



SECTION FOUR
SCIENCE PROGRAM QUESTIONNAIRE

Science Program Questionnaire

Science Program Questionnaire Tables

2012 NATIONAL SURVEY OF SCIENCE AND MATHEMATICS EDUCATION SCIENCE PROGRAM QUESTIONNAIRE

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 describe your position? [Select all that apply.]

<input type="checkbox"/>	Science department chair
<input type="checkbox"/>	Science lead teacher or coach
<input type="checkbox"/>	Regular classroom teacher
<input type="checkbox"/>	Principal
<input type="checkbox"/>	Assistant principal
<input type="checkbox"/>	Other (please specify: _____)

School Programs and Practices

2. *[Presented only to schools that include self-contained teachers]*

Indicate whether each of the following programs and/or practices is currently being implemented in your school. [Select one on each row.]

	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 to</i> their regular teacher.	<input type="radio"/>	<input type="radio"/>
c. Students in self-contained classes pulled out for remedial instruction in science.	<input type="radio"/>	<input type="radio"/>
d. Students in self-contained classes pulled out for enrichment in science.	<input type="radio"/>	<input type="radio"/>
e. Students in self-contained classes pulled out from science instruction for additional instruction in other content areas.	<input type="radio"/>	<input type="radio"/>

3. *[Presented only to schools that include any grades 9–12]*

Indicate whether each of the following programs and/or practices is currently being implemented in your school. [Select one on each row.]

	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 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)? [Select all that apply.]

<input type="checkbox"/>	Seminars, classes, and/or study groups
<input type="checkbox"/>	Guidance from a formally designated mentor or coach
<input type="checkbox"/>	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. [Select one on each row.]

	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. [Select one on each row.]

	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/diocese organizes science professional development based on state standards <i>[Not presented to non-Catholic private schools]</i>	①	②	③	④	⑤

Science Courses Offered in Your School

7. *[Presented only to schools that include grade 6]*

What types of science courses are offered to 6th grade classes in your school?

<input type="radio"/>	Single-discipline science courses (for example: life science)
<input type="radio"/>	Coordinated or Integrated science courses
<input type="radio"/>	Both single-discipline and coordinated or integrated science courses

8. *[Presented only to schools that include grade 7]*

What types of science courses are offered to 7th grade classes in your school?

<input type="radio"/>	Single-discipline science courses (for example: life science)
<input type="radio"/>	Coordinated or Integrated science courses
<input type="radio"/>	Both single-discipline and coordinated or integrated science courses

9. *[Presented only to schools that include grade 8]*

What types of science courses are offered to 8th grade classes in your school?

<input type="radio"/>	Single-discipline science courses (for example: life science)
<input type="radio"/>	Coordinated or Integrated science courses
<input type="radio"/>	Both single-discipline and coordinated or integrated science courses

10. *[Presented only to 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?
 [Enter your response as a whole number (for example: 1500); do not use a comma.]

Science Courses Offered in Your School

[Questions 11–27 presented only to schools that include any grades 9–12; schools that do not include any of these grades skip to Q31]

This next set of questions asks about the number of sections and level of science courses offered in grades 9–12 in your school this year in each of the following categories:

- Coordinated or Integrated Science (including General Science and Physical Science)
- Earth/Space Science
- Life Sciences/Biology
- Environmental Science/Ecology (as a separate course)
- Chemistry
- Physics
- Engineering

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?

<input type="radio"/>	Yes
<input type="radio"/>	No <i>[Skip to Q13]</i>

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? [Enter each response as a whole number (for example: 15).]

- 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?

<input type="radio"/>	Yes
<input type="radio"/>	No <i>[Skip to Q15]</i>

14. How many sections of Earth/Space Science courses are offered in your school this year at each of the following levels? [Enter each response as a whole number (for example: 15).]

- 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?

<input type="radio"/>	Yes
<input type="radio"/>	No <i>[Skip to Q17]</i>

16. How many sections of Life Science/Biology courses are offered in your school this year at each of the following levels? [Enter each response as a whole number (for example: 15).]

- 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?

<input type="radio"/>	Yes
<input type="radio"/>	No <i>[Skip to Q19]</i>

18. How many sections of Environmental Science/Ecology courses are offered in your school this year at each of the following levels? [Enter each response as a whole number (for example: 15).]

- 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?

<input type="radio"/>	Yes
<input type="radio"/>	No <i>[Skip to Q21]</i>

20. How many sections of Chemistry courses are offered in your school this year at each of the following levels? [Enter each response as a whole number (for example: 15).]

- Non-college prep _____
- 1st year college prep, including honors _____
- 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?

<input type="radio"/>	Yes
<input type="radio"/>	No <i>[Skip to Q23]</i>

22. How many sections of Physics courses are offered in your school this year at each of the following levels? [Enter each response as a whole number (for example: 15).]

- Non-college prep _____
- 1st year college prep, including honors _____
- 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.

<input type="radio"/>	Yes
<input type="radio"/>	No <i>[Skip to Q25]</i>

24. How many sections of Engineering courses are offered in your school this year at each of the following levels? [Enter each response as a whole number (for example: 15).]

- Non-college prep _____
- 1st year college prep, including honors _____
- 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.)

[Select one on each row.]

	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. [Presented only to schools that answered “Yes” to Q25c]

When are concurrent college and high school credit/dual enrollment science courses offered in this school?

<input type="radio"/>	Not offered this school year, but offered in alternating years
<input type="radio"/>	Offered this school year

27. [Q27a–e presented only to schools that answered “Yes” to Q25a; Q27f–h presented only to schools that answered “Yes” to Q25b]

Is each of the following science courses offered in this school? [Select one on each row.]

	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. [Presented only to 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?

1 year	2 years	3 years	4 years
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

29. [Presented only to schools that include grade 12 and answered “Yes” to Q23]

Does participation in Engineering courses count towards students’ high school graduation requirements for science?

<input type="radio"/>	Yes
<input type="radio"/>	No

30. [Presented only to 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.

1 year	2 years	3 years	4 years
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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 (for example: 1500); do not include commas or dollar signs.]

- 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.
 [Select one on each row.]

	Inhibits effective instruction	Neutral or mixed			Promotes effective instruction	N/A or Don't Know
a. District/Diocese science professional development policies and practices <i>[Not presented to non-Catholic private schools]</i>	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/diocese 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**? [Select one on each row.]

	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)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. Inadequate funds for purchasing science equipment and supplies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. Inadequate supply of science textbooks/modules	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. Inadequate materials for individualizing science instruction	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. Low student interest in science	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f. Low student reading abilities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g. Lack of teacher interest in science	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
h. Inadequate teacher preparation to teach science	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
i. Insufficient time to teach science	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
j. Lack of opportunities for science teachers to share ideas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
k. Inadequate science-related professional development opportunities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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. *[Presented only to 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)? [Enter your response as a whole number (for example: 15). Please enter “0” if all teachers who taught science returned this school year.] _____ *[If “0” Skip to Q36]*

35. *[Presented only to schools that include any grades 6–12]*

How many of those teachers did not return for each of the following reasons? [Enter each response as a whole number (for example: 15). Please enter “0” for categories in which there were not any science teachers who did not return for that reason.]

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

36. [Presented only to 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?

