NIST Summer Institute
Post-survey for Participants

Please take the time to complete this survey on your experience participating in NIST's Summer Institute program. Your feedback is truly valuable to the administrators of the 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 60 minutes to complete.
Teachers who complete the survey will receive a $50 gift card from a local bookstore in appreciation for their time.

Completed surveys may be returned to Westat by email, fax, or mail.

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By fax: Melissa Bryce (301) 517-4134

By mail: Melissa Bryce, Westat, 1650 Research Blvd.,
TA 2043, Rockville, MD 20850

If you have any questions, please contact **Melissa Bryce** at Westat. She can be reached by phone at (240) 314-2588 or by email at Melissabryce@westat.com.

NOTE: This questionnaire contains collection of information requirements subject to the Paperwork Reduction Act (PRA). Notwithstanding any other provisions of the law, no person is required to respond to, nor shall any person be subject to penalty for failure to comply with, a collection of information subject to the requirements of the PRA, unless that collection of

Instructions:

- Save this file to your computer's desktop or a non-temporary folder. Click on the box on each line that indicates your response. You can uncheck a response by clicking on the box a second time. There are no limits to the amount of text you can type into the blank spaces below the open-ended questions and you can cut and paste text into this document.

- Note - Your individual survey responses will only be seen by Westat staff. Your individual responses will not be linked with your name in the final report nor will they be shared with your school, school system, or NIST. The final report will provide an overview of the NIST Summer Institute Program.

Name:	

School:	

1. What grade(s) did you teach in the [insert school year] school year? Select one primary grade that you spent the majority of your time teaching during the [insert school year] school year. If you taught more than one grade, select all additional grades that apply.

		Primary Grade *(Select one)*	Additional Grades *(Select all that apply)*
a.	6th grade	☐ 1	☐ 1
b.	7th grade	☐ 2	☐ 2
c	8th grade	☐ 3	☐ 3

2.

3.

2. In Column A, indicate how prepared you are to link scientific concepts to real-world applications in each of the subject areas listed below. In Column B, indicate which subject areas you covered in your science classes *during the [insert school year] school year*.

		Column A Your level of preparedness to link scientific concepts to real-world applications in the following subject areas				**Column B** Subject area covered in your classes in the **[insert school year]** school year	
		Not prepared	**Somewhat prepared**	**Moderately prepared**	**Very well prepared**	**Yes**	**No**
a.	Biology	☐ 1	☐ 2	☐ 3	☐ 4	☐ 1	☐ 2
b.	Earth Science	☐ 1	☐ 2	☐ 3	☐ 4	☐ 1	☐ 2
c.	Space Science	☐ 1	☐ 2	☐ 3	☐ 4	☐ 1	☐ 2
d.	Physics	☐ 1	☐ 2	☐ 3	☐ 4	☐ 1	☐ 2

e.	Chemistry	☐1	☐2	☐3	☐4	☐1	☐2
f.	Weather	☐1	☐2	☐3	☐4	☐1	☐2
g.	Metrology (Measurement Science)	☐1	☐2	☐3	☐4	☐1	☐2
h.	Separation Science[1]	☐1	☐2	☐3	☐4	☐1	☐2
i.	Forensic Topics	☐1	☐2	☐3	☐4	☐1	☐2
j.	Other *(Specify on line)*	☐1	☐2	☐3	☐4	☐1	☐2

3. For each of the following teaching practices, indicate its *importance* to you as a science teacher (Column A) and your *level of preparedness* to use it in the classroom in the [insert school year] school year (Column B). *(On each line, mark one response in Column A and mark one response in Column B.)*

		Column A Importance to you				**Column B** Level of preparedness			
		Not Important	**Somewhat Important**	**Moderately Important**	**Very Important**	**Not prepared**	**Somewhat prepared**	**Moderately prepared**	**Very well prepared**
a.	Use real-world examples to introduce science concepts	☐1	☐2	☐3	☐4	☐1	☐2	☐3	☐4
b.	Use real-world examples to motivate student interest in science	☐1	☐2	☐3	☐4	☐1	☐2	☐3	☐4
c.	Connect new science concepts to previous science concepts	☐1	☐2	☐3	☐4	☐1	☐2	☐3	☐4

