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Description of Data Collection

Study Endorsements

Prior to school recruitment, study endorsements were solicited from many national professional organizations in an effort to encourage participation. In the fall of 2016, each organization was sent a letter briefly describing the study and asking for input on the survey instruments. The letter included a link to a website where representatives could view the 2012 versions of the surveys (the 2018 versions were still being revised). The following organizations provided letters of endorsement, and their names were included on the study stationery.

American Association of Chemistry Teachers	National Association of Biology Teachers
American Association of Physics Teachers	National Association of Elementary School Principals
American Federation of Teachers	National Association of Secondary School Principals
American Society for Engineering Education	National Council of Supervisors of Mathematics
Association of Mathematics Teacher Educators	National Council of Teachers of Mathematics
Association of Science Teacher Educators	National Earth Science Teachers Association
Association of State Supervisors of Mathematics	National Education Association
Computer Science Teachers Association	National Science Education Leadership Association
Council of State Science Supervisors	National Science Teachers Association

Advance Notification

In February 2017, notification letters were mailed to the Chief State School Officers, advising them of the format and schedule of the study. Three days later, similar information letters were mailed to superintendents of districts in which sampled public schools were located. District officials were asked to contact the project team if they had any questions or concerns. (Copies of the state and district letters are included at the end of this appendix.)

Westat identified 135 school districts in the sample that had a formal research approval process. Westat prepared and submitted research applications according to each district's requirements and then followed up with research coordinators throughout the approval process. Of the 135 districts, 61 approved the study. Those that declined cited lack of time and misalignment with the district's own research priorities as reasons.

School Recruitment

In February 2017, a pre-survey packet was sent to the principal of each sampled school that had not refused participation at the district level. The pre-survey packet consisted of a cover letter from HRI describing the school's involvement, a one-page description of the study, and instructions for logging on to the study website and designating a school contact person or "school coordinator." (Copies of the packet materials are included at the end of this appendix.) The school coordinator designation page was designed to confirm the principal's contact information as well as to obtain the name, title, position, phone number, and email address of the coordinator. (The mailing also included a printed copy of the form and postage-paid return envelope.) As an incentive, school coordinators were offered honoraria of \$100 for completing a teacher list and school questionnaire, \$15 for completing each program questionnaire (optional), and \$10 for each completed program and teacher questionnaire. Teachers were offered a \$25 honorarium for completing the teacher questionnaire.

A small percentage of schools responded to the letter by going to the study website and designating a coordinator or by completing the printed copy and returning it by mail. If a principal had not responded within two weeks of receiving the letter, Westat began calling the school. Generally, a series of telephone calls was needed to determine whether anyone had received the letter, to whom the task had been delegated, and whether or not that person was planning to complete it. In many cases, schools requested a re-mailing of the survey materials.

A few school officials directly refused to participate at this stage, generally citing competing priorities and overburdened teachers. When this occurred, telephone prompters attempted to change the principal’s mind. Although this method was effective in some cases, most direct refusers did not change their mind.

Beginning in September 2017, each school’s coordinator was sent an email indicating that s/he had been designated by their principal as the survey contact and detailing the coordinator role in the study. If the coordinator was someone other than the principal, the principal was copied on the email. Each coordinator was asked to complete three initial tasks online: (1) submit a list of science, mathematics, and computer science teachers; (2) designate individuals to complete program-level questionnaires; and (3) respond to the School Coordinator Questionnaire (included in Appendix C). (Copies of the email, the teacher listing form and accompanying instructions are included at the end of this appendix.) Coordinators were asked to complete these tasks within a two-week period and were sent the first installment of their honorarium (\$100) within four weeks of completion.

Coordinators received a phone call one business day after being sent the email to confirm that the email was received. A second phone call was placed later in the week if the coordinator had not responded. Non-responding coordinators received an email reminder (included at the end of this appendix) one week after the initial email was sent. Two more phone calls were placed following this reminder email. Following an additional week of non-response, a second reminder email was sent to each coordinator. Three days later, if a coordinator had still not responded, the school principal was contacted and asked to either encourage the current coordinator to respond or to consider designating someone new to serve in this capacity.

Table B-1 summarizes the slot response rate by stratum. A total of 41 slots were closed because the primary school in the slot was ineligible, due to either being closed, not having the appropriate grade levels, or being merged with another school to create a new school. In total, 1,273 schools chose to participate, filling 65 percent of the remaining 1,959 slots.

