## 2018 NSSME+

## Science Program Questionnaire

This questionnaire asks a number of questions about teachers of science. 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 all or most of the day.

1. Which of the following describe your position? [Select all that apply.]

| $\square$ | Science department chair |
| :---: | :--- |
| $\square$ | Science lead teacher or coach |
| $\square$ | Science/STEM specialist |
| $\square$ | Regular classroom teacher |
| $\square$ | Principal |
| $\square$ | Assistant principal |
| $\square$ | 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 district/diocese/school science <br> specialist instead of their regular teacher. | $\circ$ | $\circ$ |
| b. | Students in self-contained classes receive science instruction from a district/diocese/school science <br> specialist in addition to their regular teacher. | $\circ$ | $\circ$ |
| c. | Students in self-contained classes receive science instruction on a regular basis from someone <br> outside of the school district/diocese (for example: museum staff). | $\circ$ | $\circ$ |
| d. | Students in self-contained classes pulled out for remedial instruction in science. | $\circ$ | $\circ$ |
| e. | Students in self-contained classes pulled out for enrichment in science. | $\circ$ | $\circ$ |
| f. | Students in self-contained classes pulled out from science instruction for additional instruction in other <br> content areas. | $\circ$ | $\circ$ |

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. | - | $\bigcirc$ |
| b. Students can go to a Career and Technical Education (CTE) Center for science and/or engineering instruction. | $\bigcirc$ | $\bigcirc$ |
| c. This school provides students access to virtual science and/or engineering courses offered by other schools/institutions (for example: online, videoconference). | $\bigcirc$ | $\bigcirc$ |
| d. This school provides its own science and/or engineering courses virtually (for example: online, videoconference). | $\bigcirc$ | $\bigcirc$ |
| e. Students can go to another K-12 school for science and/or engineering courses. | $\bigcirc$ | $\bigcirc$ |
| f. Students can go to a college or university for science and/or engineering courses. | $\bigcirc$ | $\bigcirc$ |

4. 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 | $\circ$ | $\circ$ |
| b. | Offers after-school help in science and/or engineering (for example: tutoring) | $\circ$ | $\circ$ |
| c. | Offers formal after-school programs for enrichment in science and/or engineering | $\circ$ | $\circ$ |
| d. | Offers one or more science clubs | $\circ$ | $\circ$ |
| e. | Offers one or more engineering clubs | $\circ$ | $\circ$ |
| f. | Participates in a local or regional science and/or engineering fair | $\circ$ | $\circ$ |
| g. | Has one or more teams participating in science competitions (for example: Science Olympiad) | $\circ$ | $\circ$ |
| h. | Has one or more teams participating in engineering competitions (for example: Robotics) | $\circ$ | $\circ$ |
| i. | Encourages students to participate in science and/or engineering summer programs or camps (for |  |  |
| example: offered by community colleges, universities, museums, or science centers) | $\circ$ | $\circ$ |  |
| j. | Coordinates visits to business, industry, and/or research sites related to science and/or engineering | $\circ$ | $\circ$ |
| k. | Coordinates meetings with adult mentors who work in science and/or engineering fields | $\circ$ | $\circ$ |
| I. | Coordinates internships in science and/or engineering fields | $\circ$ | $\circ$ |

## Your State Standards

5. 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 <br> DISAGREE | DISAGREE | NO <br> OPINION | AGREE | STRONGLY <br> AGREE |
| :--- | :--- | :---: | :---: | :---: | :---: | :---: |
| a.State science standards have been thoroughly <br> discussed by science teachers in this school. | (1) | (2) | (3) | (4) | (5) |  |
| b.There is a school-wide effort to align science <br> instruction with the state science standards. | (1) | (2) | (3) | (4) | (5) |  |
| c.Most science teachers in this school teach to <br> the state standards. | (1) | (2) | (3) | (4) | (5) |  |
| d.This school/district/diocese organizes science <br> professional development based on state <br> standards. | (1) | (2) | (3) | (4) | (5) |  |

## Science Courses Offered in Your School

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

What types of science courses are offered to students in the following grades? [Select one on each row.]

