2018 NSSME+
Science Teacher Questionnaire

Teacher Background and Opinions

1. How many years have you taught prior to this school year: [Enter each response as a whole number (for example: 15).]

a.	any subject at the K–12 level?	
b.	science at the K–12 level?	
c.	at this school, any subject?	

2. At what grade levels do you currently teach science? [Select all that apply.]

□	K–5
□	6–8
□	9–12
□	I do not currently teach science.

3. ***[Presented to self-contained teachers only]***
Which best describes the science instruction provided to the entire class?

- Do not consider pull-out instruction that some students may receive for remediation or enrichment.
- Do not consider instruction provided to individual or small groups of students, for example by an English-language specialist, special educator, or teacher assistant.

○	This class receives science instruction only from you. ***[Presented only to teachers who answered in Q2 that they teach science]***
○	This class receives science instruction from you and other teachers (for example: a science specialist or a teacher you team with). ***[Presented only to teachers who answered in Q2 that they teach science]***
○	This class receives science instruction only from another teacher (for example: a science specialist or a teacher you team with). ***[Presented only to teachers who answered in Q2 that they do not currently teach science] [Teacher ineligible, exit survey]***
○	This class does not receive science instruction this year. ***[Presented only to teachers who answered in Q2 that they do not currently teach science] [Teacher ineligible, exit survey]***

4. Omitted – Used only for survey routing.

5. ***[Presented to self-contained teachers only]***
Which best describes your science teaching?

○	I teach science all or most days, every week of the year.
○	I teach science every week, but typically not every day of the week.
○	I teach science some weeks, but typically not every week. ***[Skip to Q7]***

6. ***[Presented to self-contained teachers only]***

In a typical week, how many days do you teach lessons on each of the following subjects and how many minutes per week are spent on each subject? [Enter each response as a whole number (for example: 5, 150).]

	NUMBER OF DAYS PER WEEK	TOTAL NUMBER OF MINUTES PER WEEK
a. Mathematics		
b. Science		
c. Social Studies		
d. Reading/Language Arts		

7. ***[Presented only to self-contained teachers who did not answer Q6]***

In a typical year, how many weeks do you teach lessons on each of the following subjects and how many minutes per week are spent on each subject? [Enter each response as a whole number (for example: 36, 150).]

	NUMBER OF WEEKS PER YEAR	AVERAGE NUMBER OF MINUTES PER WEEK WHEN TAUGHT
a. Mathematics		
b. Science		
c. Social Studies		
a. Reading/Language Arts		

8. ***[Presented to non-self-contained teachers only]***

In a typical week, how many different classes (sections) of each of the following are you currently teaching? [Select one on each row.]

- If you meet with the *same class of students* multiple times per week, count that class only once.
- If you teach the *same science or engineering* course to multiple classes of students, count each class separately.

	0	1	2	3	4	5	6	7	8	9	10
Science (may include some engineering content)		○	○	○	○	○	○	○	○	○	○
Engineering	○	○	○	○	○	○	○	○	○	○	○

9. ***[Presented to non-self-contained teachers only]***

For each science class you currently teach, select the course type and enter the number of students enrolled. Enter the classes in the order that you teach them. For teachers on an alternating day block schedule, please order your classes starting with the first class you teach this week. Select one course type on each row and enter the number of students as a whole number (for example: 25).]

CLASS	COURSE TYPE	NUMBER OF STUDENTS ENROLLED
Your 1st science class:		
Your 2nd science class:		
…		
Your 10th science class:		

COURSE TYPE LIST	
1	Science (Grades K–5)
2	Life Science (Grades 6–8)
3	Earth/Space Science (Grades 6–8)
4	Physical Science (Grades 6–8)
5	General or Integrated Science (Grades 6–8)
6	Multi-discipline science courses (for example: General Science, Integrated Science, Physical Science) (Grades 9–12)
7	Earth/Space Science (Grades 9–12)
8	Life Science/Biology (Grades 9–12)
9	Environmental Science/Ecology (Grades 9–12)
10	Chemistry (Grades 9–12)
11	Physics (Grades 9–12)

10. ***[Presented to non-self-contained grades 9–12 teachers only]***

Use the descriptions below to select the level that best describes the content addressed in each grades 9–12 science class you teach. [Select one on each row.]

LEVEL	DESCRIPTION
Non-college Prep	A course that does not count towards the entrance requirements of a 4-year college. For example: Life Science.
1st Year College Prep, Including Honors	The first course in a discipline that counts towards the entrance requirements of a 4-year college. For example: Biology, Chemistry I.
2nd Year Advanced	A course typically taken after a 1st year college prep course. For example: Anatomy and Physiology, Advanced Chemistry, Physics II. Include Advanced Placement, International Baccalaureate, and concurrent college and high school credit/dual enrollment.

CLASS	COURSE TYPE	NON-COLLEGE PREP	1ST YEAR COLLEGE PREP, INCLUDING HONORS	2ND YEAR ADVANCED
Your 1st science class:	*[course type(s) teacher selected in Q9]*	○	○	○
Your 2nd science class:		○	○	○
…				
Your 10th science class:		○	○	○

11. ***[Presented to non-self-contained teachers only]***
Later in this questionnaire, we will ask you questions about your *[[xth]]* science class, which you indicated was *[[level indicated in Q10]] [[course type indicated in Q9]]*. What is your school's title for this course? _____

12. Have you been awarded one or more bachelor's and/or graduate degrees in the following fields? (With regard to bachelor's degrees, count only areas in which you majored. Do not include endorsements or certificates.) [Select one on each row.]

