

NIST Summer Institute: Post-survey for Participants [insert school year]

Please take the time to complete this survey on your experience as a teacher during the current school year. Your feedback is truly valuable to the administrators of the NIST Summer Institute program and the data will be kept strictly confidential. Data will be used solely for the overall evaluation of the program and program improvement purposes.

The survey should take 40 minutes to complete.

If you have any questions, please contact **Susan Heller-Zeisler** at NIST. She can be reached by phone at (301) 975-3111 or by email at szeisler@nist.gov.

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NIST Summer Institute: Post-survey for Participants

As part of the evaluation of the NIST Summer Institute, NIST is conducting this survey to document the teaching practices and beliefs of program applicants.

Participation in this activity is voluntary, but the information gained from the survey will be of great value to NIST as it refines its program to best meet the needs of middle school science teachers. Information collected through the survey will be strictly confidential and used solely for research purposes. Only aggregate findings will be included in the final report. No findings will be connected to individual teachers. The information collected will not be shared with other school personnel or used as part of a performance evaluation.

1. If you agree to participate in the survey, please check the following box and complete the survey.

I have read the information on this screen and understand what my participation involves. I consent to participating in the survey as part of the NIST evaluation.

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2. Please enter your ID number in the space below (your ID number can be found in the email with the link to this survey).

ID Number:

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3. In what grade did you spend the majority of your time teaching science during the current school year? (Select one.)

6th grade

7th grade

8th grade

4. If you taught science to more than one grade during the current school year, select all additional grades that apply.

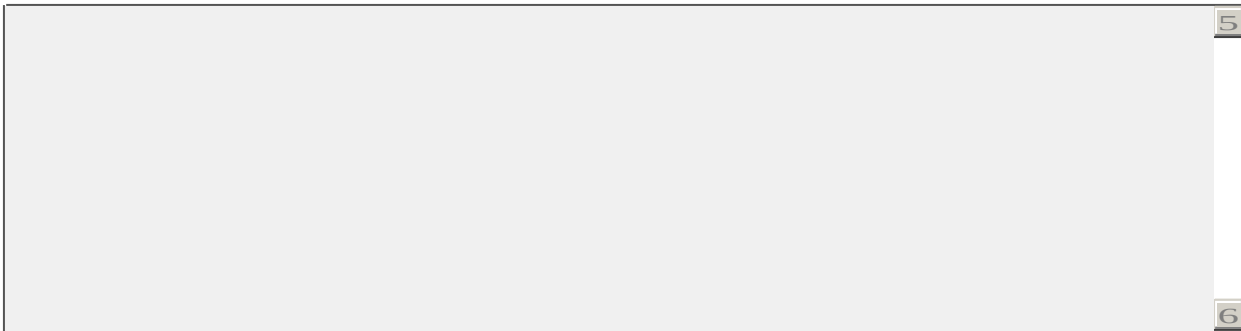
6th grade

7th grade

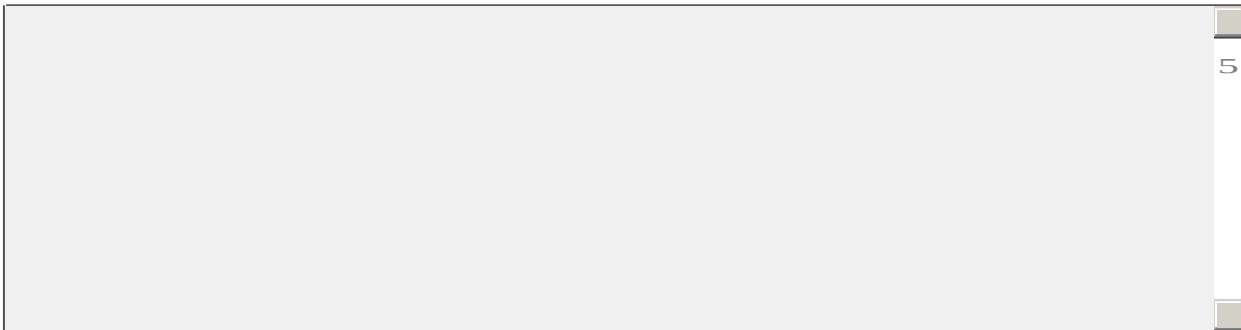
8th grade

I did not teach science to any additional grades

5. What were the three most valuable things you took away from the NIST Summer Institute program?



6. Are there any particular aspects of the NIST experience that you feel should have been handled differently or could be improved?