[1] Processes by which components of a mixture are separated from each other. Example topic areas in Separation Science include chromatography, crystallization, gel electrophoresis, mass spectrometry, etc.

d.	Create analogies for scientific concepts	☐1	☐2	☐3	☐4	☐1	☐2	☐3	☐4
e.	Address students' misconceptions	☐1	☐2	☐3	☐4	☐1	☐2	☐3	☐4
f.	Have students collect data	☐1	☐2	☐3	☐4	☐1	☐2	☐3	☐4
g.	Provide direct instruction to help students understand a scientific concept	☐1	☐2	☐3	☐4	☐1	☐2	☐3	☐4
h.	Ask students to compare the results of an experiment to their original predictions	☐1	☐2	☐3	☐4	☐1	☐2	☐3	☐4
i.	Ask students to explain their conclusions and/or reasoning	☐1	☐2	☐3	☐4	☐1	☐2	☐3	☐4
j.	Increase student interest in science careers	☐1	☐2	☐3	☐4	☐1	☐2	☐3	☐4
k.	Increase student interest in the role of science in everyday life	☐1	☐2	☐3	☐4	☐1	☐2	☐3	☐4

4. Approximately how often did you have <u>students</u> engage in the following learning activities during the [insert school year] school year? ***(Mark one response on each line.)***

	Weekly	Monthly	Annually	Never
a. Conduct investigations (e.g., doing lab activities or using manipulatives)	☐1	☐2	☐3	☐4

b. Consider a real-world problem relevant to the course and develop a plan to address it	☐1	☐2	☐3	☐4
c. Use technical passages (from news or science journals) to investigate current issues or new developments in science or technology	☐1	☐2	☐3	☐4
d. Listen to guest speakers	☐1	☐2	☐3	☐4
e. Go on field trips relevant to the curriculum	☐1	☐2	☐3	☐4
f. Investigate possible career opportunities in mathematics, science, or technology	☐1	☐2	☐3	☐4
g. Design and implement their own scientific investigation	☐1	☐2	☐3	☐4
h. Use “state-of-the-art” equipment or technologies	☐1	☐2	☐3	☐4

5. How often did you do each of the following with other <u>science teachers at your school</u> during the [insert school year] school year? *(Mark one response on each line.)*

	Weekly	Monthly	Annually	Never
a. Discuss general ideas for how to teach specific science concepts	☐1	☐2	☐3	☐4
b. Share a specific science lesson that was very effective for teaching a concept	☐1	☐2	☐3	☐4
c. Share strategies for making science accessible to all students	☐1	☐2	☐3	☐4
d. Have my classroom observed by other science teachers to demonstrate how to teach a specific science lesson, activity, or concept	☐1	☐2	☐3	☐4
e. Demonstrate a specific science lesson, activity, or concept for students in another teacher’s classroom	☐1	☐2	☐3	☐4

6. When you had a <u>science content question</u> related to your teaching responsibilities during the [insert school year] school year, what

information sources did you seek for answers? *(Mark one response on each line.)*

		Weekly	Monthly	Annually	Never
a.	A teaching colleague within my middle school	☐1	☐2	☐3	☐4
b.	A teaching colleague at another middle school	☐1	☐2	☐3	☐4
c.	A science supervisor from within my school district	☐1	☐2	☐3	☐4
d.	Someone from a professional science teaching organization (e.g., MAST, NSTA)	☐1	☐2	☐3	☐4
e.	A professional scientist of my acquaintance (e.g., a former professor)	☐1	☐2	☐3	☐4
f.	My school district's science website	☐1	☐2	☐3	☐4
g.	My state school system's science website	☐1	☐2	☐3	☐4
h.	A targeted Google search	☐1	☐2	☐3	☐4
i.	A federal agency website (e.g., NSF, NASA, NOAA, NIST)	☐1	☐2	☐3	☐4
j.	Specific science websites (e.g., the *Why Files*, the *Exploratorium*)	☐1	☐2	☐3	☐4
k.	Other *(Specify on line)*	☐1	☐2	☐3	☐4