Table B-1
Percentage of Slots Filled, by Stratum

	STRATUM 1	STRATUM 2	STRATUM 3	TOTAL
Response Rate	66%	65%	64%	65%
Participated	661	311	301	1,273
Non-Response	348	166	172	686
Ineligible	29	3	9	41
TOTAL	1,038	480	482	2,000

The School Coordinator Questionnaire was programmed to check for the accuracy of certain information as it was submitted. For instance, the survey checked whether student enrollment overall matched student enrollment by race/ethnicity. Coordinators were asked to correct any mismatches before proceeding with the survey.

The teacher lists resulted in a file of 23,020 teachers. From this frame, a sample of 9,939 science, mathematics, and computer science teachers was drawn. For Stratum 1 schools, nine science and mathematics teachers were sampled. In Stratum 2 schools, eight science and mathematics teachers were sampled. In Stratum 3 schools, seven science and mathematics teachers were sampled. In all schools containing any grade 9–12, all computer science teachers were sampled, as their prevalence much lower than science and mathematics teachers. The number of teachers sampled per school ranged from 1 to 9, with a mean of 7.8 teachers and a median of 8. Teachers were sampled on a rolling basis so that late responders to the pre-survey would not delay the main data collection effort.

Teacher and Program Survey Administration

In February 2018, HRI staff mailed program and teacher questionnaire invitations to 30 schools in the sample. (Copies of the surveys are included in Appendix C.) This first small group served as a “soft launch” to test survey administration procedures and the functionality of the data collection website. After two weeks, additional mailings were sent to batches of schools each week as they were recruited until recruitment closed at the beginning of April 2018. The packets contained:

- A personalized cover letter from HRI; and
- A “how to” page explaining how to access the online survey using unique login information.

(Copies of packet materials are included at the end of this appendix.)

Many of the individuals designated to respond for the program questionnaires were teachers and, consequently, had been randomly sampled to complete the teacher questionnaire as well. These individuals received both the teacher questionnaire invitation and the program questionnaire packet (mailed in separate envelopes). Because the program questionnaire requested information that the respondent was not likely to know, the mailing included a paper copy of the survey, so that respondents could gather data before completing the on-line version.

Prompting Respondents

A series of steps was taken to increase the response rate, primarily through email follow-up with school coordinators. The day the packet left HRI, coordinators received an email letting them know to expect the packet. Reminder emails were sent to coordinators at schools with less than 100 percent response at one, two, three, four, five, six, and eight weeks following the survey invitation mailing. (Copies of these emails are included at the end of this appendix.) Two and three weeks after the initial mailing, schools with no respondents received a phone call in addition to the reminder email. At four and at five weeks, any school with less than 50 percent completion received a phone call in addition to the reminder email. In some instances, schools indicated that they had not received survey invitations, in which case materials were re-mailed or re-sent via email.

During the survey administration phase, school coordinators were given access to a real-time, web-based completion status report, which summarized survey response for their school. The report listed the surveys to be completed at the school, the name of the person designated and/or sampled to complete each one, and whether the survey was “Not started,” “Partial,” or “Complete.” Coordinators were asked to use the report to follow up with non-respondents to encourage them to complete their questionnaires.

Response Rates

A total of 3,303 completed school/program questionnaires were received out of the 3,819 possible, for a response rate of 86 percent. A total of 7,600 out of 9,702 eligible teachers²⁷ completed a teacher questionnaire, for a response rate of 78 percent. Tables B-2 and B-3 provide response rate breakdowns for program heads and teachers, respectively.

Table B-2
School/Program Questionnaire Response Rates

	SAMPLED	NON-RESPONSE	COMPLETED	RESPONSE RATE (PERCENT)
Stratum 1	1,983	288	1,695	85
Science	661	131	530	80
Mathematics	661	133	528	80
School Coordinator	661	24	637	96
Stratum 2	933	138	795	85
Science	311	56	255	82
Mathematics	311	64	247	79
School Coordinator	311	18	293	94
Stratum 3	903	90	813	90
Science	301	39	262	87
Mathematics	301	43	258	86
School Coordinator	301	8	293	97
TOTAL	3,819	516	3,303	86

²⁷ During data collection, it was determined that a small number of teachers were not eligible to participate in the study (e.g., after the school submitted its teacher list, the teacher retired, went on maternity leave, changed teaching assignment). These teachers are not included in the denominator when calculating response rates.