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7. Which subject areas did you cover in your science classes during the current school year. (Mark one response on each line.)

| | Subject covered | Subject not covered |
|------------------|--------------------------|--------------------------|
| a. Biology | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Earth Science | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Space Science | <input type="checkbox"/> | <input type="checkbox"/> |
| d. Physics | <input type="checkbox"/> | <input type="checkbox"/> |
| e. Chemistry | <input type="checkbox"/> | <input type="checkbox"/> |
| f. Weather | <input type="checkbox"/> | <input type="checkbox"/> |
| g. Metrology* | <input type="checkbox"/> | <input type="checkbox"/> |

***Metrology:** is the science of measurement, embracing both experimental and theoretical determinations at any level of uncertainty in any field of science and technology. Scientific or fundamental metrology concerns the establishment of quantity systems, unit systems, units of measurement, the development of new measurement methods, realization of measurement standards and the transfer of traceability from these standards to users in society. Applied or industrial metrology concerns the application of measurement science to manufacturing and other processes and their use in society, ensuring the suitability of measurement instruments, their calibration and quality control of measurements. Legal metrology concerns regulatory requirements of measurements and measuring instruments for the protection of health, public safety, the environment, enabling taxation, protection of consumers and fair trade.

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8. How prepared are you to link scientific concepts to realworld applications for each of the subject areas listed below? (Mark one response on each line.)

| | Not prepared | Somewhat prepared | Moderately prepared | Very well prepared |
|------------------|--------------|-------------------|---------------------|--------------------|
| a. Biology | | | | |
| b. Earth Science | | | | |
| c. Space Science | | | | |
| d. Physics | | | | |
| e. Chemistry | | | | |
| f. Weather | | | | |
| g. Metrology* | | | | |

***Metrology:** is the science of measurement, embracing both experimental and theoretical determinations at any level of uncertainty in any field of science and technology. Scientific or fundamental metrology concerns the establishment of quantity systems, unit systems, units of measurement, the development of new measurement methods, realization of measurement standards and the transfer of traceability from these standards to users in society. Applied or industrial metrology concerns the application of measurement science to manufacturing and other processes and their use in society, ensuring the suitability of measurement instruments, their calibration and quality control of measurements. Legal metrology concerns regulatory requirements of measurements and measuring instruments for the protection of health, public safety, the environment, enabling taxation, protection of consumers and fair trade.

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9. What is your level of preparedness to use the following teaching practices in your classroom? (Mark one response on each line.)

| | Not prepared | Somewhat prepared | Moderately prepared | Very well prepared |
|--|--------------|-------------------|---------------------|--------------------|
| a. Using realworld examples to introduce science concepts | | | | |
| b. Using realworld examples to motivate student interest in science | | | | |
| c. Connecting new science concepts to previous science concepts | | | | |
| d. Creating analogies for scientific concepts | | | | |
| e. Addressing students' misconceptions | | | | |
| f. Having students collect data | | | | |
| g. Providing direct instruction to help students understand a scientific concept | | | | |
| h. Asking students to compare the results of an experiment to their original predictions | | | | |
| i. Asking students to explain their conclusions and/or reasoning | | | | |
| j. Increasing student interest in science careers | | | | |
| k. Increasing student interest in the role of science in everyday life | | | | |

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10. Approximately how often did you have students engage in the following learning activities during the current school year? (Mark one response on each line.)

Weekly Monthly Annually Never

a. Conduct investigations (e.g., doing lab activities or using manipulatives)

b. Consider a realworld problem relevant to the course and develop a plan to address it

c. Use technical passages (from news or science journals) to investigate current issues or new developments in science or technology

d. Listen to guest speakers

e. Go on field trips relevant to the curriculum

f. Investigate possible career opportunities in mathematics, science, or technology

g. Design and implement their own scientific investigation

h. Use "stateoftheart" equipment or technologies

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11. Consider only science teachers within your school: How often did you do the following with them during the current school year? (Mark one response on each line.)

12 times a week 12 times a month 12 times a year Never

- a. Discuss general ideas for how to teach specific science concepts
- b. Share a specific science lesson that was very effective for teaching a concept
- c. Share strategies for making science accessible to all students
- d. Have my classroom observed by other science teachers to demonstrate how to teach a specific science lesson, activity, or concept
- e. Demonstrate a specific science lesson, activity, or concept for students in another teacher's classroom

12. Consider only science teachers outside your school that attended the Institute: How often did you do the following with them during the current school year? (Mark one response on each line.)