		YES	NO
a.	Education (general or subject specific such as science education)	○	○
b.	Engineering	○	○
c.	Natural Sciences (for example: biology, chemistry, physics, Earth sciences)	○	○
d.	Other, including social sciences; please specify _____	○	○

13. ***[Presented only to teachers that selected "Yes" for Q12a]***
What type of education degree do you have? (With regard to bachelor's degrees, count only areas in which you majored.) [Select all that apply.]

□	Elementary Education
□	Mathematics Education
□	Science Education
□	Other education, please specify. _____

14. ***[Presented only to teachers that selected "Yes" for Q12b]***
What type of engineering degree do you have? (With regard to bachelor's degrees, count only areas in which you majored.) [Select all that apply.]

□	Aerospace/Aeronautical/Astronautical Engineering
□	Bioengineering/Biomedical Engineering
□	Chemical Engineering
□	Civil Engineering
□	Computer Engineering
□	Electrical/Electronics Engineering
□	Environmental Engineering
□	Industrial/Manufacturing Engineering
□	Mechanical Engineering
□	Other engineering, please specify _____

15. ***[Presented only to teachers that selected "Yes" for Q12c]***
What type of natural science degree do you have? (With regard to bachelor's degrees, count only areas in which you majored.) [Select all that apply.]

□	Biology/Life Science
□	Chemistry
□	Earth/Space Science
□	Environmental Science/Ecology
□	Physics
□	Other natural science, please specify _____

16. Did you complete any of the following types of biology/life science courses at the undergraduate or graduate level? [Select one on each row.]

		YES	NO
a.	General/introductory biology/life science courses (for example: Biology I, Introduction to Biology, Biology for Teachers)	○	○
b.	Biology/life science courses beyond the general/introductory level	○	○
c.	Biology/life science teaching methods courses	○	○

17. ***[Presented only to teachers that selected "Yes" for Q16b]***
Please indicate which of the following biology/life science courses you completed (beyond a general/introductory course) at the undergraduate or graduate level. [Select all that apply.]

□	Anatomy/Physiology
□	Biochemistry
□	Botany
□	Cell Biology
□	Ecology
□	Evolution
□	Genetics
□	Microbiology
□	Zoology
□	Other biology/life science beyond the general/introductory level

18. Did you complete any of the following types of chemistry courses at the undergraduate or graduate level? [Select one on each row.]

		YES	NO
a.	General/introductory chemistry courses (for example: Chemistry I, Introduction to Chemistry)	○	○
b.	Chemistry courses beyond the general/introductory level	○	○
c.	Chemistry teaching methods courses	○	○

19. ***[Presented only to teachers that selected "Yes" for Q18b]***
Please indicate which of the following chemistry courses you completed (beyond a general/introductory course) at the undergraduate or graduate level. [Select all that apply.]

□	Analytic Chemistry
□	Biochemistry
□	Inorganic Chemistry
□	Organic Chemistry
□	Physical Chemistry
□	Quantum Chemistry
□	Other chemistry beyond the general/introductory level

20. Did you complete any of the following types of physics courses at the undergraduate or graduate level? [Select one on each row.]

		YES	NO
a.	General/introductory physics courses (for example: Physics I, Introduction to Physics)	○	○
b.	Physics courses beyond the general/introductory level	○	○
c.	Physics teaching methods courses	○	○

21. ***[Presented only to teachers that selected "Yes" for Q20b]***
Please indicate which of the following physics courses you completed (beyond a general/introductory course) at the undergraduate or graduate level. [Select all that apply.]

□	Astronomy/Astrophysics
□	Electricity and Magnetism
□	Heat and Thermodynamics
□	Mechanics
□	Modern or Quantum Physics
□	Nuclear Physics
□	Optics
□	Other physics beyond the general/introductory level

22. Did you complete any of the following types of Earth/space science courses at the undergraduate or graduate level? [Select one on each row.]

		YES	NO
a.	General/introductory Earth/space science courses (for example: Earth Science I, Introduction to Earth Science, Introductory Astronomy)	○	○
b.	Earth/space science courses beyond the general/introductory level	○	○
c.	Earth/space science teaching methods courses	○	○

23. ***[Presented only to teachers that selected "Yes" for Q22b]***
Please indicate which of the following Earth/space science courses you completed (beyond a general/introductory course) at the undergraduate or graduate level. [Select all that apply.]

□	Astronomy/Astrophysics
□	Geology
□	Meteorology
□	Oceanography
□	Physical Geography
□	Other Earth/space science beyond the general/introductory level

24. Did you complete any of the following types of environmental science courses at the undergraduate or graduate level? [Select one on each row.]

		YES	NO
a.	General/introductory environmental science courses (for example: Environmental Science I, Introduction to Environmental Science)	○	○
b.	Environmental science courses beyond the general/introductory level	○	○
c.	Environmental science teaching methods courses	○	○

25. ***[Presented only to teachers that selected "Yes" for Q24b]***
Please indicate which of the following environmental science courses you completed (beyond a general/introductory course) at the undergraduate or graduate level. [Select all that apply.]