_____

7. Indicate the extent to which you agree or disagree with each of the following statements for the [insert school year] school year. *(Mark one response on each line.)*

		Strongly Disagree	Disagree	Agree	Strongly Agree
a.	The quality of my teaching influenced my students' *interest* in science	☐1	☐2	☐3	☐4
b.	The quality of my teaching influenced my students' *achievement* in science	☐1	☐2	☐3	☐4
c.	I continually found better ways to teach science	☐1	☐2	☐3	☐4
d.	I knew how to motivate my students to learn science	☐1	☐2	☐3	☐4
e.	I was able to effectively supervise the research projects of my students	☐1	☐2	☐3	☐4
f.	I influenced the quality of science instruction for students outside of my own classroom	☐1	☐2	☐3	☐4

The following question asks about a Metrology session at the NIST Summer Institute. Responses to this item will help NIST assess improvements that might be made to lessons offered through the Summer Institute. Please take the time to answer this question thoroughly and include as many details and examples as are necessary.

8. **Three students measure a table with a meter stick and come up with three different numbers. They claim only one of their answers can be correct. How would you respond to their assertion?**

    - *Please make sure your answer is framed in a context that (1) is meaningful to middle school students and (2) incorporates the definitions, concepts, and classroom/real-world applications you learned at the NIST Summer Institute.*

9. *To what extent did you <u>make use of</u> the following components of the NIST Summer Institute program with your students during the [insert school year] 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?.....	☐1	☐2	☐3	☐4
b.	Metrics “Jeopardy”	☐1	☐2	☐3	☐4
c.	Weights and measures activities	☐1	☐2	☐3	☐4
d.	Experimental design	☐1	☐2	☐3	☐4
e.	Cement activity	☐1	☐2	☐3	☐4
f.	Sampling activity	☐1	☐2	☐3	☐4
g.	Ink identification with thin layer chromatography (TLC)	☐1	☐2	☐3	☐4
h.	Thermometry activities: Ice melting point, Steam point, CO_2 sublimation point	☐1	☐2	☐3	☐4
i.	Forensic science activities	☐1	☐2	☐3	☐4
j.	DNA extraction	☐1	☐2	☐3	☐4
k.	Gel electrophoresis	☐1	☐2	☐3	☐4
l.	Growing a crystal activity	☐1	☐2	☐3	☐4
m.	Solar system scale model	☐1	☐2	☐3	☐4
n.	Spectrometry activity	☐1	☐2	☐3	☐4
o.	LabQuest and probes	☐1	☐2	☐3	☐4
p.	Types of magnetism	☐1	☐2	☐3	☐4
q.	Designing buildings to resist earthquakes	☐1	☐2	☐3	☐4

r.	Aerodynamics of air planes	☐1	☐2	☐3	☐4
s.	pH of water	☐1	☐2	☐3	☐4
t.	Bioreactors	☐1	☐2	☐3	☐4
u.	Teaching toys (e.g. drinking bird)	☐1	☐2	☐3	☐4