Table B-3
Teacher Questionnaire Response Rates

	SAMPLED	NON-RESPONSE	INELIGIBLE	COMPLETED	RESPONSE RATE (PERCENT)
Stratum 1	5,517	1,194	122	4,201	0.78
Science	2,496	569	40	1,887	0.77
Mathematics	2,626	554	45	2,027	0.79
Computer Science	395	71	37	287	0.80
Stratum 2	2,356	522	68	1,766	0.77
Science	1,079	237	34	808	0.77
Mathematics	1,275	285	34	956	0.77
Computer Science	2	0	0	2	1.00
Stratum 3	2,066	377	56	1,633	0.81
Science	1,004	167	35	802	0.83
Mathematics	1,062	210	21	831	0.80
Computer Science	---	---	---	---	---
TOTAL	9,939	2,093	246	7,600	0.78

Data Retrieval

The web-based survey format minimized the need for data retrieval. Critical items were identified during questionnaire development, and the surveys were programmed such that respondents could not proceed without answering these questions. In addition, the surveys were programmed with a number of “soft checks” for potentially incorrect responses. For example, on the School Coordinator Questionnaire, if the number of students in the various demographic categories did not sum to the total enrollment reported, the survey prompted coordinators to double check their numbers.

Data Cleaning

Questionnaire responses were captured through a commercial survey administration website. Data were screened by researchers for missing data, out-of-range answers, and logical inconsistencies. After data-cleaning decisions regarding these issues were made, the data were updated to reflect the decisions. Additional variables needed for analysis were created using data from survey answers and other sources.

The data about instructional materials used (e.g., titles, ISBNs) were used to mine additional information about textbooks (e.g., the publisher) and to resolve inconsistencies in title and author information.

Copies of Materials Referenced in Appendix B

Copies of materials referenced in this appendix follow.

**THE NSSME IS
ENDORSED BY**

American Association
of Chemistry Teachers

American Association
of Physics Teachers

American Federation
of Teachers

American Society for
Engineering Education

Association of
Mathematics Teacher
Educators

Association of Science
Teacher Educators

Association of State
Supervisors of
Mathematics

Computer Science
Teachers Association

Council of State
Science Supervisors

National Association
of Biology Teachers

National Association
of Elementary School
Principals

National Association
of Secondary School
Principals

National Council
of Supervisors of
Mathematics

National Council
of Teachers of
Mathematics

National Earth Science
Teachers Association

National Education
Association

National Science
Education Leadership
Association

National Science
Teachers Association

State Chief Letter

[Month and Year]

[State Chief Name]

[Title]

[Address]

Dear [Dr./Mr./Ms.] [State Chief Last Name]:

I am writing to let you know about the 2018 National Survey of Science and Mathematics Education (2018 NSSME+) being conducted by Horizon Research, Inc. The plus symbol reflects the study's added emphasis on computer science and engineering, two disciplines that are increasingly prominent in discussions about K–12 STEM education and college and career readiness. This study is the sixth in a series dating back to a 1977 study commissioned by the National Science Foundation. The 2018 NSSME+ will assess changes over time and provide current national estimates on essential elements of the STEM education system, which will inform future education policy and practice. A one-page summary of the study is enclosed. The survey has been endorsed by a number of professional organizations, including the American Federation of Teachers, American Society for Engineering Education, the Computer Science Teachers Association, the National Council of Teachers of Mathematics, the National Education Association, and the National Science Teachers Association. These groups are providing input into the content of the questionnaires and will be involved in the dissemination of the study results.

A nationally representative sample of 2,000 schools has been selected to participate. We will begin contacting district superintendents and principals in January 2017 and compiling lists of computer science, engineering, mathematics, and science teachers in the sampled schools in September 2017. Questionnaire administration will begin in November 2017; an average of eight teachers in each sampled school will be asked to complete a 30-minute web-based survey focused on one of the fields of computer science, science, or mathematics instruction. Each teacher will receive a \$25 honorarium. *No data will be collected from students, and there will be no intrusion on the instructional day.* The information collected through the survey will be used only for statistical purposes, and individual districts, schools, and teachers will not be identified.

We are excited to begin this important national study and look forward to working with the sampled schools in [State Name]. If you have any questions about the study, I hope you will not hesitate to contact me by phone (toll free, 877-297-6829) or by email at nssme18@horizon-research.com.

Best regards,

Eric Banilower
Vice President
Principal Investigator for the 2018 NSSME+

Enc.

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National Association
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Principals

National Association
of Secondary School
Principals

National Council
of Supervisors of
Mathematics

National Council
of Teachers of
Mathematics

National Earth Science
Teachers Association

National Education
Association

National Science
Education Leadership
Association

National Science
Teachers Association

District Superintendent Letter

[Month and Year]

Superintendent
[District name]
[District address]

Dear Superintendent:

I am writing to let you know about the 2018 National Survey of Science and Mathematics Education (2018 NSSME+) being conducted by Horizon Research, Inc. The plus symbol reflects the study's added emphasis on computer science and engineering, two disciplines that are increasingly prominent in discussions about K-12 STEM education and college and career readiness. This study is the sixth in a series dating back to a 1977 study commissioned by the National Science Foundation. The 2018 NSSME+ will assess changes over time and provide current data on essential elements of the STEM education system, which will inform future education policy and practice. A one-page summary of the study is enclosed. The survey has been endorsed by a number of professional organizations, including the American Federation of Teachers, the American Society for Engineering Education, the Computer Science Teachers Association, the National Council of Teachers of Mathematics, the National Education Association, and the National Science Teachers Association.