□	Conservation Biology
□	Ecology
□	Forestry
□	Hydrology
□	Oceanography
□	Toxicology
□	Other environmental science beyond the general/introductory level

26. ***[Presented only to teachers who did not select Q12b]***
Did you complete one or more engineering courses at the undergraduate or graduate level?

○	Yes
○	No

27. Which of the following best describes the program you completed to earn your teaching credential (sometimes called certification or license)?

○	An undergraduate program leading to a bachelor's degree and a teaching credential
○	A post-baccalaureate credentialing program (no master's degree awarded)
○	A master's program that also led to a teaching credential
○	I have not completed a program to earn a teaching credential. ***[Skip to Q29]***

28. ***[Presented only to high school teachers]***

In which of the following areas are you certified (have a credential, endorsement, or license) to teach at the high school level? [Select all that apply.]

□	Biology/life science
□	Chemistry
□	Earth/space science
□	Ecology/environmental science
□	Engineering
□	Physics

29. After completing your undergraduate degree and prior to becoming a teacher, did you have a full-time job in a science- or engineering-related field?

○	Yes
○	No

Professional Development

The questions in this section ask about your participation in professional development focused on science/engineering or science/engineering teaching. When answering these questions, please include:

- face-to-face and/or online courses;
- professional meetings/conferences;
- workshops;
- professional learning communities/lesson studies/teacher study groups; and
- coaching and mentoring.

Do not include:

- courses you took prior to becoming a teacher; and
- time spent providing professional development (including coaching and mentoring) for other teachers.

30. When did you **last participate** in professional development focused on science/engineering or science/engineering teaching?

○	In the last 12 months
○	1–3 years ago
○	4–6 years ago
○	7–10 years ago
○	More than 10 years ago
○	Never

} *[Skip to Q35]*

31. In the last 3 years, which of the following types of professional development related to science/engineering or science/engineering teaching have you had? [Select one on each row.]

		YES	NO
a.	I attended a professional development program/workshop.	○	○
b.	I attended a national, state, or regional science teacher association meeting.	○	○
c.	I completed an online course/webinar.	○	○
d.	I participated in a professional learning community/lesson study/teacher study group	○	○
e.	I received assistance or feedback from a formally designated coach/mentor.	○	○
f.	I took a formal course for college credit.	○	○

32. What is the **total** amount of time you have spent on professional development related to science/engineering or science/engineering teaching **in the last 3 years**?

○	Less than 6 hours
○	6–15 hours
○	16–35 hours
○	36–80 hours
○	More than 80 hours

33. Considering all of your science- and engineering-related professional development **in the last 3 years**, to what extent does each of the following describe your experiences? [Select one on each row.]

		NOT AT ALL		SOMEWHAT		TO A GREAT EXTENT
a.	I had opportunities to engage in science investigations/engineering design challenges.	①	②	③	④	⑤
b.	I had opportunities to experience lessons, as my students would, from the textbook/modules I use in my classroom.	①	②	③	④	⑤
c.	I had opportunities to examine classroom artifacts (for example: student work samples, videos of classroom instruction).	①	②	③	④	⑤
d.	I had opportunities to rehearse instructional practices during the professional development (meaning: try out, receive feedback, and reflect on those practices).	①	②	③	④	⑤
e.	I had opportunities to apply what I learned to my classroom and then come back and talk about it as part of the professional development.	①	②	③	④	⑤
f.	I worked closely with other teachers from my school.	①	②	③	④	⑤
g.	I worked closely with other teachers who taught the same grade and/or subject whether or not they were from my school.	①	②	③	④	⑤

34. Thinking about all of your science- and engineering-related professional development **in the last 3 years**, to what extent was each of the following emphasized? [Select one on each row.]

		NOT AT ALL		SOMEWHAT		TO A GREAT EXTENT
a.	Deepening your own science content knowledge	①	②	③	④	⑤
b.	Deepening your understanding of how science is done (for example: developing scientific questions, developing and using models, engaging in argumentation)	①	②	③	④	⑤
c.	Deepening your understanding of how engineering is done (for example: identifying criteria and constraints, designing solutions, optimizing solutions)	①	②	③	④	⑤
d.	Implementing the science textbook/modules to be used in your classroom	①	②	③	④	⑤
e.	Learning about difficulties that students may have with particular science ideas	①	②	③	④	⑤
f.	Finding out what students think or already know prior to instruction on a topic	①	②	③	④	⑤
g.	Monitoring student understanding during science instruction	①	②	③	④	⑤
h.	Differentiating science instruction to meet the needs of diverse learners	①	②	③	④	⑤
i.	Incorporating students' cultural backgrounds into science instruction	①	②	③	④	⑤
j.	Learning how to provide science instruction that integrates engineering, mathematics, and/or computer science	①	②	③	④	⑤

Preparedness to Teach

35. ***[Presented only to grades K–5 teachers; sub-items e-h for self-contained teachers only]***

Many teachers feel better prepared to teach some subject areas than others. How well prepared do you feel to teach each of the following subjects **at the grade level(s) you teach**, whether or not they are currently included in your teaching responsibilities? [Select one on each row.]