|  | SINGLE-DISCIPLINE SCIENCE <br> COURSES (FOR EXAMPLE: LIFE <br> SCIENCE) | MULTI-DISCIPLINE SCIENCE <br> COURSES (FOR EXAMPLE: <br> GENERAL SCIENCE, <br> INTEGRATED SCIENCE) | BOTH SINGLE-DISCIPLINE AND <br> MULTI-DISCIPLINE SCIENCE <br> COURSES |
| :--- | :---: | :---: | :---: |
| $6^{\text {th }}$ Grade | 0 | 0 | 0 |
| $7^{\text {th }}$ Grade | 0 | 0 | 0 |
| $8^{\text {th }}$ Grade | 0 | 0 | 0 |

7. [Presented only to schools that include any grades 9-12]

Approximately how many students in grades 9-12 in this school will not take a science course this year? [Enter your response as a whole number (for example: 1500).]
[Questions 8-13 presented only to schools that include any grades 9-12; schools that do not include any of these grades skip to Q14]
8. Is your school offering any courses in each of the following categories this year for students in grades $9-12$ ? [Select one on each row.]

|  | YES | NO |
| :---: | :---: | :---: |
| a. Coordinated/Integrated/Interdisciplinary science (including General Science and Physical Science) |  |  |
| i. Non-college prep | $\bigcirc$ | $\bigcirc$ |
| ii. College prep, including honors | $\bigcirc$ | - |
| b. Earth/Space Science |  |  |
| i. Non-college prep | $\bigcirc$ | $\bigcirc$ |
| ii. $1^{\text {st }}$ year college prep, including honors | $\bigcirc$ | $\bigcirc$ |
| iii. $2^{\text {nd }}$ year advanced, including concurrent college and high school credit/dual enrollment courses | $\bigcirc$ | - |
| c. Life Science/Biology |  |  |
| i. Non-college prep | $\bigcirc$ | $\bigcirc$ |
| ii. $1^{\text {st }}$ year college prep, including honors | $\bigcirc$ | $\bigcirc$ |
| iii. 2nd year advanced, including Advanced Placement, International Baccalaureate, and concurrent college and high school credit/dual enrollment courses | $\bigcirc$ | $\bigcirc$ |
| d. Environmental Science/Ecology |  |  |
| i. Non-college prep | $\bigcirc$ | $\bigcirc$ |
| ii. $1^{\text {st }}$ year college prep, including honors | $\bigcirc$ | $\bigcirc$ |
| iii. 2nd year advanced, including Advanced Placement, International Baccalaureate, and concurrent college and high school credit/dual enrollment courses | $\bigcirc$ | $\bigcirc$ |
| e. Chemistry |  |  |
| i. Non-college prep | $\bigcirc$ | $\bigcirc$ |
| ii. $1^{\text {st }}$ year college prep, including honors | $\bigcirc$ | $\bigcirc$ |
| iii. ${ }^{\text {nd }}$ year advanced, including Advanced Placement, International Baccalaureate, and concurrent college and high school credit/dual enrollment courses | $\bigcirc$ | $\bigcirc$ |
| f. Physics |  |  |
| i. Non-college prep | $\bigcirc$ | $\bigcirc$ |
| ii. $1^{\text {st }}$ year college prep, including honors | $\bigcirc$ | $\bigcirc$ |
| iii. 2nd year advanced, including Advanced Placement, International Baccalaureate, and concurrent college and high school credit/dual enrollment courses | - | $\bigcirc$ |
| g. Engineering-Include courses that address the nature of engineering, engineering design processes, technological systems, or technology and society. Do not include career-technical education (CTE) courses that cover such things as automotive repair, audio/video production, etc. |  |  |
| i. Non-college prep | $\bigcirc$ | $\bigcirc$ |
| ii. $1^{\text {st }}$ year college prep, including honors | $\bigcirc$ | $\bigcirc$ |
| iii. $2^{\text {nd }}$ year advanced, including concurrent college and high school credit/dual enrollment courses | $\bigcirc$ | $\bigcirc$ |