A nationally representative sample of approximately 2,000 schools has been selected to participate, including the school(s) in [District Name] listed on the enclosed page. We plan to begin contacting school principals in the coming weeks to request their participation. In September 2017, we will compile lists of computer science, engineering, mathematics, and science teachers in the sampled schools. We will randomly sample an average of eight teachers from each school. Survey administration will begin in November 2017.

We want to assure you that *no data will be collected from students, and there will be no intrusion on the instructional day*. The information collected through the survey will be used only for statistical purposes, and individual districts, schools, and teachers will not be identified. Each teacher will receive a \$25 honorarium for completing the questionnaire.

Horizon Research, Inc. has contracted with the survey research firm Westat to contact districts and schools for the survey. We are excited to begin this important national study and look forward to working with the sampled schools in [District Name]. If you have any questions about the study, please call Roberta Pike (toll free, 855-462-5831) or email 2018nssme@westat.com.

Best regards,

Eric Banilower
Vice President
Principal Investigator for the 2018 NSSME+

Enc.

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National Association
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National Association
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Principals

National Association
of Secondary School
Principals

National Council
of Supervisors of
Mathematics

National Council
of Teachers of
Mathematics

National Earth Science
Teachers Association

National Education
Association

National Science
Education Leadership
Association

National Science
Teachers Association

Principal Letter

[Month and Year]

Principal
[school name]
[school address]

Dear Principal:

I am writing to let you know that [school name] has been randomly selected to participate in the 2018 National Survey of Science and Mathematics Education (NSSME+). The plus symbol reflects the study's added emphasis on computer science and engineering, two disciplines that are increasingly prominent in discussions about K–12 STEM education and college and career readiness. A total of 2,000 public and private schools and selected K–12 teachers throughout the United States will be involved in the study. The 2018 NSSME+ is the sixth in a series of surveys dating back to a 1977 study commissioned by the National Science Foundation. Conducted by Horizon Research, Inc., the study will assess changes over time and provide current data on essential elements of the STEM education system, which will inform future education policy and practice. A one-page summary of the study is enclosed.

Your district has been informed about this study, which is designed to strictly avoid intrusions on the instructional day and to place minimal burden on principals and teachers. In addition, ***no data will be collected from students***. The information collected through the survey will be used only for statistical purposes, and individual districts, schools, and teachers will not be identified.

At this time, we are asking that you designate a school coordinator within the next three weeks. The coordinator will receive a stipend of at least \$100, and up to \$200, to facilitate the study within the school. In September 2017, we will ask the coordinator to provide a list of teachers at the school whose assignment includes computer science, engineering, mathematics, or science. Using this list, we will randomly select an average of eight teachers per school to complete the survey. In November 2017, we will begin administering the school and teacher questionnaires and ask the coordinator to facilitate communication with sampled teachers. Teachers will have the option of completing a web or paper version of the questionnaire, which is expected to take about 30 minutes to complete. Each teacher will receive a \$25 honorarium for completing the survey. **(See the enclosed page for instructions on designating a coordinator.)**

Your participation is voluntary but very important and greatly appreciated. Because your school is one of a small sample selected for this survey, your cooperation is critical to make the results of the survey comprehensive, accurate, and timely. Horizon Research, Inc. has contracted with the survey research firm Westat to contact districts and schools for the survey. If you have any questions about the study, please call Roberta Pike (toll free, 855-462-5831) or email 2018nssme@westat.com.

Best regards,

Eric Banilower
Vice President
Principal Investigator for the 2018 NSSME+

Enc.

Study Description

In response to numerous requests for information regarding the status of K–12 STEM education in the United States, Horizon Research, Inc. is conducting the 2018 National Survey of Science and Mathematics Education (NSSME+). The plus symbol reflects the study’s added emphasis on computer science and engineering, two disciplines that are increasingly prominent in discussions about K–12 STEM education and college and career readiness. This study is the sixth in a series of surveys dating back to a 1977 study commissioned by the National Science Foundation. The 2018 NSSME+ will assess changes over time and provide current data on essential elements of the STEM education system, data that will inform future education policy and practice.