	NOT ADEQUATELY PREPARED	SOMEWHAT PREPARED	FAIRLY WELL PREPARED	VERY WELL PREPARED
a. Life Science	①	②	③	④
b. Earth/Space Science	①	②	③	④
c. Physical Science	①	②	③	④
d. Engineering	①	②	③	④
e. Mathematics	①	②	③	④
f. Reading/Language Arts	①	②	③	④
g. Social Studies	①	②	③	④
h. Computer Science/Programming	①	②	③	④

36. ***[Subset of items related to topic of randomly selected class presented to non-self-contained teachers]***

Within science, many teachers feel better prepared to teach some topics than others. How well prepared do you feel to teach each of the following topics **at the grade level(s) you teach**, whether or not they are currently included in your teaching responsibilities? [Select one on each row.]

	NOT ADEQUATELY PREPARED	SOMEWHAT PREPARED	FAIRLY WELL PREPARED	VERY WELL PREPARED
a. Earth/Space Science				
i. Earth's features and physical processes	①	②	③	④
ii. The solar system and the universe	①	②	③	④
iii. Climate and weather	①	②	③	④
b. Biology/Life Science				
i. Cell biology	①	②	③	④
ii. Structures and functions of organisms	①	②	③	④
iii. Ecology/ecosystems	①	②	③	④
iv. Genetics	①	②	③	④
v. Evolution	①	②	③	④
c. Chemistry				
i. Atomic structure	①	②	③	④
ii. Chemical bonding, equations, nomenclature, and reactions	①	②	③	④
iii. Elements, compounds, and mixtures	①	②	③	④
iv. The Periodic Table	①	②	③	④
v. Properties of solutions	①	②	③	④
vi. States, classes, and properties of matter	①	②	③	④
d. Physics				
i. Forces and motion	①	②	③	④
ii. Energy transfers, transformations, and conservation	①	②	③	④
iii. Properties and behaviors of waves	①	②	③	④
iv. Electricity and magnetism	①	②	③	④
v. Modern physics (for example: special relativity)	①	②	③	④
e. Engineering				
i. Defining engineering problems	①	②	③	④
ii. Developing possible solutions	①	②	③	④
iii. Optimizing a design solution	①	②	③	④
f. Environmental and resource issues (for example: land and water use, energy resources and consumption, sources and impacts of pollution)	①	②	③	④

37. How well prepared do you feel to do each of the following in your science instruction? [Select one on each row.]

		NOT ADEQUATELY PREPARED	SOMEWHAT PREPARED	FAIRLY WELL PREPARED	VERY WELL PREPARED
a.	Develop students' conceptual understanding of the science ideas you teach	①	②	③	④
b.	Develop students' abilities to do science (for example: develop scientific questions; design and conduct investigations; analyze data; develop models, explanations, and scientific arguments)	①	②	③	④
c.	Develop students' awareness of STEM careers	①	②	③	④
d.	Provide science instruction that is based on students' ideas (whether completely correct or not) about the topics you teach	①	②	③	④
e.	Use formative assessment to monitor student learning	①	②	③	④
f.	Differentiate science instruction to meet the needs of diverse learners	①	②	③	④
g.	Incorporate students' cultural backgrounds into science instruction	①	②	③	④
h.	Encourage students' interest in science and/or engineering	①	②	③	④
i.	Encourage participation of all students in science and/or engineering	①	②	③	④

Opinions about Science Instruction

38. Please provide your opinion about each of the following statements. [Select one on each row.]

		STRONGLY DISAGREE	DISAGREE	NO OPINION	AGREE	STRONGLY AGREE
a.	Students learn science best in classes with students of similar abilities.	①	②	③	④	⑤
b.	It is better for science instruction to focus on ideas in depth, even if that means covering fewer topics.	①	②	③	④	⑤
c.	At the beginning of instruction on a science idea, students should be provided with definitions for new scientific vocabulary that will be used.	①	②	③	④	⑤
d.	Teachers should explain an idea to students before having them consider evidence that relates to the idea.	①	②	③	④	⑤
e.	Most class periods should provide opportunities for students to share their thinking and reasoning.	①	②	③	④	⑤
f.	Hands-on/laboratory activities should be used primarily to reinforce a science idea that the students have already learned.	①	②	③	④	⑤
g.	Teachers should ask students to support their conclusions about a science concept with evidence.	①	②	③	④	⑤
h.	Students learn best when instruction is connected to their everyday lives.	①	②	③	④	⑤
i.	Most class periods should provide opportunities for students to apply scientific ideas to real-world contexts.	①	②	③	④	⑤
j.	Students should learn science by doing science (for example: developing scientific questions; designing and conducting investigations; analyzing data; developing models, explanations, and scientific arguments).	①	②	③	④	⑤

Leadership Experiences

39. In the last 3 years have you… [Select one on each row.]

		YES	NO
a.	Served as a lead teacher or department chair in science?	○	○
b.	Served as a ***formal*** mentor or coach for a science teacher? (Do not include supervision of student teachers.)	○	○
c.	Supervised a student teacher in your classroom?	○	○
d.	Served on a school or district/diocese-wide science committee (for example: developing curriculum, developing pacing guides, selecting instructional materials)?	○	○
e.	Led or co-led a workshop or professional learning community (for example: teacher study group, lesson study) for other teachers focused on science or science teaching?	○	○
f.	Taught a science lesson for other teachers in your school to observe?	○	○
g.	Observed another teacher's science lesson for the purpose of giving him/her feedback?	○	○

Your Science Instruction

The rest of this questionnaire is about your science instruction in your *[[xth]]* science class, which you indicated is *[[level indicated in Q10]] [[type indicated in Q9]]* and is titled *[[title provided in Q11]]*. ***[Instructions presented to non-self-contained teachers only]***

40. ***[Presented to non-self-contained teachers only]***

On average, how many minutes per week does this class meet? [Enter your response as a whole number (for example: 300).] _____

The rest of this questionnaire is about your science instruction in this randomly selected class. ***[Instructions presented to self-contained teachers only]***

41. Enter the number of students for each grade represented in this class. [Enter each response as a whole number (for example: 15).]