10. To what extent was each of the following components of the NIST Summer Institute program <u>aligned with the curriculum you taught</u> in the [insert school year] school year? (*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?.....	☐1	☐2	☐3	☐4	☐5
b.	Metrics “Jeopardy”	☐1	☐2	☐3	☐4	☐5
c.	Weights and measures activities	☐1	☐2	☐3	☐4	☐5
d.	Experimental design	☐1	☐2	☐3	☐4	☐5
e.	Cement activity	☐1	☐2	☐3	☐4	☐5
f.	Sampling activity	☐1	☐2	☐3	☐4	☐5
g.	Ink identification with thin layer chromatography (TLC)	☐1	☐2	☐3	☐4	☐5
h.	Thermometry activities: Ice melting point, Steam point, CO_2 sublimation point	☐1	☐2	☐3	☐4	☐5
i.	Forensic science activities	☐1	☐2	☐3	☐4	☐5
j.	DNA extraction	☐1	☐2	☐3	☐4	☐5
k.	Gel electrophoresis	☐1	☐2	☐3	☐4	☐5
l.	Growing a crystal activity	☐1	☐2	☐3	☐4	☐5
m.	Solar system scale model	☐1	☐2	☐3	☐4	☐5
n.	Spectrometry activity	☐1	☐2	☐3	☐4	☐5
o.	LabQuest and probes	☐1	☐2	☐3	☐4	☐5
p.	Types of magnetism	☐1	☐2	☐3	☐4	☐5

q.	Designing buildings to resist earthquakes	☐1	☐2	☐3	☐4	☐5
r.	Aerodynamics of air planes	☐1	☐2	☐3	☐4	☐5
s.	pH of water	☐1	☐2	☐3	☐4	☐5
t.	Bioreactors	☐1	☐2	☐3	☐4	☐5
u.	Teaching toys (e.g. drinking bird)	☐1	☐2	☐3	☐4	☐5

11. To what extent did you make use of the following LabQuest probes with your students during the [insert school year] 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. Motion detector	☐1	☐2	☐3	☐4
b. pH sensor	☐1	☐2	☐3	☐4
c. Voltage probe	☐1	☐2	☐3	☐4
d. Temperature probes	☐1	☐2	☐3	☐4
e. Light sensor	☐1	☐2	☐3	☐4
f. Dual-range force sensor	☐1	☐2	☐3	☐4
g. Gas pressure sensor	☐1	☐2	☐3	☐4
h. Hand-grip heart rate monitor	☐1	☐2	☐3	☐4
i. Conductivity probe	☐1	☐2	☐3	☐4
j. Magnetic field sensor	☐1	☐2	☐3	☐4

12. How has having the LabQuest and probes changed the way you do activities and hand-on investigations with your students?

13. **What steps might NIST take to better integrate LabQuest into the Summer Institute?**

14. 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	☐1	☐2	☐3	☐4
b.	I acquired greater understanding of fundamental concepts in science	☐1	☐2	☐3	☐4
c.	I became familiar with new materials and equipment that I can use in my teaching	☐1	☐2	☐3	☐4
d.	I learned about innovative ways to use standard materials and equipment in my teaching	☐1	☐2	☐3	☐4
e.	I increased my knowledge of current issues in scientific research	☐1	☐2	☐3	☐4
f.	I gained a greater appreciation of the difficulties some students encounter when learning science	☐1	☐2	☐3	☐4
g.	I better understand how collaborative inquiry can be done successfully	☐1	☐2	☐3	☐4
h.	I increased my knowledge of careers that utilize science	☐1	☐2	☐3	☐4

15. *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	☐1	☐2	☐3	☐4
b.	It was appropriate to my knowledge and skills	☐1	☐2	☐3	☐4
c.	It was appropriate to my interests	☐1	☐2	☐3	☐4
d.	It provided opportunities to engage in inquiry/research activities that I have been able to adapt for classroom use	☐1	☐2	☐3	☐4

e.	The activities were enjoyable	☐1	☐2	☐3	☐4
f.	It stretched me intellectually	☐1	☐2	☐3	☐4

