including honors _____
- c. 2nd year advanced, including Advanced Placement, International Baccalaureate, and concurrent college and high school credit/dual enrollment courses _____

17. Does your school offer one or more courses in Environmental Science/Ecology this school year in any of the grades 9–12? Mark one circle.

- Yes
- No *Skip to Question 19*

18. How many sections of Environmental Science/Ecology courses are offered in your school this year at each of the following levels? Please enter your responses in the spaces provided.

- a. Non-college prep _____
- b. 1st year college prep, including honors _____
- c. 2nd year advanced, including Advanced Placement, International Baccalaureate, and concurrent college and high school credit/dual enrollment courses _____

19. Does your school offer one or more courses in Chemistry this school year in any of the grades 9–12?

Mark one circle.

- Yes
- No *Skip to Question 21*

20. How many sections of Chemistry courses are offered in your school this year at each of the following levels? Please enter your responses in the spaces provided.

- a. Non-college prep _____
- b. 1st year college prep, including honors _____
- c. 2nd year advanced, including Advanced Placement, International Baccalaureate, and concurrent college and high school credit/dual enrollment courses _____

21. Does your school offer one or more courses in Physics this school year in any of the grades 9–12? Mark one circle.

- Yes
- No *Skip to Question 23*

22. How many sections of Physics courses are offered in your school this year at each of the following levels? Please enter your responses in the spaces provided.

- a. Non-college prep _____
- b. 1st year college prep, including honors _____
- c. 2nd year advanced, including Advanced Placement, International Baccalaureate, and concurrent college and high school credit/dual enrollment courses _____

23. Does your school offer one or more courses in Engineering this school year in any of the grades 9–12?

- Count courses that address such things as the nature of engineering, engineering design processes, technological systems, and technology and society.
- **Do not** include career-technical education (CTE) courses that cover such things as automotive repair, audio/video production, etc.
- Mark one circle.
 - Yes
 - No *Skip to Question 25*

24. How many sections of Engineering courses are offered in your school this year at each of the following levels? Please enter your responses in the spaces provided.

- a. Non-college prep _____
- b. 1st year college prep, including honors _____
- c. 2nd year advanced, including concurrent college and high school credit/dual enrollment courses _____

25. Does your school offer each of the following types of science courses that might qualify for college credit?

- Include both courses that are offered every year and those offered in alternating years.
- Mark one circle on each line.

	Yes	No
a. Advanced Placement (AP) science courses	<input type="radio"/>	<input type="radio"/>
b. International Baccalaureate (IB) science courses	<input type="radio"/>	<input type="radio"/>
c. Concurrent college and high school credit/dual enrollment science courses	<input type="radio"/>	<input type="radio"/>

26. *[Skip if you answered “No” to 25c]* When are concurrent college and high school credit/dual enrollment science course offered in this school? Mark one circle.

- Not offered this school year, but offered in alternating years
- Offered this school year

27. Is each of the following science courses offered in this school? Mark one circle on each line.

	Not offered at all	Not offered this school year, but offered in alternating years	Offered this school year
a. AP Biology	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. AP Chemistry	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. AP Physics B	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. AP Physics C	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. AP Environmental Science	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f. IB Biology	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g. IB Chemistry	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
h. IB Physics	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Science Requirements

28. *For schools that include grade 12:* In order to graduate from this high school, how many years of grades 9–12 science are students required to take? Mark one circle.

- 1 year
- 2 years
- 3 years
- 4 years

29. *For schools that include grade 12: [Skip if your school does not offer Engineering courses]* Does participation in Engineering courses count towards students’ high school graduation requirements for science? Mark one circle.

- Yes
- No

30. *For schools that include grade 12:* How many years of science are required for entry into a four-year college or university in your state university system?

- If your state university system has multiple tiers, answer for the lowest tier that awards four-year degrees not including community colleges that might include four-year programs.
- Mark one circle.
 - 1 year
 - 2 years
 - 3 years
 - 4 years

Budget for Science Instruction

31. For this school, how much money was spent on each of the following during the most recently completed budget year?

- If you don't know the exact amounts, please provide your best estimates.
- Enter each response as a whole dollar amount.
- Please enter your responses in the spaces provided.

a. Consumable science supplies (for example: chemicals, living organisms, batteries)	_____
b. Science equipment (non-consumable, non-perishable items such as microscopes, scales, etc., but not computers)	_____
c. Software for science instruction	_____

Influences on Science Instruction

32. Please rate the effect of each of the following on the quality of science instruction in your school. Mark one circle on each line.