Kindergarten	
1st grade	
2nd grade	
3rd grade	
4th grade	
5th grade	
6th grade	
7th grade	
8th grade	
9th grade	
10th grade	
11th grade	
12th grade	

42. For the *[sum of Q41]* students in this class, indicate the number of males and females in each of the following categories of race/ethnicity. [Enter each response as a whole number (for example: 15).]

		MALES	FEMALES
a.	American Indian or Alaskan Native		
b.	Asian		
c.	Black or African American		
d.	Hispanic or Latino		
e.	Native Hawaiian or Other Pacific Islander		
f.	White		
g.	Two or more races		

43. Which of the following best describes the prior science achievement levels of the students in this class relative to other students in this school?

○	Mostly low achievers
○	Mostly average achievers
○	Mostly high achievers
○	A mixture of levels

44. How much control do you have over each of the following for science instruction in this class? [Select one on each row.]

		NO CONTROL		MODERATE CONTROL		STRONG CONTROL
a.	Determining course goals and objectives	①	②	③	④	⑤
b.	Selecting curriculum materials (for example: textbooks/modules)	①	②	③	④	⑤
c.	Selecting content, topics, and skills to be taught	①	②	③	④	⑤
d.	Selecting the sequence in which topics are covered	①	②	③	④	⑤
e.	Determining the amount of instructional time to spend on each topic	①	②	③	④	⑤
f.	Selecting teaching techniques	①	②	③	④	⑤
g.	Determining the amount of homework to be assigned	①	②	③	④	⑤
h.	Choosing criteria for grading student performance	①	②	③	④	⑤

45. Think about your plans for this class for the entire course/year. By the end of the course/year, how much emphasis will each of the following student objectives receive? [Select one on each row.]

		NONE	MINIMAL EMPHASIS	MODERATE EMPHASIS	HEAVY EMPHASIS
a.	Learning science vocabulary and/or facts	①	②	③	④
b.	Understanding science concepts	①	②	③	④
c.	Learning about different fields of science/engineering	①	②	③	④
d.	Learning how to do science (develop scientific questions; design and conduct investigations; analyze data; develop models, explanations, and scientific arguments)	①	②	③	④
e.	Learning how to do engineering (for example: identify criteria and constraints, design solutions, optimize solutions)	①	②	③	④
f.	Learning about real-life applications of science/engineering	①	②	③	④
g.	Increasing students' interest in science/engineering	①	②	③	④
h.	Developing students' confidence that they can successfully pursue careers in science/engineering	①	②	③	④
i.	Learning test-taking skills/strategies	①	②	③	④

46. How often do **you** do each of the following in your science instruction in this class? [Select one on each row.]

		NEVER	RARELY (FOR EXAMPLE: A FEW TIMES A YEAR)	SOMETIMES (FOR EXAMPLE: ONCE OR TWICE A MONTH)	OFTEN (FOR EXAMPLE: ONCE OR TWICE A WEEK)	ALL OR ALMOST ALL SCIENCE LESSONS
a.	Explain science ideas to the whole class	①	②	③	④	⑤
b.	Engage the whole class in discussions	①	②	③	④	⑤
c.	Have students work in small groups	①	②	③	④	⑤
d.	Have students do hands-on/laboratory activities	①	②	③	④	⑤
e.	Use flipped instruction (have students watch lectures/demonstrations outside of class to prepare for in-class activities)	①	②	③	④	⑤
f.	Have students read from a textbook, module, or other material in class, either aloud or to themselves	①	②	③	④	⑤
g.	Engage the class in project-based learning (PBL) activities	①	②	③	④	⑤
h.	Have students write their reflections (for example: in their journals, on exit tickets) in class or for homework	①	②	③	④	⑤
i.	Focus on literacy skills (for example: informational reading or writing strategies)	①	②	③	④	⑤
j.	Have students practice for standardized tests	①	②	③	④	⑤

47. How often do you have **students** do each of the following during science instruction in this class? [Select one on each row.]