Focus of the Study

The study will address the following research questions:

1. To what extent do computer science, engineering, mathematics, and science instruction reflect what is known about effective teaching?
2. What are the characteristics of the computer science/engineering/mathematics/science teaching force in terms of race, gender, age, content background, beliefs about teaching and learning, and perceptions of preparedness?
3. What are the most commonly used textbooks/programs, and how are they used?
4. What influences teachers’ decisions about content and pedagogy?
5. What formal and informal opportunities do computer science/engineering/mathematics/science teachers have for ongoing development of their knowledge and skills?
6. How are resources for computer science/engineering/mathematics/science education, including well-prepared teachers and course offerings, distributed among schools in different types of communities and different socioeconomic levels?

Minimal Burden on Schools

We have designed the study to avoid intrusions on the instructional day and to place minimal burden on principals and teachers. *No data will be collected from students.* The information collected through the survey will be used only for statistical purposes, and individual districts, schools, and teachers will not be identified. Principals will be asked to designate a school coordinator, and the coordinator will receive a stipend to provide lists of teachers and facilitate communication during the data collection phase of the study. Teachers will be asked to fill out a web-based questionnaire, which is expected to take approximately 30 minutes to complete. Each teacher will receive a \$25 stipend for completing the survey.

Timeline

Contact with states, districts, and schools will begin in January 2017, and data collection will take place from September 2017 to May 2018.

Benefit to STEM Education

The 2018 NSSME+ will help monitor trends in key areas, collect data on emerging policy issues, determine how computer science/engineering/mathematics/science teachers compare to teachers overall, and delve deeper in selected areas such as the nature of instruction. The results of the study will inform policy, programmatic decisions, and future education research. In order to reach a broad audience, survey findings will be disseminated through technical reports, research journals, social media, and publications aimed at education practitioner and policymaker audiences.

Coordinator Designation Form

[school ID]
[School Name]
[School Street Address]

We ask that you identify a school coordinator for the NSSME study. The coordinator will receive a stipend of at least \$100 and up to \$200 to facilitate the study within the school.

Please complete and mail this form in the postage-paid envelope provided or submit the information online using the instructions in the box at the bottom of the form. You are welcome to designate yourself or someone else. The contact information you provide will be kept **private and confidential** and will only be used in connection with this study.

1. Enter coordinator information below.

Coordinator's Personal Title: (e.g., Ms. Mrs. Mr. Dr.) _____
 Coordinator's Name (*First*): _____ (*Last*): _____
 Coordinator's Position at school (e.g., Math Dept. Chair, Secretary): _____
 Coordinator's Email: _____
 Coordinator's Phone: _____ Ext. _____

2. Principal Name: (*First*): _____ (*Last*): _____

3. Please verify your school name printed at the top of this form.

School names are from Department of Education files; please consider abbreviations/deviations from the official school name as correct.

- Correct (*Skip to Question 4*)
 Incorrect (*Please answer Questions 3a and 3b below*)

3a. What is the correct school name: _____

3b. Please check the reason(s) for the name change: (*Check all that apply.*)

- School merger or reconfiguration
 New school
 Name change
 Other (specify) _____

4. Please verify your school mailing address printed at the top of this form and enter any corrections below.

Correct street address (*if different than above*): _____

Correct mailing city: _____ State: _____ ZIP: _____

<p>TO RETURN COMPLETED FORM BY MAIL OR FAX:</p> <p>By Mail <u>use enclosed envelope</u> or send to: Westat 1600 Research Blvd, RB 3103 Rockville, Maryland 20850-3129</p> <p>By Fax: 800-254-0984</p>	<p>OR</p> <p>TO DESIGNATE COORDINATOR ON THE WEB:</p> <p>Use the URL, Username, and Password below: URL: http://tiny.cc/CoordForm Username: [username] Password: [password]</p>
<p>For Questions: Call Rene Walker at 855-462-5831 or email 2018nssme@westat.com</p>	

E-mail Message to School Coordinator

Dear [title] [lastname]:

Welcome to the [2018 National Survey of Science and Mathematics Education \(NSSME+\)](#)!

Thank you in advance for serving as the school coordinator for [school name]. [IF COORD IS NOT PRINCIPAL: Our records show that your principal, [principal name], designated you for this role.] **Coordinators will receive up to \$220** for providing information about the school and for facilitating communication with teachers. You can read a brief description of the coordinator role [here](#).

Within the next week, please:

- 1) Complete the [Teacher Listing Form](#) for your school ([Link to instructions](#)); and
- 2) Complete [a questionnaire about the school](#) ([Link to preview](#)).

We will send you a check for \$100 (the first installment of your honorarium) after you complete these two tasks.

I will follow up with you by phone to make sure you received this email and to see if you have any questions.