<input type="radio"/>	There were no vacancies for science teachers <i>[Skip to Q39]</i>
<input type="radio"/>	Easy
<input type="radio"/>	Somewhat difficult
<input type="radio"/>	Very difficult
<input type="radio"/>	Could not fill the vacancies

37. [Presented only to schools that include any grades 9–12]

For the 2011–12 school year, were there particular science disciplines for which it was more difficult to fill vacancies with fully qualified teachers than others?

<input type="radio"/>	Yes
<input type="radio"/>	No <i>[Skip to Q39]</i>

38. [Presented only to 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: [Select one on each row.]

	There were no vacancies for this discipline	Easy	Somewhat difficult	Very difficult	Could not fill the vacancies
a. Biology/Life science?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. Chemistry?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. Earth/Space science?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. Physics?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. A combination of science disciplines?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Science Professional Development Opportunities

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

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

<input type="radio"/>	Yes
<input type="radio"/>	No <i>[Skip to Q41]</i>

40. Please indicate the extent to which in-service **workshops** offered by your school and/or district/ diocese **in the last three years** addressed deepening teacher understanding of each of the following: [Select one on each row.]

	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)?

<input type="radio"/>	Yes
<input type="radio"/>	No <i>[Skip to Q53]</i>

42. *[Presented only to 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**?

<input type="radio"/>	Yes
<input type="radio"/>	No

43. *[Presented only to 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**?

<input type="radio"/>	Yes
<input type="radio"/>	No

44. *[Presented only to 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**?

<input type="radio"/>	Yes
<input type="radio"/>	No

45. Has your school specified a schedule for when these science-focused **teacher study groups** are expected to meet?

<input type="radio"/>	Yes
<input type="radio"/>	No <i>[Skip to Q48]</i>

46. Over what period of time were these science-focused **teacher study groups** typically expected to meet?

<input type="radio"/>	The entire school year
<input type="radio"/>	One semester
<input type="radio"/>	Less than one semester

47. How often have these science-focused **teacher study groups** typically been expected to meet?

<input type="radio"/>	Less than once a month
<input type="radio"/>	Once a month
<input type="radio"/>	Twice a month
<input type="radio"/>	More than twice a month

48. Which of the following describe the typical science-focused **teacher study groups** in this school?
[Select all that apply.]

<input type="checkbox"/>	Organized by grade level
<input type="checkbox"/>	Include teachers from multiple grade levels
<input type="checkbox"/>	Limited to teachers from this school
<input type="checkbox"/>	Include teachers from other schools in the district/diocese <i>[Not presented to non-Catholic private schools]</i>
<input type="checkbox"/>	Include teachers from other schools outside of your district/diocese
<input type="checkbox"/>	Include school and/or district/diocese administrators
<input type="checkbox"/>	Include parents/guardians or other community members
<input type="checkbox"/>	Include higher education faculty or other “consultants”

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

<input type="checkbox"/>	Teachers engage in science investigations.
<input type="checkbox"/>	Teachers plan science lessons together.
<input type="checkbox"/>	Teachers analyze student science assessment results.
<input type="checkbox"/>	Teachers analyze classroom artifacts (for example: student work samples).
<input type="checkbox"/>	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? [Select one on each row.]

	Somewhat				To a great extent
	Not at all				
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**?

<input type="radio"/>	Yes
<input type="radio"/>	No <i>[Skip to Q53]</i>

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

<input type="checkbox"/>	This school
<input type="checkbox"/>	Elsewhere in this district/diocese <i>[Not presented to non-Catholic private schools]</i>
<input type="checkbox"/>	College or University
<input type="checkbox"/>	External consultants
<input type="checkbox"/>	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/diocese? [Select all that apply.]

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

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

<input type="radio"/>	Yes
<input type="radio"/>	No <i>[Skip to End]</i>

55. [Presented only to schools that include any grades K–5]

Are teachers of grades K–5 science classes required to receive one-on-one science-focused coaching?

<input type="radio"/>	Yes
<input type="radio"/>	No

56. [Presented only to schools that include any grades 6–8]

Are teachers of grades 6–8 science classes required to receive one-on-one science-focused coaching?

<input type="radio"/>	Yes
<input type="radio"/>	No

57. [Presented only to schools that include any grades 9–12]

Are teachers of grades 9–12 science classes required to receive one-on-one science-focused coaching?

<input type="radio"/>	Yes
<input type="radio"/>	No

58. To what extent is science-focused one-on-one coaching in your school provided by each of the following? [Select one on each row.]

	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/Diocese administrators including science supervisors/coordinators <i>[Not presented to non-Catholic private schools]</i>	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!

SCIENCE PROGRAM QUESTIONNAIRE TABLES

Table SPQ 1
Titles of Science Program Questionnaire Representatives

	Percent of Representatives		
	Elementary	Middle	High
Science department chair	11 (1.8)	27 (2.7)	56 (3.5)
Science lead teacher or coach	24 (2.7)	25 (3.0)	24 (3.0)
Regular classroom teacher	73 (2.6)	72 (3.1)	63 (3.4)
Principal	7 (2.1)	8 (2.4)	5 (2.5)
Assistant principal	1 (0.3)	1 (0.5)	1 (0.6)
Other	11 (2.0)	11 (2.5)	9 (2.8)

Table SPQ 2
Use of Various Instructional Arrangements in Elementary Schools

	Percent of Schools
Students in self-contained classes receive science instruction from a science specialist <i>instead of</i> their regular teacher	10 (1.9)
Students in self-contained classes receive science instruction from a science specialist <i>in addition</i> to their regular teacher	16 (2.4)
Students in self-contained classes pulled out for remedial instruction in science	7 (1.5)
Students in self-contained classes pulled out for enrichment in science	10 (1.8)
Students in self-contained classes pulled out from science instruction for additional instruction in other content areas	22 (2.3)

Table SPQ 3
Science Programs and Practices Currently Being Implemented in High Schools

	Percent of Schools
Physics courses offered this school year or in alternating years, on or off site	88 (2.9)
Students go to a Career and Technical Education (CTE) Center for science and/or engineering instruction	22 (3.2)
Science and/or engineering courses offered by telecommunications	18 (2.9)
Students go to another K–12 school for science and/or engineering courses	8 (2.5)
Students go to a college or university for science and/or engineering courses	22 (2.4)

Table SPQ 4.1
Services Provided to Elementary School Teachers in Need of Special Assistance in Teaching Science

	Percent of Schools
Seminars, classes, and/or study groups	41 (2.5)
Guidance from a formally designated mentor or coach	51 (3.4)
A higher level of supervision than for other teachers	12 (2.1)

Table SPQ 4.2
Services Provided to Middle School
Science Teachers in Need of Special Assistance in Teaching

	Percent of Schools
Seminars, classes, and/or study groups	52 (3.0)
Guidance from a formally designated mentor or coach	50 (3.3)
A higher level of supervision than for other teachers	21 (2.3)

Table SPQ 4.3
Services Provided to High School
Science Teachers in Need of Special Assistance in Teaching

	Percent of Schools
Seminars, classes, and/or study groups	50 (3.7)
Guidance from a formally designated mentor or coach	63 (3.3)
A higher level of supervision than for other teachers	34 (2.7)

Table SPQ 5.1
Elementary School Programs/Practices to
Enhance Students' Interest and/or Achievement in Science/Engineering