	NEVER	RARELY (FOR EXAMPLE: A FEW TIMES A YEAR)	SOMETIMES (FOR EXAMPLE: ONCE OR TWICE A MONTH)	OFTEN (FOR EXAMPLE: ONCE OR TWICE A WEEK)	ALL OR ALMOST ALL SCIENCE LESSONS
a. Determine whether or not a question is "scientific" (meaning it requires an answer supported by evidence gathered through systematic investigation)	①	②	③	④	⑤
b. Generate scientific questions based on their curiosity, prior knowledge, careful observation of real-world phenomena, scientific models, or preliminary data from an investigation	①	②	③	④	⑤
c. Determine what data would need to be collected in order to answer a scientific question (regardless of who generated the question)	①	②	③	④	⑤
d. Develop procedures for a scientific investigation to answer a scientific question (regardless of who generated the question)	①	②	③	④	⑤
e. Conduct a scientific investigation (regardless of who developed the procedures)	①	②	③	④	⑤
f. Organize and/or represent data using tables, charts, or graphs in order to facilitate analysis of the data	①	②	③	④	⑤
g. Compare data from multiple trials or across student groups for consistency in order to identify potential sources of error or inconsistencies in the data	①	②	③	④	⑤
h. Analyze data using grade-appropriate methods in order to identify patterns, trends, or relationships	①	②	③	④	⑤
i. Consider how missing data or measurement error can affect the interpretation of data	①	②	③	④	⑤
j. Make and support claims (proposed answers to scientific questions) with evidence	①	②	③	④	⑤
k. Use multiple sources of evidence (for example: different investigations, scientific literature) to develop an explanation	①	②	③	④	⑤
l. Revise their explanations (claims supported by evidence and reasoning) for real-world phenomena based on additional evidence	①	②	③	④	⑤
m. Develop scientific models—physical, graphical, or mathematical representations of real-world phenomena—based on data and reasoning	①	②	③	④	⑤
n. Identify the strengths and limitations of a scientific model—in terms of accuracy, clarity, generalizability, accessibility to others, strength of evidence supporting it—regardless of who created the model	①	②	③	④	⑤
o. Select and use grade-appropriate mathematical and/or statistical techniques to analyze data (for example: determining the best measure of central tendency, examining variation in data, or developing a fit line)	①	②	③	④	⑤
p. Use mathematical and/or computational models to generate data to support a scientific claim	①	②	③	④	⑤
q. Determine what details about an investigation (for example: its design, implementation, and results) might persuade a targeted audience about a scientific claim (regardless of who made the claim)	①	②	③	④	⑤

r.	Use data and reasoning to defend, verbally or in writing, a claim or refute alternative scientific claims about a real-world phenomenon (regardless of who made the claims)	①	②	③	④	⑤
s.	Evaluate the strengths and weaknesses of competing scientific explanations (claims supported by evidence) for a real-world phenomenon	①	②	③	④	⑤
t.	Construct a persuasive case, verbally or in writing, for the best scientific model or explanation for a real-world phenomenon	①	②	③	④	⑤
u.	Pose questions that elicit relevant details about the important aspects of a scientific argument (for example: the claims/models/explanations, research design, implementation, data analysis)	①	②	③	④	⑤
v.	Evaluate the credibility of scientific information—for example: its reliability, validity, consistency, logical coherence, lack of bias, or methodological strengths and weaknesses (regardless of whether it is from their own or others' work)	①	②	③	④	⑤
w.	Summarize patterns, similarities, and differences in scientific information obtained from multiple sources (regardless of whether it is from their own or others' work)	①	②	③	④	⑤

48. Thinking about your instruction in this class over the entire year, about how often do you incorporate engineering into your science instruction?

○	Never
○	Rarely (for example: A few times per year)
○	Sometimes (for example: Once or twice a month)
○	Often (for example: Once or twice a week)
○	All or almost all science lessons

49. Thinking about your instruction in this class over the entire year, about how often do you have students use coding to develop or revise computer programs as part of your science instruction (for example: use Scratch or Python as part of doing science)?

○	Never
○	Rarely (for example: A few times per year)
○	Sometimes (for example: Once or twice a month)
○	Often (for example: Once or twice a week)
○	All or almost all science lessons

50. In a typical week, how much time outside of this class are students expected to spend on science assignments?

○	None
○	1–15 minutes per week
○	16–30 minutes per week
○	31–60 minutes per week
○	61–90 minutes per week
○	91–120 minutes per week
○	More than 2 hours per week

51. How often are students in this class required to take science tests that you did not choose to administer, for example state assessments or district benchmarks? Do not include Advanced Placement or International Baccalaureate exams or students retaking a test because of failure.

○	Never
○	Once a year
○	Twice a year
○	Three or four times a year
○	Five or more times a year

52. Please indicate the availability of each of the following for your science instruction in this class. [Select one on each row.]

		LOCATED IN YOUR CLASSROOM	AVAILABLE IN ANOTHER ROOM	NOT AVAILABLE
a.	Lab tables	○	○	○
b.	Electric outlets	○	○	○
c.	Faucets and sinks	○	○	○
d.	Gas for burners *[Grades 9-12 only]*	○	○	○
e.	Fume hoods *[Grades 9–12 only]*	○	○	○

53. Please indicate the availability of each of the following for your science instruction in this class. [Select one on each row.]

		ALWAYS AVAILABLE IN YOUR CLASSROOM	AVAILABLE UPON REQUEST	NOT AVAILABLE
a.	Probes for collecting data (for example: motion sensors, temperature probes)	○	○	○
b.	Microscopes	○	○	○
c.	Balances (for example: pan, triple beam, digital scale)	○	○	○
d.	Projection devices (for example: Smartboard, document camera, LCD projector)	○	○	○

54. Science courses may benefit from the availability of particular resources. Considering what you have available, how adequate is each of the following for teaching this science class? [Select one on each row.]

	NOT ADEQUATE		SOMEWHAT ADEQUATE		ADEQUATE
a. Instructional technology (for example: calculators, computers, probes/sensors)	①	②	③	④	⑤
b. Consumable supplies (for example: chemicals, living organisms, batteries)	①	②	③	④	⑤
c. Equipment (for example: thermometers, magnifying glasses, microscopes, beakers, photogate timers, Bunsen burners)	①	②	③	④	⑤
d. Facilities (for example: lab tables, electric outlets, faucets and sinks)	①	②	③	④	⑤

This item asks about different types of instructional materials; please read the entire list of materials before answering

55. Thinking about your instruction in this class over the entire year, about how often is instruction based on materials from each of the following sources? [Select one on each row.]