9. 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 | $\circ$ | $\circ$ |
| b. | International Baccalaureate (IB) science courses | $\circ$ | $\circ$ |
| c. | Concurrent college and high school credit/dual enrollment science courses | $\circ$ | $\circ$ |

10. [Presented only to schools that selected "Yes" for Q9c]

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

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

11. Which of the following science courses are available to students in this school, either on site, at other locations, or online? [Select one on each row.]

|  |  |  | [IF AVAILABLE] <br> WHERE OFFERED |  |  | [IF AVAILABLE] <br> WHEN OFERED |  |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: |

## Science Requirements

12. [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 |
| :---: | :---: | :---: | :---: |
| $\circ$ | $\circ$ | $\circ$ | 0 |

13. [Presented only to schools that include grade 12]

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

| $\circ$ | Yes |
| :--- | :--- |
| $\circ$ | No |

## Influences on Science Instruction

14. 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 without special characters such as dollar signs (for example: 1500).]
a. Consumable supplies for science instruction (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
15. Which of the following best describes how the science instructional materials used in your school are selected?
[Select one.]
```
    At the district/diocese level (for example: by a science supervisor or district/diocese-wide committee) [Not presented to
        non-Catholic private schools]
- At the school level (for example: by the principal, department chair, or teacher committee/grade-level team)
- By individual teachers
```

16. Please rate the effect of each of the following on the quality of science instruction in your school. [Select one on each row.]

17. 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 | $\begin{aligned} & \text { SOMEWHAT } \\ & \text { OF A } \\ & \text { PROBLEM } \end{aligned}$ | SERIOUS PROBLEM |
| :---: | :---: | :---: | :---: |
| a. Lack of science facilities (for example: lab tables, electric outlets, faucets and sinks in classrooms) | (1) | (2) | (3) |
| b. Inadequate funds for purchasing science equipment and supplies | (1) | (2) | (3) |
| c. Lack of science textbooks/modules | (1) | (2) | (3) |
| d. Poor quality science textbooks/modules | (1) | (2) | (3) |
| e. Inadequate materials for differentiating science instruction | (1) | (2) | (3) |
| f. Low student interest in science | (1) | (2) | (3) |
| g. Low student prior knowledge and skills | (1) | (2) | (3) |
| h. Lack of teacher interest in science | (1) | (2) | (3) |
| i. Inadequate teacher preparation to teach science | (1) | (2) | (3) |
| j. High teacher turnover | (1) | (2) | (3) |
| k. Insufficient instructional time to teach science | (1) | (2) | (3) |
| I. Inadequate science-related professional development opportunities | (1) | (2) | (3) |
| m. Large class sizes | (1) | (2) | (3) |
| n. High student absenteeism | (1) | (2) | (3) |
| o. Inappropriate student behavior | (1) | (2) | (3) |
| p. Lack of parent/guardian support and involvement | (1) | (2) | (3) |
| q. Community resistance to the teaching of "controversial" issues in science (for example: evolution, climate change) | (1) | (2) | (3) |

## Science Professional Development Opportunities

18. In the last 3 years, has your school and/or district/diocese offered workshops specifically focused on science/engineering or science/engineering teaching, possibly in conjunction with other organizations (for example: other schools/districts/dioceses, colleges or universities, museums, professional associations, commercial vendors)?
```
- Yes
- No [Skip to Q20]
```

19. Please indicate the extent to which workshops offered by your school and/or district/diocese in the last 3 years emphasized each of the following: [Select one on each row.]