Please don't hesitate to contact me by email ([staff email]) or by phone Monday through Friday between 8:30 AM and 5:00 PM Eastern (toll free, 877-297-6829 ext. [staff extension]). I look forward to working with you on this important national study of STEM education.

[staff name]
Horizon Research, Inc.
326 Cloister Court
Chapel Hill, NC 27514
877-297-6829 (toll-free) ext. [staff extension]
www.horizon-research.com

Reminder E-mail Message to School Coordinator

Dear [title] [last name]:

I recently contacted you about providing information for your school, [school name], for the 2018 National Survey of Science and Mathematics Education. This is a gentle reminder to please visit the links below and complete the following tasks:

- 1) Complete an online form (see below) listing all the teachers in your school who teach computer science, mathematics, science, and/or engineering (we will use this list to randomly sample an average of eight teachers per school to complete the teacher questionnaire later in the school year); and designate individuals to complete the Mathematics Program Questionnaire and the Science Program Questionnaire; and
- 2) Complete a questionnaire about the school.

Please use these links to complete the tasks. If you have started but not yet completed these tasks, the links should take you to where you left off.

1) [\[unique link to Teacher Listing Form\]](#)

You may find it useful to have a staff directory or roster on hand.

2) [\[unique link to School Coordinator Questionnaire\]](#)

We recommend that you first download the preview version so that you can gather the necessary information: [Link to preview](#)

We ask that you provide this information within the next week. You will receive a check for \$100 within four weeks of completion.

Please don't hesitate to contact me by email (nssme18@horizon-research.com) or by phone Monday through Friday between 8:30 AM and 5:00 PM EST (toll free, 877-297-6829). I look forward to working with you on this important national study.

[staff name]

Horizon Research, Inc.

326 Cloister Court

Chapel Hill, NC 27514

877-297-6829 (toll-free) ext. [staff extension]

www.horizon-research.com

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Computer Science
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Council of State
Science Supervisors

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of Supervisors of
Mathematics

National Council
of Teachers of
Mathematics

National Earth Science
Teachers Association

National Education
Association

National Science
Education Leadership
Association

National Science
Teachers Association

Program Questionnaire Letter

[Month and Year]

[first and last name]

[school name]

[school address]

Re: NSSME+ [Mathematics/Science] **Program** Questionnaire

Dear Colleague:

As you may know, [school name] has agreed to participate in the **2018 National Survey of Science and Mathematics Education (NSSME+)**, the sixth in a series of studies initiated in 1977. Your school has designated you as someone able to answer questions about the **[mathematics/science] program** at your school. You will receive a \$15 honorarium for completing the survey.

The NSSME+ is being conducted by Horizon Research, Inc. and Westat, Inc. and is endorsed by numerous organizations, including the [National Council of Teachers of Mathematics, the Association of State Supervisors of Mathematics/ National Science Teachers Association, the Council of State Science Supervisors], the American Federation of Teachers, and the National Education Association. Your responses, combined with those from approximately 1,500 other schools throughout the United States, will be used to inform policymakers about issues affecting computer science, mathematics, and science teachers. All respondent identities will be kept strictly confidential; data will be reported only in aggregate form, such as by grade level or region of the country, and no information identifying individual states, districts, schools, or teachers will be released. You can visit <https://tinyurl.com/NSSME2018> for more information about the study.

The [Mathematics/Science] Program questionnaire has general questions about the instructional objectives and course offerings at your school. Because of the study's importance, we ask that you complete the survey in the next two weeks. ***The [Mathematics/Science] Program questionnaire is web-based; please follow the instructions on the enclosed page to access it.*** It should take only about 20–30 minutes to complete.

If you have any questions about the study, please email [staff name] at [staff email] or call (toll free) [staff phone number and extension] Monday - Friday, between 8:30 a.m. and 5:00 p.m. Eastern Time.

Sincerely,

Eric Banilower
Vice President
Principal Investigator for the 2018 NSSME+

Instructions Page for Accessing the Program Questionnaire

HOW TO COMPLETE THE 2018 NSSME+ [MATHEMATICS/SCIENCE] PROGRAM QUESTIONNAIRE

[first and last name]

1. We have enclosed a preview of the web-based questionnaire. We recommend that you review it and gather the needed information prior to accessing the web-based questionnaire.
2. Please visit the following website to begin the questionnaire:

Website: www.2018nssme.org

Username: [unique username]

Password: [unique password]

If you have problems accessing the questionnaire or experience technical difficulties completing it, please email [staff name] at [staff email] or call (toll free, [staff phone number and extension]) between 8:30 a.m. and 5:00 p.m. Eastern Time.

Thank you for participating in the 2018 NSSME+!