	Inhibits effective instruction		Neutral or mixed		Promotes effective instruction	N/A or Don't Know
a. District science professional development policies and practices	①	②	③	④	⑤	○
b. Time provided for teacher professional development in science	①	②	③	④	⑤	○
c. Importance that the school places on science	①	②	③	④	⑤	○
d. Public attitudes toward science instruction	①	②	③	④	⑤	○
e. Conflict between efforts to improve science instruction and other school and/or district initiatives	①	②	③	④	⑤	○
f. How science instructional resources are managed (for example: distributing and refurbishing materials)	①	②	③	④	⑤	○

33. In your opinion, how great a problem is each of the following for science instruction in your school as a whole? Mark one circle on each line.

	Not a significant problem	Somewhat of a problem	Serious problem
a. Lack of science facilities (for example: lab tables, electric outlets, faucets and sinks in classrooms)	○	○	○
b. Inadequate funds for purchasing science equipment and supplies	○	○	○
c. Inadequate supply of science textbooks/modules	○	○	○
d. Inadequate materials for individualizing science instruction	○	○	○
e. Low student interest in science	○	○	○
f. Low student reading abilities	○	○	○
g. Lack of teacher interest in science	○	○	○
h. Inadequate teacher preparation to teach science	○	○	○
i. Insufficient time to teach science	○	○	○
j. Lack of opportunities for science teachers to share ideas	○	○	○
k. Inadequate science-related professional development opportunities	○	○	○

33. (continued) **In your opinion, how great a problem is each of the following for science instruction in your school as a whole?** Mark one circle on each line.

	Not a significant problem	Somewhat of a problem	Serious problem
l. Interruptions for announcements, assemblies, and other school activities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
m. Large class sizes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
n. High student absenteeism	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
o. Inappropriate student behavior	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
p. Lack of parental support for science education	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
q. Community resistance to the teaching of “controversial” issues in science (for example: evolution, climate change)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Science Teacher Turnover

34. **For schools that include any grades 6–12:** How many middle and/or high school science teachers who taught in your school last year (2010–11) did not return to teach science in your school this year (2011–12)? Please enter your response in the space provided.

35. **For schools that include any grades 6–12:** [Skip if you answered “0” to question 34] How many of those teachers did not return for each of the following reasons? Please enter your responses in the spaces provided.

- | | |
|--|-------|
| a. Left voluntarily, including science teachers who moved to another department or school, left the profession, or retired | _____ |
| b. Were reassigned to another position, department, or school in the district | _____ |
| c. Were dismissed or not rehired for poor performance | _____ |
| d. Were dismissed or not rehired because of budget constraints | _____ |

36. **For schools that include any grades 6–12:** For the 2011–12 school year, how difficult was it to fill middle and/or high school science teacher vacancies in your school with fully qualified teachers? Mark one circle.

- There were no vacancies for science teachers
 - Easy
 - Somewhat difficult
 - Very difficult
 - Could not fill the vacancies
- } Skip to Question 39

37. **For schools that include any grades 9–12:** For the 2011–2012 school year, were there particular science disciplines for which it was more difficult to fill vacancies with fully qualified teachers than others? Mark one circle.

- Yes
- No Skip to Question 39

38. **For schools that include any grades 9–12:** For the 2011–12 school year, how difficult was it to fill vacancies with fully qualified teachers of: Mark one circle on each line.

	There were no vacancies for this discipline	Easy	Somewhat difficult	Very difficult	Could not fill the vacancies
a. Biology/Life science?	①	②	③	④	⑤
b. Chemistry?	①	②	③	④	⑤
c. Earth/Space science?	①	②	③	④	⑤
d. Physics?	①	②	③	④	⑤
e. A combination of science disciplines?	①	②	③	④	⑤

Science Professional Development Opportunities

39. This question is about in-service (professional development) programs offered by your school and/or district, possibly in conjunction with other organizations (for example: other school districts, colleges or universities, museums, professional associations, commercial vendors).

In the last three years, has your school and/or district offered in-service workshops specifically focused on science or science teaching? Mark one circle.

- Yes
- No *Skip to Question 41*

40. Please indicate the extent to which in-service workshops offered by your school and/or district in the last three years addressed deepening teacher understanding of each of the following: Mark one circle on each line.

	Not at all		Somewhat		To a great extent
a. Science content	①	②	③	④	⑤
b. State science standards	①	②	③	④	⑤
c. How to use particular science instructional materials (for example: textbooks or modules)	①	②	③	④	⑤
d. How students think about various science ideas	①	②	③	④	⑤
e. How to monitor student understanding during science instruction	①	②	③	④	⑤
f. How to adapt science instruction to address student misconceptions	①	②	③	④	⑤
g. How to use technology in science instruction	①	②	③	④	⑤
h. How to use investigation-oriented science teaching strategies	①	②	③	④	⑤
i. How to teach science to students who are English language learners	①	②	③	④	⑤
j. How to provide alternative science learning experiences for students with special needs	①	②	③	④	⑤

41. *In the last three years, has your school offered teacher study groups where teachers meet on a regular basis to discuss teaching and learning of science, and possibly other content areas as well (sometimes referred to as Professional Learning Communities, PLCs, or lesson study)?* Mark one circle.