|  |  | NOT <br> AT ALL |  | SOMEWHAT |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| a. | Deepening teachers' understanding of science concepts | (1) | (2) | (3) | (4) | (5) |
| b. | Deepening teachers' 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 teachers' understanding of how engineering is done (for example: identifying criteria and constraints, designing solutions, optimizing solutions) | (1) | (2) | (3) | (4) | (5) |
| d. | Deepening teachers' understanding of the state science standards | (1) | (2) | (3) | (4) | (5) |
| e. | Deepening teachers' understanding of how students think about various science ideas | (1) | (2) | (3) | (4) | (5) |
| f. | How to use particular science/engineering instructional materials (for example: textbooks or modules) | (1) | (2) | (3) | (4) | (5) |
|  | How to monitor student understanding during science instruction | (1) | (2) | (3) | (4) | (5) |
| h. | How to adapt science instruction to address student misconceptions | (1) | (2) | (3) | (4) | (5) |
| i. | How to use technology in science instruction | (1) | (2) | (3) | (4) | (5) |
| j. | How to develop students' confidence that they can successfully pursue careers in science/engineering | (1) | (2) | (3) | (4) | (5) |
| k. | How to incorporate real-world issues (for example: current events, community concerns) into science instruction | (1) | (2) | (3) | (4) | (5) |
|  | How to connect instruction to science/engineering career opportunities | (1) | (2) | (3) | (4) | (5) |
| m. | How to integrate science, engineering, mathematics, and/or computer science | (1) | (2) | (3) | (4) | (5) |
| n. | How to engage students in doing science (for example: developing scientific questions, developing and using models, engaging in argumentation) | (1) | (2) | (3) | (4) | (5) |
| 0. | How to engage students in doing engineering (for example: identifying criteria and constraints, designing solutions, optimizing solutions) | (1) | (2) | (3) | (4) | (5) |
|  | How to incorporate students' cultural backgrounds into science instruction | (1) | (2) | (3) | (4) | (5) |
|  | How to differentiate science instruction to meet the needs of diverse learners | (1) | (2) | (3) | (4) | (5) |

20. In the last 3 years, has your school offered teacher study groups where teachers meet on a regular basis to discuss teaching and learning of science/engineering, and possibly other content areas as well (sometimes referred to as Professional Learning Communities, PLCs, or lesson study)?
```
- Yes
- No [Skip to Q32]
```

21. [Presented only to schools that include any grades $K-5$ ]

Typically, are teachers of grades $\mathrm{K}-5$ science required to participate in these science/engineering-focused teacher study groups?

| $\circ$ | Yes, all teachers of grades K-5 science |
| :---: | :--- |
| $\circ$ | Yes, but only science/STEM specialists |
| $\circ$ | No |

22. [Presented only to schools that include any grades 6-8]

Typically, are teachers of grades $6-8$ science classes required to participate in these science/engineering-focused teacher study groups?

| $\circ$ | Yes |
| :--- | :--- |
|  | No |

23. [Presented only to schools that include any grades 9-12]

Typically, are teachers of grades $9-12$ science classes required to participate in these science/engineering-focused teacher study groups?

| $\circ$ | Yes |
| :--- | :--- |
|  | No |

24. Has your school specified a schedule for when these science/engineering-focused teacher study groups are expected to meet?
```
\begin{tabular}{|l|l|}
\hline- & Yes \\
\hline & No [Skip to Q27] \\
\hline
\end{tabular}
```

25. Over what period of time have these science/engineering-focused teacher study groups typically been expected to meet?

| $\circ$ | The entire school year |
| :---: | :--- |
| $\circ$ | One semester |
| $\circ$ | Less than one semester |

26. How often have these science/engineering-focused teacher study groups typically been expected to meet?

| $\circ$ | Less than once a month |
| :---: | :--- |
| $\circ$ | Once a month |
| $\circ$ | Twice a month |
| $\circ$ | More than twice a month |

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

| $\square$ | Organized by grade level |
| :---: | :--- |
| $\square$ | Include teachers from multiple grade levels |
| $\square$ | Include teachers who teach different science/engineering subjects |
| $\square$ | Include parents/guardians or other community members |
| $\square$ | Include higher education faculty or other "consultants" |
| $\square \square$ | Include school and/or district/diocese administrators |
| $\square$ | Limited to teachers from this school |
| $\square$ | Include teachers from other schools in the district/diocese |
| $\square$ | Inot presented to non-Catholic private schools] |
|  | Include teachers from other schools outside of your district/diocese |