**THE NSSME IS
ENDORSED BY**

American Association
of Chemistry Teachers

American Association
of Physics Teachers

American Federation
of Teachers

American Society for
Engineering Education

Association of
Mathematics Teacher
Educators

Association of Science
Teacher Educators

Association of State
Supervisors of
Mathematics

Computer Science
Teachers Association

Council of State
Science Supervisors

National Association
of Biology Teachers

National Association
of Elementary School
Principals

National Association
of Secondary School
Principals

National Council
of Supervisors of
Mathematics

National Council
of Teachers of
Mathematics

National Earth Science
Teachers Association

National Education
Association

National Science
Education Leadership
Association

National Science
Teachers Association

Teacher Questionnaire Letter

[Month and Year]

[first and last name]

[school name]

[school address]

Re: NSSME+ [Computer Science/Mathematics/Science] **Teacher** Questionnaire

Dear Colleague:

As you may know, [school name] has agreed to participate in the **2018 National Survey of Science and Mathematics Education (NSSME+)**, the sixth in a series of studies initiated in 1977. Working with [school coordinator first and last name], we compiled a list of all teachers of computer science, mathematics, and science at your school. You were randomly selected from this list to respond about your **[computer science/mathematics/science] instruction**. You will receive a \$25 honorarium for completing the survey.

The NSSME+ is being conducted by Horizon Research, Inc. and Westat, Inc. and is endorsed by numerous organizations, including the [Computer Science Teachers Association/National Council of Teachers of Mathematics, the Association of State Supervisors of Mathematics/ National Science Teachers Association, the Council of State Science Supervisors], the American Federation of Teachers, and the National Education Association. Your responses, combined with those from approximately 1,500 other schools throughout the United States, will be used to inform policymakers about issues affecting computer science, mathematics, and science teachers. All respondent identities will be kept strictly confidential; data will be reported only in aggregate form, such as by grade level or region of the country, and no information identifying individual states, districts, schools, or teachers will be released. You can visit <https://tinyurl.com/NSSME2018> for more information about the study.

We realize that you are very busy, and we have tried to minimize the burden of responding by asking only the most important questions. Because of the study's importance, we ask that you complete the survey in the next two weeks. ***The 2018 NSSME+ is a web-based questionnaire; please follow the instructions on the enclosed page to access it.*** We anticipate most teachers will need 30–40 minutes to complete the questionnaire.

If you have any questions about the study, please email [staff name] at [staff email] or call (toll free) [staff phone number and extension] Monday - Friday, between 8:30 a.m. and 5:00 p.m. Eastern Time.

Sincerely,

Eric Banilower
Vice President
Principal Investigator for the 2018 NSSME+

Instructions Page for Accessing the Teacher Questionnaire

**HOW TO COMPLETE THE 2018 NSSME+
[COMPUTER SCIENCE/MATHEMATICS/SCIENCE] TEACHER
QUESTIONNAIRE**

[first and last name]

NOTE: If possible, please complete the questionnaire where you have access to the instructional materials you use in your computer science class(es).

1. Please visit the following website to begin the questionnaire:

Website: www.2018nssme.org

Username: [unique username]

Password: [unique password]

2. The first few questions ask for information to verify that you are eligible to complete the questionnaire. If you are not eligible, the questionnaire will let you know immediately and not ask you to continue answering questions. (Please note that we cannot provide an honorarium to teachers who are not eligible to complete the questionnaire.)

If you have problems accessing the questionnaire or experience technical difficulties completing it, please email [staff name] at [staff email] or call (toll free, [staff phone number and extension]) between 8:30 a.m. and 5:00 p.m. Eastern Time.

Thank you for participating in the 2018 NSSME+!

E-mail Message Alerting School Coordinator to Expect Package

Dear [title] [last name]:

Thank you again for participating in the 2018 National Survey of Science and Mathematics Education (NSSME+). This email is to let you know that we have sent invitation letters (via US mail) to the individuals that you selected to complete the program questionnaires and to the teachers who have been randomly sampled to complete a teacher questionnaire. (The envelopes look like the image below my name.) These letters should arrive at [school name] within the next week. In addition, we will be sending you a packet containing duplicate letters. Please keep these letters and distribute if a teacher does not receive or misplaces his or her letter.

When you click [here](#), you will be prompted to enter a username and password unique to you:

Username: [unique username]

Password: [unique password]

Logging in will take you to a coordinator menu that lists everyone who has been selected to complete a questionnaire and their completion status. **Please tell these individuals to expect a letter from NSSME so they don't throw the letter away.**

We have asked individuals to complete questionnaires within two weeks. We will ask that you follow up with non-responders to encourage them to complete their survey.