	Percent of Schools
Holds family science and/or engineering nights	26 (2.8)
Offers after-school help in science and/or engineering (e.g., tutoring)	31 (2.7)
Offers formal after-school programs for enrichment in science and/or engineering	17 (2.5)
Offers one or more science clubs	20 (2.6)
Offers one or more engineering clubs	7 (2.0)
Participates in a local or regional science and/or engineering fair	35 (3.0)
Has one or more teams participating in science competitions (e.g., Science Olympiad)	13 (2.0)
Has one or more teams participating in engineering competitions (e.g., Robotics)	11 (1.9)
Encourages students to participate in science and/or engineering summer programs or camps offered by community colleges, universities, museums, or science centers	(3.5)
Sponsors visits to business, industry, and/or research sites related to science and/or engineering	50 (2.7)
Sponsors meetings with adult mentors who work in science and/or engineering fields	30 (2.4)

Table SPQ 5.2
Middle School Programs/Practices to
Enhance Students' Interest and/or Achievement in Science/Engineering

	Percent of Schools
Holds family science and/or engineering nights	23 (3.0)
Offers after-school help in science and/or engineering (e.g., tutoring)	53 (3.6)
Offers formal after-school programs for enrichment in science and/or engineering	24 (2.7)
Offers one or more science clubs	29 (3.0)
Offers one or more engineering clubs	13 (2.5)
Participates in a local or regional science and/or engineering fair	39 (3.3)
Has one or more teams participating in science competitions (e.g., Science Olympiad)	22 (2.2)
Has one or more teams participating in engineering competitions (e.g., Robotics)	19 (2.4)
Encourages students to participate in science and/or engineering summer programs or camps offered by community colleges, universities, museums, or science centers	(3.6) 63
Sponsors visits to business, industry, and/or research sites related to science and/or engineering	35 (3.4)
Sponsors meetings with adult mentors who work in science and/or engineering fields	24 (3.0)

Table SPQ 5.3
High School Programs/Practices to
Enhance Students' Interest and/or Achievement in Science/Engineering

	Percent of Schools
Holds family science and/or engineering nights	16 (2.9)
Offers after-school help in science and/or engineering (e.g., tutoring)	81 (2.9)
Offers formal after-school programs for enrichment in science and/or engineering	29 (3.1)
Offers one or more science clubs	47 (3.4)
Offers one or more engineering clubs	21 (2.0)
Participates in a local or regional science and/or engineering fair	46 (3.2)
Has one or more teams participating in science competitions (e.g., Science Olympiad)	40 (3.4)
Has one or more teams participating in engineering competitions (e.g., Robotics)	33 (2.4)
Encourages students to participate in science and/or engineering summer programs or camps offered by community colleges, universities, museums, or science centers	(3.5) 75
Sponsors visits to business, industry, and/or research sites related to science and/or engineering	48 (3.6)
Sponsors meetings with adult mentors who work in science and/or engineering fields	28 (2.6)

Table SPQ 6.1
Opinions about Various Statements
Regarding State Science Standards in Elementary Schools

	Percent of Schools				
	Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree
State science standards have been thoroughly discussed by science teachers in this school	3 (1.1)	20 (2.4)	8 (1.7)	46 (2.9)	22 (2.2)
There is a school-wide effort to align science instruction with the state science standards	4 (1.3)	9 (1.8)	7 (1.6)	46 (3.1)	34 (2.9)
Most science teachers in this school teach to the state standards	2 (1.0)	5 (1.2)	9 (2.3)	53 (3.6)	29 (2.8)
Your district/diocese organizes science professional development based on state standards [†]	10 (2.0)	20 (2.3)	14 (2.5)	38 (2.9)	18 (2.1)

[†] Item presented only to public and Catholic schools.

Table SPQ 6.2
Opinions about Various Statements
Regarding State Science Standards in Middle Schools

	Percent of Schools				
	Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree
State science standards have been thoroughly discussed by science teachers in this school	3 (1.0)	16 (2.8)	4 (1.1)	43 (3.3)	34 (3.0)
There is a school-wide effort to align science instruction with the state science standards	4 (1.1)	9 (2.1)	4 (1.0)	42 (2.9)	41 (3.1)
Most science teachers in this school teach to the state standards	3 (1.0)	3 (0.9)	8 (2.1)	46 (3.3)	40 (3.1)
Your district/diocese organizes science professional development based on state standards [†]	9 (2.1)	25 (2.9)	14 (1.8)	30 (2.6)	22 (3.1)

[†] Item presented only to public and Catholic schools.

Table SPQ 6.3
Opinions about Various Statements
Regarding State Science Standards in High Schools

	Percent of Schools				
	Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree
State science standards have been thoroughly discussed by science teachers in this school	2 (0.6)	9 (1.5)	6 (2.3)	43 (3.5)	40 (3.4)
There is a school-wide effort to align science instruction with the state science standards	3 (0.9)	8 (1.9)	7 (2.4)	37 (3.7)	44 (3.5)
Most science teachers in this school teach to the state standards	3 (0.8)	3 (1.0)	13 (3.7)	40 (3.6)	41 (3.6)
Your district/diocese organizes science professional development based on state standards [†]	8 (1.3)	20 (2.0)	18 (1.7)	28 (2.7)	26 (3.3)

[†] Item presented only to public and Catholic schools.

Table SPQ 7, 8, 9
Type of Middle School Science Courses Offered

	Percent of Schools [†]		
	6 th Grade	7 th Grade	8 th Grade
Single-discipline science courses (e.g., life science)	36 (3.6)	46 (3.8)	47 (3.8)
Coordinated or Integrated science courses	45 (4.1)	38 (3.7)	36 (3.7)
Both single-discipline and coordinated or integrated science courses	19 (3.5)	15 (3.6)	18 (3.5)

[†] Includes all schools containing the specified grade.

There is no table for SPQ 10.

Table SPQ 11 and 12
High Schools Offering One or More Courses in Coordinated or Integrated Science, including General Science and Physical Science

	Percent of Schools[†]
Any coordinated or integrated science course	61 (3.9)
Non-college prep	54 (3.9)
College prep, including honors	43 (2.8)

[†] Schools indicating on Q11 that they do not offer any courses in coordinated or integrated science are treated as not offering each of the levels of coordinated or integrated science courses.

Table SPQ 13 and 14
High Schools Offering One or More Courses in Earth/Space Science

	Percent of Schools[†]
Any Earth/space science course	46 (3.7)
Non-college prep	37 (3.0)
1 st year college prep, including honors	25 (3.2)
2 nd year advanced	4 (0.7)

[†] Schools indicating in Q13 that they do not offer any courses in Earth/space science are treated as not offering each of the levels of Earth/space science courses.

Table SPQ 15 and 16
High Schools Offering One or More Courses in Life Science/Biology

	Percent of Schools[†]
Any life science/biology course	93 (3.2)
Non-college prep	68 (3.6)
1 st year college prep, including honors	84 (3.7)
2 nd year advanced	58 (3.5)

[†] Schools indicating in Q15 that they do not offer any courses in life science/biology are treated as not offering each of the levels of life science/biology courses.

Table SPQ 17 and 18
High Schools Offering One or More Courses in Environmental Science/Ecology

	Percent of Schools[†]
Any environmental science/ecology course	43 (3.1)
Non-college prep	28 (2.4)
1 st year college prep, including honors	28 (2.2)
2 nd year advanced	17 (1.3)

[†] Schools indicating in Q17 that they do not offer any courses in environmental science/ecology are treated as not offering each of the levels of environmental science/ecology courses.