16. 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	☐1	☐2	☐3	☐4	☐5
b.	It elevated my enthusiasm for science	☐1	☐2	☐3	☐4	☐5
c.	It increased my interest in research and the ways science and technology can be applied	☐1	☐2	☐3	☐4	☐5
d.	It stimulated me to think about ways I can improve my teaching	☐1	☐2	☐3	☐4	☐5
e.	It increased my effectiveness as a teacher	☐1	☐2	☐3	☐4	☐5
f.	It increased my interest and ability to network with teachers	☐1	☐2	☐3	☐4	☐5
g.	It increased my interest and ability to network with scientists	☐1	☐2	☐3	☐4	☐5
h.	It increased my motivation to seek out other experiential professional development activities	☐1	☐2	☐3	☐4	☐5
i.	It increased my commitment to learning and seeking new ideas and activities for my classroom	☐1	☐2	☐3	☐4	☐5
j.	It increased my capacity to provide engaging activities for my students	☐1	☐2	☐3	☐4	☐5

17. How would you describe the engagement of your students in the NIST-based lessons/activities/materials you used in your classroom?

18. Have you shared the ideas, activities or materials from the NIST Summer Institute program with other teachers at your middle school?

Yes..... ☐1 *(Answer Q18a)*
No..... ☐2 *(Answer Q18b)*

18a. If yes, indicate with whom you shared each of the following components of the NIST Summer Institute. *(*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?.....	☐1	☐2	☐3	☐4
b.	Metrics “Jeopardy”	☐1	☐2	☐3	☐4
c.	Weights and measures activities	☐1	☐2	☐3	☐4
d.	Experimental design	☐1	☐2	☐3	☐4
e.	Cement activity	☐1	☐2	☐3	☐4
f.	Sampling activity	☐1	☐2	☐3	☐4
g.	Ink identification with thin layer chromatography (TLC)	☐1	☐2	☐3	☐4
h.	Thermometry activities: Ice melting point, Steam point, CO_2 sublimation point	☐1	☐2	☐3	☐4
i.	Forensic science activities	☐1	☐2	☐3	☐4

		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
j.	DNA extraction	☐1	☐2	☐3	☐4
k.	Gel electrophoresis	☐1	☐2	☐3	☐4
l.	Growing a crystal activity	☐1	☐2	☐3	☐4
m.	Solar system scale model	☐1	☐2	☐3	☐4
n.	Spectrometry activity	☐1	☐2	☐3	☐4
o.	LabQuest and probes	☐1	☐2	☐3	☐4
p.	Types of magnetism	☐1	☐2	☐3	☐4
q.	Designing buildings to resist earthquakes	☐1	☐2	☐3	☐4
r.	Aerodynamics of air planes	☐1	☐2	☐3	☐4
s.	pH of water	☐1	☐2	☐3	☐4
t.	Bioreactors	☐1	☐2	☐3	☐4
u.	Teaching toys (e.g. drinking bird)	☐1	☐2	☐3	☐4

18b. Why haven’t you shared the ideas, activities or materials from the NIST Summer Institute program with other teachers at your middle school?

19. Did you attend any of the *Science Afternoons at NIST* during the [insert school year] school year? (These were the follow-up professional development sessions offered at the NIST campus throughout the school year).

Yes..... ☐1 *(Answer Q19a)*
No..... ☐2 *(Answer Q19b)*

19a. If yes, how many did you attend? Did you find the follow-up professional development session(s) to be valuable? Why or why not?

19b. If not, why haven't you attended a follow-up professional development session?

20. For each person from the NIST Summer Institute, select all forms of interaction you had with them during the [insert school year] 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	Arrange field trips, demonstrations, or guest speakers for students	Other form of interaction *(specify on line)*
a.	Mary Satterfield	☐1	☐2	☐3	☐4	☐5_____
b.	NIST presenter	☐1	☐2	☐3	☐4	☐5_____
c.	NIST mentor (a scientist you shadowed at the Institute)	☐1	☐2	☐3	☐4	☐5_____
d.	Other teachers you met at the Institute	☐1	☐2	☐3	☐4	☐5_____

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

22. What was the most valuable thing you took away from the NIST Summer Institute program?

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

Poor..... ☐ 1
Fair..... ☐ 2
Good..... ☐ 3
Very good..... ☐ 4
Excellent..... ☐ 5

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

Yes ..... ☐ 1
No ..... ☐ 2

Thank you!