12 times a week 12 times a month 12 times a year Never

- a. Discuss general ideas for how to teach specific science concepts
- b. Share a specific science lesson that was very effective for teaching a concept
- c. Share strategies for making science accessible for all students

13. Consider only science teachers outside your school that did not attend the Institute: How often did you do the following with them during the current school year? (Mark one response on each line.)

12 times a week 12 times a month 12 times a year Never

- a. Discuss general ideas for how to teach specific science concepts
- b. Share a specific science lesson that was very effective for teaching a concept
- c. Share strategies for making science accessible for all students

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14. When you had a science content question related to your teaching responsibilities during the current school year, how often did you use the following information sources to obtain answers? (Mark one response on each line.)

| | 12 times a week | 12 times a month | 12 times a year | Never |
|---|-----------------|------------------|-----------------|-------|
| a. A teaching colleague within my middle school | | | | |
| b. A teaching colleague at another middle school | | | | |
| c. A science supervisor from within my school district | | | | |
| d. Someone from a professional science teaching organization (e.g., NSTA) | | | | |
| e. A professional scientist of my acquaintance (e.g., a former professor) | | | | |
| f. My school district's science website | | | | |
| g. My state's science website | | | | |
| h. A targeted Google search | | | | |
| i. A federal agency website (e.g., NSF, NASA, NOAA, NIST) | | | | |
| j. Specific science websites (e.g., Why Files, Exploratorium) | | | | |
| k. Other | | | | |

15. If you selected "Other" in Question 14, please specify the "Other" information source(s) in the space below:

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16. Indicate the extent to which you agree or disagree with each of the following statements for the current school year. (Mark one response on each line.)

Strongly Disagree Disagree Agree Strongly Agree

a. The quality of my teaching influences my students' interest in science

b. The quality of my teaching influences my students' achievement in science

c. I continually find better ways to teach science

d. I know how to motivate my students to learn science

e. I influence the quality of science instruction for students outside of my own classroom

f. I am currently in a position to influence the number of my students that know about sciencerelated careers

g. I am currently in a position to influence the number of my students that find STEM subjects interesting

h. I am currently in a position to influence the number of my students that view science as being relevant to their lives

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17. To what extent did you make use of the following components of the NIST Summer Institute program with your students during the current school year? (Mark one response on each line.)

| | I do not remember this component | I did not use this component | I used this component in one unit | I used this component in two or more units |
|--|----------------------------------|------------------------------|-----------------------------------|--|
| a. Measurement uncertainty: How big is Pi? | | | | |
| b. Metrics Estimation Game | | | | |
| c. Weights and Measures activities | | | | |
| d. A world of sound (with SPS organization) | | | | |
| e. Cement activity | | | | |
| f. Thermometry activities: Ice melting point, Steam point, CO ₂ sublimation point | | | | |
| g. Nanoscale activities | | | | |
| h. Diffraction activity (from NCNR) | | | | |
| i. Spectroscopy activity | | | | |
| k. Introduction to coding and social media | | | | |
| l. Chemical and Physical Separations | | | | |
| m. Earthquake activities | | | | |
| n. Chemical reactions: Foam Gnome | | | | |
| o. DNA activities (Mycomuncher puzzle and genes and your very own puppy) | | | | |
| p. NASA Resources | | | | |
| q. NIST SI Superheroes and resources | | | | |
| r. Nanomagnets | | | | |
| q. Measurement of Temperature with wooden and aluminum blocks | | | | |

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18. To what extent were each of the following components of the NIST Summer Institute

program aligned with the your middle school curriculum taught by you or by your colleagues in other grades? *(Mark one response on each line.)*

I do not remember
this component Not at all aligned Slightly aligned Moderately aligned Greatly aligned

a. Measurement uncertainty: How big is Pi?

b. Metrics Estimation Game

c. Weights and Measures activities

d. A world of sound (with SPS organization)

e. Cement activity

f. Thermometry activities: Ice melting point,
Steam point, CO₂ sublimation point

g. Nanoscale activities

h. Diffraction activity (from NCNR)

i. Spectroscopy activity

k. Introduction to coding and social media

l. Chemical and Physical Separations

m. Earthquake activities

n. Chemical reactions: Foam Gnome

o. DNA activities (Mycomuncher puzzle and
genes and your very own puppy)

p. NASA Resources

q. NIST SI Superheroes and resources

r. Nanomagnets

q. Measurement of Temperature with wooden
and aluminum blocks

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19. To what extent do you feel that you experienced each of the following types of learning

as a result of your participation in the NIST Summer Institute program? (*Mark one response on each line.*)