**Table SPQ 19 and 20
High Schools Offering One or More Courses in Chemistry**

	Percent of Schools[†]
Any chemistry course	89 (3.6)
Non-college prep	48 (3.3)
1 st year college prep, including honors	80 (3.8)
2 nd year advanced	40 (2.7)

[†] Schools indicating in Q19 that they do not offer any courses in chemistry are treated as not offering each of the levels of chemistry courses.

**Table SPQ 21 and 22
High Schools Offering One or More Courses in Physics**

	Percent of Schools[†]
Any physics course	79 (3.7)
Non-college prep	34 (2.9)
1 st year college prep, including honors	72 (3.7)
2 nd year advanced	32 (2.2)

[†] Schools indicating in Q21 that they do not offer any courses in physics are treated as not offering each of the levels of physics courses.

**Table SPQ 23 and 24
High Schools Offering One or More Courses in Engineering**

	Percent of Schools[†]
Any engineering course	22 (1.9)
Non-college prep	13 (1.9)
1 st year college prep, including honors	11 (1.3)
2 nd year advanced	5 (1.0)

[†] Schools indicating in Q23 that they do not offer any courses in engineering are treated as not offering each of the levels of engineering courses.

**Table SPQ 25
High Schools Offering Science Courses that Might Qualify for College Credit**

	Percent of Schools
Advanced Placement (AP) science courses	49 (3.2)
International Baccalaureate (IB) science courses	4 (0.6)
Concurrent college and high school credit/dual enrollment science courses	28 (2.8)

**Table SPQ 26
When High Schools Offer Concurrent College and
High School Credit/Dual Enrollment Science Courses**

	Percent of Schools
Not offered at all [†]	72 (2.8)
Not offered this school year, but offered in alternating years	2 (0.9)
Offered this school year	26 (2.8)

[†] Schools indicating in Q25 that they do not offer concurrent college and high school credit/dual enrollment courses are included in the "Not offered at all" category.

Table SPQ 27
When High Schools Offer Various Advanced Placement and International Baccalaureate Science Courses

	Percent of Schools		
	Not offered at all [†]	Not offered this school year, but offered in alternating years	Offered this school year
AP Biology	57 (2.8)	5 (1.2)	37 (2.5)
AP Chemistry	66 (2.3)	5 (1.1)	29 (2.2)
AP Physics B	78 (1.8)	3 (0.8)	19 (1.5)
AP Physics C	88 (1.2)	3 (0.7)	9 (1.0)
AP Environmental Science	83 (1.3)	3 (0.7)	14 (1.1)
IB Biology	97 (0.6)	0 (0.1)	3 (0.6)
IB Chemistry	97 (0.6)	0 (0.1)	3 (0.6)
IB Physics	97 (0.6)	0 (0.3)	2 (0.5)

[†] Schools indicating in Q25 that they do not offer Advanced Placement (AP) science courses and/or International Baccalaureate science courses are included in the “Not offered at all” category for each course of that type.

Table SPQ 28
High School Science Graduation Requirements

	Percent of Schools [†]
1 year	1 (1.0)
2 years	14 (1.6)
3 years	64 (2.5)
4 years	21 (2.4)

[†] Only schools that contain grade 12 are included in this analysis.

Table SPQ 29
Schools Counting Engineering Courses Towards Science Graduation Requirements

	Percent of Schools [†]
Elementary	— —
Middle	— —
High	38 (5.6)

[†] Only schools indicating in Q23 that they offer one or more Engineering courses and that contain grade 12 are included in this analysis.

Table SPQ 30
Years of Science Required for
Entry into the State University System

	Percent of Schools [†]
1 year	0 --- [‡]
2 years	23 (1.4)
3 years	73 (2.2)
4 years	4 (2.1)

[†] Only schools that contain grade 12 are included in this analysis.

[‡] No schools in the sample were in this category. Thus, it is not possible to calculate the standard error of this estimate.

Table SPQ 31
Median Amount Schools Spent per Pupil on
Consumable Supplies, Equipment, and Software for Science

	Median Amount		
	Elementary	Middle	High
Consumable science supplies (e.g., chemicals, living organisms, batteries)	\$0.95	\$1.45	\$3.44
Science equipment (non-consumable, non-perishable items such as microscopes, scales, etc., but not computers)	\$0.26	\$0.71	\$2.06
Software for science instruction	\$0.00	\$0.00	\$0.00

Table SPQ 32.1
Effect of Various Factors on Science Instruction in Elementary Schools

	Percent of Schools					
	Inhibits Effective Instruction		Neutral or Mixed		Promotes Effective Instruction	N/A or Don't Know
	1	2	3	4	5	Know
District/Diocese science professional development policies and practices [†]	4 (1.1)	7 (1.6)	28 (2.9)	17 (2.2)	27 (2.7)	16 (2.5)
Time provided for teacher professional development in science	11 (2.2)	15 (2.5)	26 (2.5)	15 (2.0)	22 (2.4)	10 (2.0)
Importance that the school places on science	6 (1.4)	13 (2.1)	21 (2.4)	24 (2.6)	33 (2.8)	3 (1.3)
Public attitudes toward science instruction	3 (1.3)	6 (1.3)	34 (2.9)	23 (2.4)	24 (2.8)	10 (1.8)
Conflict between efforts to improve science instruction and other school and/or district/diocese initiatives	12 (1.8)	17 (2.1)	36 (3.0)	13 (2.5)	9 (2.1)	14 (2.2)
How science instructional resources are managed (e.g., distributing and refurbishing materials)	9 (1.7)	12 (2.1)	24 (2.8)	21 (2.7)	27 (2.8)	8 (1.7)

[†] Item presented only to public and Catholic schools.

Table SPQ 32.2
Effect of Various Factors on Science Instruction in Middle Schools

	Percent of Schools					
	Inhibits Effective Instruction		Neutral or Mixed		Promotes Effective Instruction	N/A or Don't Know
	1	2	3	4	5	
District/Diocese science professional development policies and practices [†]	5 (1.3)	9 (2.0)	28 (3.2)	15 (2.0)	27 (3.2)	16 (2.7)
Time provided for teacher professional development in science	13 (2.7)	16 (2.4)	23 (2.6)	16 (2.1)	24 (2.8)	8 (1.8)
Importance that the school places on science	7 (1.7)	12 (2.7)	18 (2.4)	25 (3.5)	36 (3.5)	2 (0.8)
Public attitudes toward science instruction	4 (1.6)	7 (1.8)	29 (2.7)	24 (2.8)	28 (3.3)	7 (1.5)
Conflict between efforts to improve science instruction and other school and/or district/diocese initiatives	8 (1.4)	19 (2.4)	35 (3.1)	13 (2.2)	8 (2.0)	17 (2.9)
How science instructional resources are managed (e.g., distributing and refurbishing materials)	10 (2.0)	11 (2.1)	24 (2.7)	25 (3.0)	22 (2.7)	8 (2.0)

[†] Item presented only to public and Catholic schools.