	NEVER	RARELY (FOR EXAMPLE: A FEW TIMES A YEAR)	SOMETIMES (FOR EXAMPLE: ONCE OR TWICE A MONTH)	OFTEN (FOR EXAMPLE: ONCE OR TWICE A WEEK)	ALL OR ALMOST ALL SCIENCE LESSONS
a. Commercially published textbooks (printed or electronic), including the supplementary materials (for example: worksheets, laboratory handouts) that accompany the textbooks	①	②	③	④	⑤
b. Commercially published kits/modules (printed or electronic)	①	②	③	④	⑤
c. State, county, or district/diocese-developed units or lessons	①	②	③	④	⑤
d. Online units or courses that students work through at their own pace (for example: i-Ready, Edgenuity)	①	②	③	④	⑤
e. Lessons or resources from websites that have a subscription fee or per lesson cost (for example: BrainPOP, Discovery Ed, Teachers Pay Teachers)	①	②	③	④	⑤
f. Lessons or resources from websites that are free (for example: Khan Academy, PhET)	①	②	③	④	⑤
g. Units or lessons you created (either by yourself or with others)	①	②	③	④	⑤
h. Units or lessons you collected from any other source (for example: conferences, journals, colleagues, university or museum partners)	①	②	③	④	⑤

56. Does your school/district/diocese designate instructional materials (textbooks, kits, modules, units, or lessons) to be used in this class?

○	Yes
○	No *[Skip to Q58]*

57. Which of the following types of instructional materials does your school/district/diocese designate to be used in this class? [Select all that apply.]

□	Commercially published textbooks (printed or electronic), including the supplementary materials (for example: worksheets, laboratory handouts) that accompany the textbooks
□	Commercially published kits/modules (printed or online)
□	State, county, or district/diocese-developed instructional materials
□	Online units or courses that students work through at their own pace (for example: i-Ready, Edgenuity)
□	Lessons or resources from websites that have a subscription fee or per lesson cost (for example: BrainPOP, Discovery Ed, Teachers Pay Teachers)
□	Lessons or resources from websites that are free (for example: Khan Academy, PhET)

58. Omitted – Used only for survey routing.

59. ***[Presented only to teachers who selected "Sometimes" "Often" or "All" for Q55a, b, or d]*** [Version for teachers who indicate using a commercial textbook most often] Please indicate the title, author, most recent copyright year, and ISBN code of the commercially published textbook or kits/modules (printed or electronic) used most often by the students in this class.

- If you use multiple kits/modules, select one to enter the information for.
- The 10- or 13-character ISBN code can be found on the copyright page and/or the back cover of the textbook or kit/module.
- Do not include the dashes when entering the ISBN.
- Example ISBN:

[Version for teachers who indicate using an online course most often] Please indicate the title and URL of the online units or courses used most often by the students in this class.

Title:	
First Author: [for teachers who indicate using a commercial textbook most often]	
Year: [for teachers who indicate using a commercial textbook most often]	
ISBN: [for teachers who indicate using a commercial textbook most often]	
URL: [for teachers who indicate using an online program most often]	

60. Please rate how each of the following affects your science instruction in this class. [Select one on each row.]

		INHIBITS EFFECTIVE INSTRUCTION		NEUTRAL OR MIXED		PROMOTES EFFECTIVE INSTRUCTION	N/A
a.	Current state standards	①	②	③	④	⑤	○
b.	District/diocese and/or school pacing guides	①	②	③	④	⑤	○
c.	State/district/diocese testing/accountability policies ***[Not presented to non-Catholic private schools]***	①	②	③	④	⑤	○
d.	Textbook/module selection policies	①	②	③	④	⑤	○
e.	Teacher evaluation policies	①	②	③	④	⑤	○
f.	College entrance requirements **[Presented to grades 9–12 teachers only]**	①	②	③	④	⑤	○
g.	Students' prior knowledge and skills	①	②	③	④	⑤	○
h.	Students' motivation, interest, and effort in science	①	②	③	④	⑤	○
i.	Parent/guardian expectations and involvement	①	②	③	④	⑤	○
j.	Principal support	①	②	③	④	⑤	○
k.	Amount of time for you to plan, individually and with colleagues	①	②	③	④	⑤	○
l.	Amount of time available for your professional development	①	②	③	④	⑤	○
m.	Amount of instructional time devoted to science **[Presented to grades K–5 teachers only]**	①	②	③	④	⑤	○

Your Most Recently Completed Science Unit in this Class

The questions in this section are about the most recently completed science unit in this class which you indicated is *[level indicated in Q10]* *[type indicated in Q9]* and is titled *[title provided in Q11]*.

- Depending on the structure of your class and the instructional materials you use, a unit may range from a few to many class periods.
- Do not be concerned if this unit was not typical of your instruction.

61. Which one of the following best describes the content of this unit?

○	Earth/space science
○	Life science/biology
○	Environmental science/ecology
○	Chemistry
○	Physics
○	Engineering

62. ***[Presented only to teachers who selected "Sometimes" "Often" or "All" for Q55a, b, or c]***
Was this unit based primarily on a commercially published textbook/kit/module or state, county, or district/diocese-developed materials?