- Yes
- No *Skip to Question 53*

Questions 42–52 ask about teacher study groups offered in your school in the last three years that included a focus on science content and/or science instruction (sometimes referred to as Professional Learning Communities, PLCs, or lesson study).

42. **For schools that include any grades K–5:** Are teachers of grades K–5 science classes required to participate in these science-focused *teacher study groups*? Mark one circle.
- Yes
 - No
43. **For schools that include any grades 6–8:** Are teachers of grades 6–8 science classes required to participate in these science-focused *teacher study groups*? Mark one circle.
- Yes
 - No
44. **For schools that include any grades 9–12:** Are teachers of grades 9–12 science classes required to participate in these science-focused *teacher study groups*? Mark one circle.
- Yes
 - No
45. Has your school specified a schedule for when these science-focused *teacher study groups* are expected to meet? Mark one circle.
- Yes
 - No *Skip to Question 48*
46. Over what period of time were these science-focused *teacher study groups* typically expected to meet? Mark one circle.
- The entire school year
 - One semester
 - Less than one semester
47. How often have these science-focused *teacher study groups* typically been expected to meet? Mark one circle.
- Less than once a month
 - Once a month
 - Twice a month
 - More than twice a month
48. Which of the following describe the typical science-focused *teacher study groups* in this school? Mark all that apply.
- Organized by grade level
 - Include teachers from multiple grade levels
 - Limited to teachers from this school
 - Include teachers from other schools in the district
 - Include teachers from other schools outside of your district
 - Include school and/or district administrators
 - Include parents/guardians or other community members
 - Include higher education faculty or other “consultants”

49. Which of the following describe the typical science-focused *teacher study groups* in this school? Mark all that apply.

- Teachers engage in science investigations.
- Teachers plan science lessons together.
- Teachers analyze student science assessment results.
- Teachers analyze classroom artifacts (for example: student work samples).
- Teachers analyze science instructional materials (for example: textbooks or modules).

50. To what extent have these science-focused *teacher study groups* addressed deepening teacher understanding of each of the following? Mark one circle on each line.

	Not at all		Somewhat		To a great extent
a. Science content	①	②	③	④	⑤
b. State science standards	①	②	③	④	⑤
c. How to use particular science instructional materials (for example: textbooks or modules)	①	②	③	④	⑤
d. How students think about various science ideas	①	②	③	④	⑤
e. How to monitor student understanding during science instruction	①	②	③	④	⑤
f. How to adapt science instruction to address student misconceptions	①	②	③	④	⑤
g. How to use technology in science instruction	①	②	③	④	⑤
h. How to use investigation-oriented science teaching strategies	①	②	③	④	⑤
i. How to teach science to students who are English language learners	①	②	③	④	⑤
j. How to provide alternative science learning experiences for students with special needs	①	②	③	④	⑤

51. Have there been designated leaders for these science-focused *teacher study groups*? Mark one circle.

- Yes
- No *Skip to Question 53*

52. The designated leaders of these science-focused *teacher study groups* were from: Mark all that apply.

- This school
- Elsewhere in this district
- College or University
- External consultants
- Other, please specify: _____

53. Thinking about last school year, which of the following were used to provide teachers in this school with time for in-service (professional development) workshops/teacher study groups that included a focus on science content and/or science instruction, regardless of whether they were offered by your school and/or district? Mark all that apply.

- Early dismissal and/or late start for students
- Professional days/teacher work days during the students' school year
- Professional days/teacher work days before and/or after the students' school year
- Common planning time for teachers
- Substitute teachers to cover teachers' classes while they attend professional development
- None of the above

54. Do any teachers in your school have access to one-on-one “coaching” focused on improving their science instruction? Mark one circle.

- Yes
- No *Skip to End*

55. *For schools that include any grades K–5:* Are teachers of grades K–5 science classes required to receive one-on-one science-focused coaching? Mark one circle.

- Yes
- No

56. *For schools that include any grades 6–8:* Are teachers of grades 6–8 science classes required to receive one-on-one science-focused coaching? Mark one circle.

- Yes
- No

57. *For schools that include any grades 9–12:* Are teachers of grades 9–12 science classes required to receive one-on-one science-focused coaching? Mark one circle.

- Yes
- No

58. To what extent is one-on-one science-focused coaching in your school provided by each of the following? Mark one circle on each line.

	Not at all		Somewhat		To a great extent
a. The principal of your school	①	②	③	④	⑤
b. An assistant principal at your school	①	②	③	④	⑤
c. District administrators including science supervisors/coordinators	①	②	③	④	⑤
d. Teachers/coaches who do not have classroom teaching responsibilities	①	②	③	④	⑤
e. Teachers/coaches who have part-time classroom teaching responsibilities	①	②	③	④	⑤
f. Teachers/coaches who have full-time classroom teaching responsibilities	①	②	③	④	⑤

Thank you!