Table SPQ 32.3
Effect of Various Factors on Science Instruction in High Schools

	Percent of Schools					
	Inhibits Effective Instruction		Neutral or Mixed		Promotes Effective Instruction	N/A or Don't Know
	1	2	3	4	5	
District/Diocese science professional development policies and practices [†]	5 (1.0)	9 (1.8)	33 (2.7)	15 (1.8)	28 (3.3)	11 (1.9)
Time provided for teacher professional development in science	9 (2.6)	14 (1.6)	26 (3.1)	21 (2.7)	24 (2.9)	6 (1.8)
Importance that the school places on science	2 (0.6)	11 (2.8)	17 (2.1)	27 (3.2)	41 (3.1)	2 (1.1)
Public attitudes toward science instruction	2 (0.9)	8 (1.6)	28 (3.3)	30 (3.2)	27 (3.1)	4 (1.3)
Conflict between efforts to improve science instruction and other school and/or district/diocese initiatives	7 (1.7)	16 (2.9)	32 (3.0)	22 (3.3)	10 (2.2)	12 (2.0)
How science instructional resources are managed (e.g., distributing and refurbishing materials)	6 (1.4)	12 (3.0)	23 (2.6)	27 (3.6)	28 (3.0)	4 (1.7)

[†] Item presented only to public and Catholic schools.

Table SPQ 33.1
Science Program Representatives' Opinions about the Extent to
Which Various Factors Are Problematic for Science Instruction in Elementary Schools

	Percent of Schools		
	Not a Significant Problem	Somewhat of a Problem	Serious Problem
Lack of science facilities (e.g., lab tables, electric outlets, faucets and sinks in classrooms)	34 (3.1)	39 (3.3)	27 (3.3)
Inadequate funds for purchasing science equipment and supplies	28 (2.7)	42 (3.3)	30 (3.0)
Inadequate supply of science textbooks/modules	60 (3.2)	26 (3.2)	14 (2.0)
Inadequate materials for individualizing science instruction	37 (3.0)	43 (3.3)	21 (2.6)
Low student interest in science	65 (3.2)	30 (3.1)	5 (1.4)
Low student reading abilities	43 (3.2)	41 (3.1)	16 (2.2)
Lack of teacher interest in science	61 (3.0)	35 (2.9)	4 (1.0)
Inadequate teacher preparation to teach science	48 (3.0)	41 (3.0)	11 (1.8)
Insufficient time to teach science	32 (2.9)	41 (3.5)	27 (2.6)
Lack of opportunities for science teachers to share ideas	34 (3.2)	46 (3.2)	20 (2.5)
Inadequate science-related professional development opportunities	28 (2.9)	50 (3.0)	23 (2.3)
Interruptions for announcements, assemblies, and other school activities	62 (2.5)	29 (2.7)	8 (1.5)
Large class sizes	58 (2.9)	29 (2.5)	13 (2.0)
High student absenteeism	72 (2.7)	21 (2.6)	8 (1.7)
Inappropriate student behavior	63 (2.7)	28 (2.3)	9 (1.6)
Lack of parental support for science education	62 (3.0)	27 (2.6)	10 (1.8)
Community resistance to the teaching of "controversial" issues in science (e.g., evolution, climate change)	78 (3.1)	18 (2.8)	3 (1.2)

**Table SPQ 33.2
Science Program Representatives' Opinions about the Extent to
Which Various Factors Are Problematic for Science Instruction in Middle Schools**

	Percent of Schools		
	Not a Significant Problem	Somewhat of a Problem	Serious Problem
Lack of science facilities (e.g., lab tables, electric outlets, faucets and sinks in classrooms)	36 (3.3)	34 (3.2)	30 (4.0)
Inadequate funds for purchasing science equipment and supplies	25 (2.5)	43 (3.7)	32 (3.4)
Inadequate supply of science textbooks/modules	57 (3.5)	30 (3.0)	13 (2.3)
Inadequate materials for individualizing science instruction	34 (2.9)	46 (3.1)	20 (3.0)
Low student interest in science	49 (3.6)	39 (3.5)	11 (1.9)
Low student reading abilities	35 (3.4)	45 (3.3)	19 (2.5)
Lack of teacher interest in science	79 (3.3)	18 (3.2)	3 (1.0)
Inadequate teacher preparation to teach science	64 (3.7)	26 (3.5)	9 (2.1)
Insufficient time to teach science	49 (3.3)	34 (3.5)	17 (2.4)
Lack of opportunities for science teachers to share ideas	42 (3.8)	42 (3.7)	16 (2.5)
Inadequate science-related professional development opportunities	35 (3.0)	45 (2.8)	20 (2.6)
Interruptions for announcements, assemblies, and other school activities	59 (2.9)	31 (2.9)	10 (1.6)
Large class sizes	58 (3.1)	26 (2.6)	15 (1.9)
High student absenteeism	62 (2.8)	25 (2.5)	13 (2.3)
Inappropriate student behavior	59 (3.0)	26 (2.3)	15 (2.1)
Lack of parental support for science education	56 (3.3)	30 (2.9)	14 (2.2)
Community resistance to the teaching of "controversial" issues in science (e.g., evolution, climate change)	72 (3.9)	22 (3.4)	6 (1.8)

Table SPQ 33.3
Science Program Representatives' Opinions about the Extent to
Which Various Factors Are Problematic for Science Instruction in High Schools

	Percent of Schools		
	Not a Significant Problem	Somewhat of a Problem	Serious Problem
Lack of science facilities (e.g., lab tables, electric outlets, faucets and sinks in classrooms)	47 (3.5)	34 (3.3)	19 (4.3)
Inadequate funds for purchasing science equipment and supplies	33 (2.6)	40 (3.0)	28 (3.9)
Inadequate supply of science textbooks/modules	56 (3.9)	31 (3.8)	13 (1.6)
Inadequate materials for individualizing science instruction	38 (3.0)	45 (4.0)	17 (3.1)
Low student interest in science	43 (3.6)	44 (3.5)	13 (1.5)
Low student reading abilities	37 (3.8)	43 (3.2)	19 (2.0)
Lack of teacher interest in science	88 (2.6)	9 (2.5)	2 (0.9)
Inadequate teacher preparation to teach science	77 (3.6)	20 (3.5)	3 (0.9)
Insufficient time to teach science	52 (3.7)	38 (3.5)	10 (1.7)
Lack of opportunities for science teachers to share ideas	44 (3.4)	43 (3.5)	13 (2.3)
Inadequate science-related professional development opportunities	38 (3.6)	47 (4.0)	14 (2.1)
Interruptions for announcements, assemblies, and other school activities	48 (3.6)	41 (3.6)	11 (1.6)
Large class sizes	58 (2.7)	26 (2.1)	16 (1.9)
High student absenteeism	52 (3.3)	35 (3.0)	13 (1.7)
Inappropriate student behavior	59 (2.8)	33 (2.6)	8 (1.4)
Lack of parental support for science education	56 (3.1)	34 (2.8)	9 (1.3)
Community resistance to the teaching of "controversial" issues in science (e.g., evolution, climate change)	77 (2.4)	21 (2.4)	2 (0.5)

There is no table for SPQ 34.

There is no table for SPQ 35.