○	Yes
○	No ***[Skip to Q66]***

This next set of items is about the commercially published textbook/kit/module or state, county, or district/diocese-developed lessons you used in this unit.

63. Please indicate the extent to which you did each of the following while teaching this unit. [Select one on each row.]

		NOT AT ALL		SOMEWHAT		TO A GREAT EXTENT
a.	I used these materials to guide the structure and content emphasis of the unit.	①	②	③	④	⑤
b.	I picked what is important from these materials and skipped the rest.	①	②	③	④	⑤
c.	I incorporated activities (for example: problems, investigations, readings) from other sources to supplement what these materials were lacking.	①	②	③	④	⑤
d.	I modified activities from these materials.	①	②	③	④	⑤

64. ***[Presented only to teachers who did not select "Not at all" for Q63b]***
During this unit, when you skipped activities (for example: problems, investigations, readings) in these materials, how much was each of the following a factor in your decisions? [Select one on each row.]

		NOT A FACTOR	A MINOR FACTOR	A MAJOR FACTOR
a.	The science ideas addressed in the activities I skipped are not included in my pacing guide/standards.	①	②	③
b.	I did not have the materials needed to implement the activities I skipped.	①	②	③
c.	I did not have the knowledge needed to implement the activities I skipped			
d.	The activities I skipped were too difficult for my students.	①	②	③
e.	My students already knew the science ideas or were able to learn them without the activities I skipped.	①	②	③
f.	I have different activities for those science ideas that work better than the ones I skipped.	①	②	③
g.	I did not have enough instructional time for the activities I skipped.	①	②	③

65. ***[Presented only to teachers who did not select "Not at all" for Q63c]***
During this unit, when you supplemented these materials with additional activities, how much was each of the following a factor in your decisions? [Select one on each row.]

		NOT A FACTOR	A MINOR FACTOR	A MAJOR FACTOR
a.	My pacing guide indicated that I should use supplemental activities.	①	②	③
b.	Supplemental activities were needed to prepare students for standardized tests.	①	②	③
c.	Supplemental activities were needed to provide students with additional practice.	①	②	③
d.	Supplemental activities were needed so students at different levels of achievement could increase their understanding of the ideas targeted in each activity.	①	②	③
e.	I had additional activities that I liked.	①	②	③

66. ***[Presented only to teachers who did not select "Not at all" in Q63d]***
During this unit, when you modified activities from these materials, how much was each of the following a factor in your decisions? [Select one on each row.]

		NOT A FACTOR	A MINOR FACTOR	A MAJOR FACTOR
a.	I did not have the necessary materials/supplies for the original activities.	①	②	③
b.	The original activities were too difficult conceptually for my students.	①	②	③
c.	The original activities were too easy conceptually for my students.	①	②	③
d.	I did not have enough instructional time to implement the activities as designed.	①	②	③
e.	The original activities were too structured for my students.	①	②	③
f.	The original activities were not structured enough for my students.	①	②	③

67. How well prepared did you feel to do each of the following as part of your instruction on this particular unit? [Select one on each row.]

		NOT ADEQUATELY PREPARED	SOMEWHAT PREPARED	FAIRLY WELL PREPARED	VERY WELL PREPARED
a.	Anticipate difficulties that students may have with particular science ideas and procedures in this unit	①	②	③	④
b.	Find out what students thought or already knew about the key science ideas	①	②	③	④
c.	Implement the instructional materials (for example: textbook, module) to be used during this unit	①	②	③	④
d.	Monitor student understanding during this unit	①	②	③	④
e.	Assess student understanding at the conclusion of this unit	①	②	③	④

Your Most Recent Science Lesson in this Class

The next set of questions refer to the most recent science lesson in this class which you indicated is *[level indicated in Q10] [type indicated in Q9]* and is titled *[title provided in Q11]*, even if it included activities and/or interruptions that are not typical (for example: a test, students working on projects, a fire drill). If the lesson spanned multiple days, please answer for the most recent day.

68. How many minutes was that day's science lesson? Answer for the entire length of the class period, even if there were interruptions. [Enter your response as a non-zero whole number (for example: 50).] _____

69. Of these *[[answer to Q68]]* minutes, how many were spent on the following: [Enter each response as a whole number (for example: 15).]

a.	Non-instructional activities (for example: attendance taking, interruptions)	
b.	Whole class activities (for example: lectures, explanations, discussions)	
c.	Small group work	
d.	Students working individually (for example: reading textbooks, completing worksheets, taking a test or quiz)	

70. Which of the following activities took place during that day's science lesson? [Select all that apply.]

□	Teacher explaining a science idea to the whole class
□	Teacher conducting a demonstration while students watched
□	Whole class discussion
□	Students working in small groups
□	Students completing textbook/worksheet problems
□	Students doing hands-on/laboratory activities
□	Students reading about science
□	Students writing about science (do not include students taking notes)
□	Practicing for standardized tests
□	Test or quiz
□	None of the above

Demographic Information

71. Are you:

○	Female
○	Male
○	Other

72. Are you of Hispanic or Latino origin?

○	Yes
○	No

73. What is your race? [Select all that apply.]

□	American Indian or Alaskan Native
□	Asian
□	Black or African American
□	Native Hawaiian or Other Pacific Islander
□	White

74. In what year were you born? [Enter your response as a whole number (for example: 1969).]

_____

Thank you!