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

Teachers engage in science investigations.
Teachers engage in engineering design challenges.
Teachers analyze student science assessment results.
Teachers analyze science/engineering instructional materials (for example: textbooks or modules).
Teachers plan science/engineering lessons together.
Teachers rehearse instructional practices (meaning: try out, receive feedback, and reflect on those practices).
Teachers observe each other's science/engineering instruction (either in-person or through video recording).
Teachers provide feedback on each other's science/engineering instruction.
Teachers examine classroom artifacts (for example: student work samples, videos of classroom instruction).
29. To what extent have these science/engineering-focused teacher study groups emphasized each of the following? [Select one on each row.]

|  | NOT AT ALL | SOMEWHAT |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| a. Deepening teachers' understanding of science concepts | (1) | (2) | (3) | (4) | (5) |
| b. Deepening teachers' 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 teachers' understanding of how engineering is done (for example: identifying criteria and constraints, designing solutions, optimizing solutions) | (1) | (2) | (3) | (4) | (5) |
| d. Deepening teachers' understanding of the state science standards | (1) | (2) | (3) | (4) | (5) |
| e. Deepening teachers' understanding of how students think about various science ideas | (1) | (2) | (3) | (4) | (5) |
| f. How to use particular science/engineering instructional materials (for example: textbooks or modules) | (1) | (2) | (3) | (4) | (5) |
| g. How to monitor student understanding during science/engineering instruction | (1) | (2) | (3) | (4) | (5) |
| h. How to adapt science instruction to address student misconceptions | (1) | (2) | (3) | (4) | (5) |
| i. How to use technology in science instruction | (1) | (2) | (3) | (4) | (5) |
| j. How to develop students' confidence that they can successfully pursue careers in science/engineering | (1) | (2) | (3) | (4) | (5) |
| k. How to incorporate real-world issues (for example: current events, community concerns) into science instruction | (1) | (2) | (3) | (4) | (5) |
| I. How to connect instruction to science/engineering career opportunities | (1) | (2) | (3) | (4) | (5) |
| m . How to integrate science, engineering, mathematics, and/or computer science | (1) | (2) | (3) | (4) | (5) |
| n. How to engage students in doing science (for example: developing scientific questions, developing and using models, engaging in argumentation) | (1) | (2) | (3) | (4) | (5) |
| 0. How to engage students in doing engineering (for example: identifying criteria and constraints, designing solutions, optimizing solutions) | (1) | (2) | (3) | (4) | (5) |
| p. How to incorporate students' cultural backgrounds into science instruction | (1) | (2) | (3) | (4) | (5) |
| q. How to differentiate science instruction to meet the needs of diverse learners | (1) | (2) | (3) | (4) | (5) |

30. Have there been designated leaders for these science/engineering-focused teacher study groups?
```
- Yes
- No [Skip to Q32]
```

31. The designated leaders of these science/engineering-focused teacher study groups were from: [Select all that apply.]
```
\begin{tabular}{|c|l|}
\hline\(\square\) & This school \\
\(\square\) & Elsewhere in this district/diocese [Not presented to non-Catholic private schools] \\
\(\square\) & College/University \\
\(\square\) & External consultants \\
\(\square\) & Other (please specify: \(\quad\) \\
\hline
\end{tabular}
```

32. Thinking about last school year, which of the following were used to provide teachers in this school with time for professional development workshops/teacher study groups that included a focus on science/engineering and/or science/engineering teaching, regardless of whether they were offered by your school and/or district/diocese? [Select all that apply.]

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

33. Do any teachers in your school have access to one-on-one coaching focused on improving their science instruction (include voluntary and required coaching)?
```
|\circ
```

34. This school year, how many teachers in this school have received one-on-one coaching focused on improving their science instruction (include voluntary and required coaching)? [Enter response as a whole number (for example: 15)] $\qquad$
35. To what extent is one-on-one coaching focused on improving science instruction provided by each of the following? [Select one on each row.]

36. Which of the following are provided to teachers considered in need of special assistance in science teaching? [Select all that apply.]
[^0]
## Thank you!


[^0]:    - Seminars, classes, and/or study groups
    - Guidance from a formally designated mentor or coach
    - A higher level of supervision than for other teachers
    - None of the above