Table SPQ 36
Difficulty Filling Science Teacher Vacancies

	Percent of Schools	
	Middle	High
There were no vacancies for science teachers	63 (3.6)	48 (3.8)
Easy	14 (1.8)	17 (2.6)
Somewhat difficult	13 (1.6)	19 (2.1)
Very difficult	7 (1.8)	12 (2.2)
Could not fill the vacancies	3 (1.7)	4 (2.5)

Table SPQ 37
Schools Indicating Greater Difficulty Filling Science
Teacher Vacancies in Some Disciplines than in Others

	Percent of Schools [†]
Elementary	— —
Middle	— —
High	39 (4.3)

[†] Only high schools indicating in Q36 that filling vacancies was “Somewhat difficult,” “Very difficult,” or that they “Could not fill the vacancies” are included in this analysis.

Table SPQ 38
Difficulty Filling Science Teacher Vacancies in Various Disciplines in High Schools

	Percent of Schools [†]				
	There were no vacancies for this discipline	Easy	Somewhat difficult	Very difficult	Could not fill the vacancies
Biology/Life science	46 (5.7)	21 (4.4)	19 (3.7)	14 (4.8)	1 (1.0)
Chemistry	30 (3.9)	8 (3.8)	22 (3.7)	37 (5.9)	2 (1.1)
Earth/Space science	60 (5.1)	5 (1.7)	17 (3.8)	17 (5.6)	1 (1.0)
Physics	32 (5.3)	1 (0.4)	17 (3.6)	43 (5.3)	7 (3.3)
A combination of science disciplines	44 (4.9)	2 (1.3)	24 (4.6)	26 (4.4)	3 (1.6)

[†] Only high schools indicating in Q36 that filling vacancies was “Somewhat difficult,” “Very difficult,” or that they “Could not fill the vacancies” and indicating in Q37 that there were particular science disciplines for which it was more difficult to fill vacancies than others are included in this analysis.

Table SPQ 39
Science Professional Development
Workshops Offered Locally in the Last Three Years

	Percent of Schools
Elementary	48 (2.9)
Middle	42 (3.6)
High	36 (4.0)

Table SPQ 40.1
Elementary Schools with Locally Offered Science Professional Development
Workshops in the Last Three Years with a Focus in Each of a Number of Areas

	Percent of Schools [†]				
	Not at All		Somewhat		To a Great Extent
	1	2	3	4	5
Science content	4 (1.6)	6 (2.6)	36 (4.5)	29 (3.6)	25 (4.1)
State science standards	4 (1.5)	7 (2.2)	28 (3.7)	33 (4.1)	28 (4.3)
How to use particular science instructional materials (e.g., textbooks or modules)	12 (3.0)	9 (2.2)	22 (3.1)	33 (4.2)	24 (3.7)
How students think about various science ideas	12 (2.6)	15 (2.7)	40 (4.0)	22 (3.0)	11 (2.5)
How to monitor student understanding during science instruction	14 (2.8)	13 (2.6)	42 (4.1)	20 (3.1)	11 (2.7)
How to adapt science instruction to address student misconceptions	16 (3.0)	19 (3.4)	34 (4.0)	20 (3.5)	11 (2.3)
How to use technology in science instruction	13 (2.5)	15 (3.2)	34 (4.5)	26 (3.3)	11 (2.3)
How to use investigation-oriented science teaching strategies	9 (2.4)	11 (2.3)	25 (3.9)	29 (4.0)	26 (3.4)
How to teach science to students who are English language learners	34 (3.7)	19 (3.2)	28 (3.5)	14 (3.2)	5 (1.7)
How to provide alternative science learning experiences for students with special needs	34 (3.7)	26 (3.8)	30 (3.9)	4 (1.4)	6 (1.7)

[†] Only elementary schools indicating in Q39 that they and/or their district/diocese offered in-service workshops in the last three years are included in this analysis.

Table SPQ 40.2
Middle Schools with Locally Offered Science Professional Development
Workshops in the Last Three Years with a Focus in Each of a Number of Areas

	Percent of Schools [†]				
	Not at All		Somewhat		To a Great Extent
	1	2	3	4	5
Science content	7 (2.3)	7 (3.1)	35 (5.1)	24 (3.8)	27 (5.0)
State science standards	6 (2.1)	4 (1.3)	23 (3.9)	31 (4.6)	37 (5.4)
How to use particular science instructional materials (e.g., textbooks or modules)	17 (3.6)	8 (1.7)	22 (3.1)	31 (5.6)	21 (3.3)
How students think about various science ideas	14 (2.8)	11 (2.0)	43 (5.1)	19 (3.2)	13 (2.7)
How to monitor student understanding during science instruction	14 (3.0)	9 (1.6)	43 (5.4)	22 (3.6)	12 (2.9)
How to adapt science instruction to address student misconceptions	17 (3.0)	15 (3.7)	34 (4.7)	23 (3.4)	11 (2.7)
How to use technology in science instruction	9 (2.6)	13 (3.0)	35 (6.1)	25 (3.3)	17 (3.6)
How to use investigation-oriented science teaching strategies	13 (3.0)	8 (1.7)	28 (4.9)	30 (4.5)	22 (4.2)
How to teach science to students who are English language learners	37 (4.4)	16 (3.0)	30 (4.3)	13 (3.8)	5 (1.3)
How to provide alternative science learning experiences for students with special needs	31 (3.8)	23 (4.7)	34 (4.5)	5 (1.4)	6 (2.0)

[†] Only middle schools indicating in Q39 that they and/or their district/diocese offered in-service workshops in the last three years are included in this analysis.

Table SPQ 40.3
High Schools with Locally Offered Science Professional Development
Workshops in the Last Three Years with a Focus in Each of a Number of Areas

	Percent of Schools [†]				
	Not at All		Somewhat		To a Great Extent
	1	2	3	4	5
Science content	7 (1.8)	15 (6.2)	45 (6.6)	22 (3.2)	11 (2.5)
State science standards	5 (1.4)	5 (1.6)	24 (4.5)	35 (5.9)	31 (6.4)
How to use particular science instructional materials (e.g., textbooks or modules)	17 (4.2)	14 (2.9)	25 (3.4)	32 (7.6)	12 (2.9)
How students think about various science ideas	21 (3.6)	17 (2.8)	42 (6.9)	13 (2.4)	6 (1.7)
How to monitor student understanding during science instruction	17 (3.5)	14 (2.5)	42 (6.7)	21 (3.6)	6 (1.6)
How to adapt science instruction to address student misconceptions	23 (3.9)	22 (6.3)	32 (6.6)	15 (2.9)	8 (1.8)
How to use technology in science instruction	8 (2.7)	8 (1.7)	41 (7.0)	28 (4.1)	15 (3.0)
How to use investigation-oriented science teaching strategies	12 (2.3)	13 (3.0)	35 (7.1)	30 (6.5)	11 (2.1)
How to teach science to students who are English language learners	44 (5.9)	15 (2.5)	24 (6.1)	12 (6.3)	5 (1.3)
How to provide alternative science learning experiences for students with special needs	38 (5.4)	23 (6.0)	28 (6.5)	8 (2.1)	3 (1.2)

[†] Only high schools indicating in Q39 that they and/or their district/diocese offered in-service workshops in the last three years are included in this analysis.

Table SPQ 41
Science-Focused Teacher
Study Groups Offered at Schools in the Last Three Years

	Percent of Schools
Elementary	32 (3.0)
Middle	43 (3.7)
High	47 (4.4)

Table SPQ 42, 43, 44
Required Participation in
Science-Focused Teacher Study Groups

	Percent of Schools [†]
Elementary	62 (5.6)
Middle	76 (4.9)
High	80 (5.2)

[†] Only schools indicating in Q41 that they offered teacher study groups in the last three years are included in this analysis.