Not at all Slight extent Moderate extent Great extent

a. I gained a greater understanding of the applications of science and technology in everyday life

b. I acquired greater understanding of fundamental concepts in science

c. I became familiar with new materials and equipment that I can use in my teaching

d. I learned about innovative ways to use standard materials and equipment in my teaching

e. I increased my knowledge of current issues in scientific research

f. I gained a greater appreciation of the difficulties some students encounter when learning science

g. I better understand how collaborative inquiry can be done successfully

h. I increased my knowledge of careers that utilize science

20. To what extent was your NIST experience successful in each of the following ways? (*Mark one response on each line.*)

Not at all Slight extent Moderate extent Great extent

a. It was responsive to my professional development needs

b. It was appropriate to my knowledge and skills

c. It was appropriate to my interests

d. It provided opportunities to engage in inquiry/research activities that I have been able to adapt for classroom use

e. The activities were enjoyable

f. It stretched me intellectually

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21. To what extent do you agree or disagree with each of the following statements concerning the impact of the NIST Summer Institute program on you professionally? (Mark one response on each line.)

Strongly disagree Disagree Not sure Agree Strongly agree

a. It increased my confidence as a teacher

b. It elevated my enthusiasm for science

c. It increased my interest in research and the ways science and technology can be applied

d. It stimulated me to think about ways I can improve my teaching

e. It increased my effectiveness as a teacher

f. It increased my interest and ability to network with teachers

g. It increased my interest and ability to network with scientists

h. It increased my motivation to seek out other experiential professional development activities

i. It increased my commitment to learning and seeking new ideas and activities for my classroom

j. It increased my capacity to provide engaging activities for my students

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22. Indicate whether you shared each of the following components of the NIST Summer

Institute program with other teachers at your middle school. (Mark one response on each line.)

| I did not share this component | I shared this component with teachers from MY grade | I shared this component with teachers from ANOTHER grade | I shared this component with teachers from BOTH my grade and another grade |
|--------------------------------|---|--|--|
|--------------------------------|---|--|--|

a. Measurement uncertainty: How big is Pi?

b. Metrics Estimation Game

c. Weights and Measures activities

d. A world of sound (with SPS organization)

e. Cement activity

f. Thermometry activities: Ice melting point, Steam point, CO₂ sublimation point

g. Nanoscale activities

h. Diffraction activity (from NCNR)

i. Spectroscopy activity

k. Introduction to coding and social media

l. Chemical and Physical Separations

m. Earthquake activities

n. Chemical reactions: Foam Gnome

o. DNA activities (Mycomuncher puzzle and genes and your very own puppy)

p. NASA Resources

q. NIST SI Superheroes and resources

r. Nanomagnets

q. Measurement of Temperature with wooden and aluminum blocks

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23. Select all forms of interaction that you had with each of the following individuals during the current school year. (Mark all that apply on each line.)

Discuss science content Discuss how to teach a science subject Ask for assistance with NIST resources provided as part of the Institute Other form of interaction

a. Kate Rimmer

b. NIST presenter

c. NIST mentor (a scientist you worked with at the Institute)

d. Other teachers you met at the Institute

Other (please specify your "other" form of interaction)

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24. Select all forms of interaction that you had with each of the following individuals +during the current school year. (Mark all that apply on each line.)

Discuss science content Discuss how to teach a science subject Ask for assistance with NIST resources provided as part of the Institute Other form of interaction

a. Kate Rimmer

b. NIST presenter

c. NIST mentor (a scientist you worked with at the Institute)

d. Other teachers you met at the Institute

Other (please specify your "other" form of interaction)

25. How would you rate the NIST Summer Institute program in light of other professional development programs you have experienced?

Poor

Fair

Good

Very good

Excellent

26. Have you recommended the NIST Summer Institute program to your teacher colleagues?

Yes

No

27. Would you be willing to assist the Summer Institute program evaluation by answering followup questions to this survey over the phone?

Yes

No

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If you are not finished with the survey, select the "Previous" button to navigate the survey and complete your responses.

If you are ready to submit your survey now, select the "Done" button. After you submit, you will NOT be able to reenter the survey.