Table SPQ 45
Schedule for Science-Focused
Teacher Study Groups Specified by School

	Percent of Schools [†]
Elementary	53 (4.8)
Middle	61 (4.4)
High	68 (5.2)

[†] Only schools indicating in Q41 that they offered teacher study groups in the last three years are included in this analysis.

Table SPQ 46
Duration of Science-Focused Teacher Study Groups

	Percent of Schools [†]		
	Elementary	Middle	High
The entire school year	84 (4.6)	93 (2.0)	96 (1.3)
One semester	11 (3.9)	4 (1.4)	2 (1.0)
Less than one semester	4 (2.4)	3 (1.6)	2 (0.9)

[†] Only schools indicating in Q41 that they offered teacher study groups in the last three years and indicating in Q45 that they have a specified schedule for these teacher study groups are included in this analysis.

Table SPQ 47
Frequency of Science-Focused Teacher Study Groups

	Percent of Schools [†]		
	Elementary	Middle	High
Less than once a month	35 (7.5)	19 (4.1)	16 (3.1)
Once a month	38 (6.6)	35 (4.8)	28 (5.2)
Twice a month	7 (3.1)	13 (2.6)	15 (2.4)
More than twice a month	20 (6.5)	33 (5.0)	41 (6.7)

[†] Only elementary schools indicating in Q41 that they offered teacher study groups in the last three years and indicating in Q45 that they have a specified schedule for these teacher study groups are included in this analysis.

Table SPQ 48
Composition of Science-Focused Teacher Study Groups

	Percent of Schools [†]		
	Elementary	Middle	High
Organized by grade level	56 (5.4)	41 (4.3)	26 (4.7)
Include teachers from multiple grade levels	62 (5.4)	76 (3.6)	74 (3.5)
Limited to teachers from this school	58 (6.8)	64 (5.7)	72 (7.2)
Include teachers from other schools in the district/diocese [‡]	45 (6.6)	38 (5.2)	27 (6.0)
Include teachers from other schools outside of your district/diocese	12 (5.2)	12 (5.4)	9 (5.9)
Include school and/or district/diocese administrators	52 (6.1)	43 (5.1)	38 (5.1)
Include parents/guardians or other community members	0 (0.1)	0 (0.2)	1 (0.4)
Include higher education faculty or other "consultants"	13 (3.9)	10 (2.8)	4 (0.9)

[†] Only schools indicating in Q41 that they offered teacher study groups in the last three years are included in this analysis.

[‡] Item presented only to public and Catholic schools.

Table SPQ 49
Description of Activities in Typical Science-Focused Teacher Study Groups

	Percent of Schools [†]		
	Elementary	Middle	High
Teachers engage in science investigations	28 (5.1)	27 (4.6)	21 (5.2)
Teachers plan science lessons together	64 (5.3)	67 (4.9)	65 (5.9)
Teachers analyze student science assessment results	65 (5.7)	82 (3.5)	87 (2.4)
Teachers analyze classroom artifacts (e.g., student work samples)	34 (5.8)	40 (5.5)	40 (6.2)
Teachers analyze science instructional materials (e.g., textbooks or modules)	66 (5.6)	68 (4.6)	63 (4.6)

[†] Only schools indicating in Q41 that they offered teacher study groups in the last three years are included in this analysis.

Table SPQ 50.1
Elementary School Science-Focused Teacher Study Groups
in the Last Three Years with a Focus in Each of a Number of Areas

	Percent of Schools [†]				
	Not at All		Somewhat		To a Great Extent
	1	2	3	4	5
Science content	7 (3.3)	6 (2.4)	30 (5.7)	36 (6.1)	20 (4.1)
State science standards	6 (3.1)	3 (1.5)	23 (5.1)	37 (6.1)	32 (5.1)
How to use particular science instructional materials (e.g., textbooks or modules)	8 (2.5)	12 (4.1)	25 (5.0)	36 (4.8)	18 (3.8)
How students think about various science ideas	13 (4.1)	8 (2.4)	37 (5.9)	27 (5.5)	15 (3.7)
How to monitor student understanding during science instruction	13 (3.4)	5 (1.8)	32 (5.2)	36 (5.3)	14 (3.3)
How to adapt science instruction to address student misconceptions	14 (3.6)	7 (2.0)	38 (5.4)	25 (4.5)	16 (4.3)
How to use technology in science instruction	10 (2.8)	18 (5.0)	28 (4.9)	31 (5.7)	13 (3.0)
How to use investigation-oriented science teaching strategies	10 (2.7)	10 (3.8)	26 (5.4)	32 (6.1)	22 (4.8)
How to teach science to students who are English language learners	44 (5.7)	10 (2.7)	27 (5.5)	10 (4.1)	9 (2.9)
How to provide alternative science learning experiences for students with special needs	30 (4.6)	19 (3.8)	30 (5.9)	14 (4.9)	7 (2.5)

[†] Only elementary schools indicating in Q41 that they offered teacher study groups in the last three years are included in this analysis.

Table SPQ 50.2
Middle School Science-Focused Teacher Study Groups
in the Last Three Years with a Focus in Each of a Number of Areas

	Percent of Schools [†]				
	Not at All		Somewhat		To a Great Extent
	1	2	3	4	5
Science content	9 (3.2)	10 (2.7)	33 (4.8)	30 (5.3)	18 (3.4)
State science standards	7 (3.2)	3 (1.1)	22 (4.3)	36 (5.3)	33 (4.3)
How to use particular science instructional materials (e.g., textbooks or modules)	9 (2.4)	14 (4.0)	33 (4.7)	32 (5.1)	13 (2.6)
How students think about various science ideas	14 (4.5)	11 (2.2)	33 (5.2)	28 (5.0)	14 (3.8)
How to monitor student understanding during science instruction	14 (3.7)	8 (1.9)	29 (4.9)	33 (4.8)	16 (3.2)
How to adapt science instruction to address student misconceptions	13 (2.9)	11 (2.1)	32 (4.0)	28 (3.9)	16 (4.1)
How to use technology in science instruction	6 (1.6)	20 (4.8)	24 (4.5)	32 (4.7)	18 (3.8)
How to use investigation-oriented science teaching strategies	9 (2.4)	15 (3.9)	27 (4.8)	34 (5.4)	15 (3.7)
How to teach science to students who are English language learners	44 (4.8)	15 (2.5)	25 (4.9)	10 (3.5)	5 (1.8)
How to provide alternative science learning experiences for students with special needs	25 (4.1)	25 (3.8)	27 (5.1)	18 (4.0)	6 (1.8)

[†] Only middle schools indicating in Q41 that they offered teacher study groups in the last three years are included in this analysis.

Table SPQ 50.3
High School Science-Focused Teacher Study Groups
in the Last Three Years with a Focus in Each of a Number of Areas

	Percent of Schools [†]				
	Not at All		Somewhat		To a Great Extent
	1	2	3	4	5
Science content	13 (4.6)	9 (2.1)	42 (5.6)	26 (5.4)	11 (2.2)
State science standards	10 (4.7)	5 (1.4)	27 (5.5)	28 (3.7)	31 (5.2)
How to use particular science instructional materials (e.g., textbooks or modules)	12 (2.0)	11 (2.0)	42 (5.0)	28 (5.0)	8 (1.8)
How students think about various science ideas	13 (2.3)	13 (2.1)	33 (5.5)	34 (6.0)	7 (1.9)
How to monitor student understanding during science instruction	11 (2.2)	11 (1.9)	32 (5.8)	37 (5.8)	9 (2.1)
How to adapt science instruction to address student misconceptions	15 (3.5)	10 (1.6)	37 (4.8)	25 (3.3)	12 (5.1)
How to use technology in science instruction	9 (1.7)	15 (4.4)	29 (5.1)	35 (5.7)	12 (2.5)
How to use investigation-oriented science teaching strategies	11 (1.9)	11 (2.1)	37 (5.7)	27 (4.9)	14 (4.9)
How to teach science to students who are English language learners	50 (5.9)	18 (2.8)	19 (5.1)	10 (4.9)	3 (1.2)
How to provide alternative science learning experiences for students with special needs	31 (5.0)	23 (3.1)	26 (5.4)	16 (4.8)	4 (1.4)

[†] Only high schools indicating in Q41 that they offered teacher study groups in the last three years are included in this analysis.

**Table SPQ 51
Use of Designated Leaders for
Science-Focused Teacher Study Groups**

	Percent of Schools[†]
Elementary	52 (5.3)
Middle	54 (5.6)
High	57 (5.8)

[†] Only schools indicating in Q41 that they offered teacher study groups in the last three years are included in this analysis.

**Table SPQ 52
Origin of Designated Leaders of Science-Focused Teacher Study Groups**

	Percent of Schools[†]		
	Elementary	Middle	High
This school	82 (5.2)	86 (4.8)	95 (1.7)
Elsewhere in this district/diocese [‡]	36 (5.7)	26 (5.1)	12 (2.9)
College or University	1 (1.1)	0 (0.1)	1 (0.5)
External consultants	15 (5.3)	11 (4.1)	4 (1.3)
Other	1 (1.2)	2 (1.1)	3 (1.6)

[†] Only schools indicating in Q41 that they offered teacher study groups in the last three years and indicating in Q51 that they have designated leaders for these teacher study groups are included in this analysis.

[‡] Item presented only to public and Catholic schools.

**Table SPQ 53
How Schools Provide Time for Science Professional Development**

	Percent of Schools		
	Elementary	Middle	High
Early dismissal and/or late start for students	18 (2.1)	23 (2.5)	33 (3.1)
Professional days/teacher work days during the school year	40 (2.7)	50 (3.0)	54 (3.4)
Professional days/teacher work days before and/or after the school year	27 (2.4)	33 (3.0)	35 (2.3)
Common planning time for teachers	31 (2.9)	29 (3.0)	27 (3.3)
Substitute teachers to cover teachers' classes while they attend professional development	26 (2.8)	32 (2.8)	34 (2.5)
None of the above	31 (2.7)	21 (2.7)	16 (2.2)

**Table SPQ 54
Schools Providing
One-on-One Science-Focused Coaching**

	Percent of Schools
Elementary	17 (1.9)
Middle	17 (2.1)
High	22 (2.0)

Table SPQ 55, 56, 57
Schools Requiring Participation in
One-on-One Science-Focused Coaching

	Percent of Schools [†]
Elementary	18 (5.9)
Middle	27 (7.4)
High	21 (4.5)

[†] Only schools indicating in Q54 that teachers have access to one-on-one science-focused coaching are included in this analysis.

Table SPQ 58.1
Providers of One-on-One Science-Focused Coaching in Elementary Schools

	Percent of Schools [†]				
	Not at All		Somewhat		To a Great Extent
	1	2	3	4	5
The principal of your school	41 (6.2)	20 (5.5)	22 (4.8)	15 (6.5)	2 (1.6)
An assistant principal at your school	68 (6.2)	14 (4.8)	12 (3.1)	3 (1.9)	2 (1.7)
District/Diocese administrators including science supervisors/coordinators [‡]	53 (7.7)	9 (3.0)	16 (5.9)	7 (3.8)	15 (5.4)
Teachers/coaches who do not have classroom teaching responsibilities	54 (6.8)	4 (2.2)	15 (6.0)	12 (3.8)	15 (4.5)
Teachers/coaches who have part-time classroom teaching responsibilities	60 (6.5)	4 (1.9)	16 (6.0)	12 (4.3)	8 (3.1)
Teachers/coaches who have full-time classroom teaching responsibilities	41 (8.2)	4 (2.4)	29 (6.8)	14 (4.6)	12 (3.9)

[†] Only elementary schools indicating in Q54 that teachers have access to one-on-one science-focused coaching are included in this analysis.

[‡] Item presented only to public and Catholic schools.

Table SPQ 58.2
Providers of One-on-One Science-Focused Coaching in Middle Schools

	Percent of Schools [†]				
	Not at All		Somewhat		To a Great Extent
	1	2	3	4	5
The principal of your school	42 (6.4)	19 (6.0)	19 (3.9)	16 (7.9)	4 (1.4)
An assistant principal at your school	65 (6.1)	10 (4.2)	20 (4.3)	2 (0.8)	2 (1.1)
District/Diocese administrators including science supervisors/coordinators [‡]	49 (5.9)	13 (3.5)	20 (4.6)	10 (3.9)	8 (2.9)
Teachers/coaches who do not have classroom teaching responsibilities	61 (6.1)	5 (1.6)	14 (6.6)	8 (3.3)	13 (3.4)
Teachers/coaches who have part-time classroom teaching responsibilities	58 (6.5)	8 (2.6)	17 (6.5)	10 (5.2)	8 (3.4)
Teachers/coaches who have full-time classroom teaching responsibilities	39 (6.6)	5 (2.2)	19 (6.5)	14 (4.8)	23 (5.1)

[†] Only middle schools indicating in Q54 that teachers have access to one-on-one science-focused coaching are included in this analysis.

[‡] Item presented only to public and Catholic schools.

**Table SPQ 58.3
Providers of One-on-One Science-Focused Coaching in High Schools**

	Percent of Schools [†]				
	Not at All		Somewhat		To a Great Extent
	1	2	3	4	5
The principal of your school	56 (4.8)	17 (3.9)	19 (3.7)	4 (1.4)	3 (1.6)
An assistant principal at your school	64 (4.1)	9 (2.2)	18 (4.0)	6 (1.7)	3 (1.5)
District/Diocese administrators including science supervisors/coordinators [‡]	56 (4.1)	7 (1.9)	21 (4.3)	8 (2.2)	7 (1.9)
Teachers/coaches who do not have classroom teaching responsibilities	74 (3.7)	4 (1.3)	11 (2.6)	5 (2.0)	6 (1.6)
Teachers/coaches who have part-time classroom teaching responsibilities	69 (4.1)	5 (1.8)	9 (2.7)	7 (2.7)	9 (3.2)
Teachers/coaches who have full-time classroom teaching responsibilities	25 (4.1)	1 (0.6)	19 (3.5)	18 (3.1)	37 (5.9)

[†] Only high schools indicating in Q54 that teachers have access to one-on-one science-focused coaching are included in this analysis.

[‡] Item presented only to public and Catholic schools.