The questionnaire invitation letters we sent include unique usernames and passwords for each of the selected individuals. Please note that individuals participating in more than one survey will receive multiple letters, with unique login information for each survey. If respondents lose their login information, you can find their username and password on your coordinator menu.

Please do **not** reassign login information to another teacher. If you do, we will not be able to use the data, and the individual will not be eligible for an honorarium.

As you may recall, you will receive \$10 for each completed questionnaire (including both program and teacher). Individuals who complete the teacher questionnaire will receive a \$25 honorarium, and those who complete the program questionnaire will receive a \$15 honorarium. Checks will be mailed within four weeks of completing the questionnaire.

I hope you will not hesitate to contact me by email [staff email] or by phone Monday through Friday between 8:30 AM and 5:00 PM EST (toll free, staff phone number and extension). I look forward to working with you on this important national study.

[staff name]



326 CLOISTER COURT, CHAPEL HILL, NC 27514-2296

Horizon Research, Inc.
326 Cloister Court
Chapel Hill, NC 27514
877-297-6829 (toll-free)
www.horizon-research.com

Reminder E-mail to Coordinators with Response Rates < 100 Percent

Dear [title] [last name]:

Recently, we emailed to let you know that we've started administering surveys for the 2018 National Survey of Science and Mathematics Education. On [mailing date], we sent a letter (via US mail) to each sampled teacher, inviting them to complete the surveys within two weeks. The letters should have arrived by now. (The envelopes look like the image below my name.) If they haven't arrived, would you please let me know in case we need to re-mail them.

Please log on to <http://www.2018nssme.org/> with your coordinator login credentials to see which individuals should have received the letter.

Username: [unique username]

Password: [unique password]

When you log on, you will see a "completion status report" listing all individuals and their survey completion status. **Please encourage those who have not completed the survey to log on and respond as soon as possible.**

Please do **not** reassign login information to another teacher. If you do, we will not be able to use the data, and the individual will not be eligible for an honorarium.

You will receive \$10 for each completed questionnaire (including both program and teacher). Individuals who complete the teacher questionnaire will receive a \$25 honorarium; those who complete the program questionnaire will receive \$15. We will mail checks within four weeks of receiving an individual's responses.

Please do not hesitate to contact me with any questions or concerns. Thank you very much for your help.

[staff name]



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Teacher Listing Form Instructions

On this form, you will enter all K–12 teachers in this school who are expected to teach computer science, mathematics, science, and/or engineering in the spring of 2018, regardless of how much instructional time they will devote to these subjects—only these teachers are *eligible* for this study. You will also designate what subjects/courses they will be teaching.

1. *Do not include* pre-Kindergarten teachers, teacher assistants, or teachers responsible only for special education or “pull-out” classes for remediation or enrichment of students who also receive science/mathematics instruction from the regular classroom teacher. These teachers are *ineligible* for the study.
2. For the purposes of this study, *the following are not considered computer science, mathematics, science or engineering courses:* Health, Hygiene, Technology Education, Business, Career-technical education (CTE) courses that cover such things as automotive repair or audio/video production.

The following table shows the type of information you will be asked to provide (see the following page for definitions of these categories):

			SELF-CONTAINED				NOT SELF-CONTAINED					
TEACHER	FIRST	LAST	COMPUTER SCIENCE	ENGINEERING	MATHEMATICS	SCIENCE	HIGH SCHOOL PHYSICS OR CHEMISTRY	OTHER SCIENCE	ENGINEERING	HIGH SCHOOL CALCULUS OR ADVANCED MATHEMATICS	OTHER MATHEMATICS	COMPUTER SCIENCE
1	John	Smith			X	X						
2	Maria	Lopez					X	X				
3	Sarah	Baker							X	X		
....												
N												

If you are not sure which teachers to include on this form, please email nssme18@horizon-research.com or call 877-297-6829 (toll free) 8:30 AM to 5:00 PM Eastern before proceeding.

Important Terms

Self-contained vs. Not Self-contained

A *self-contained* teacher teaches multiple subjects to a single class of students all or most of the day. Elementary teachers often are self-contained. A teacher who is *not self-contained* (sometimes called “departmentalized”) teaches computer science, mathematics, science and/or engineering (and perhaps other subjects) to multiple classes of students all or most of the day. Middle and high school teachers typically are *not self-contained*.

High School Calculus or Advanced Mathematics

This category includes such courses as: Pre-Calculus, Calculus, Algebra 3, Analytic Geometry, Trigonometry, Math IV, and any other College Prep Senior Math with Algebra 2/Math 3 as a prerequisite.

Other Mathematic

This category includes such courses as: General Math, Basic Math, Algebra 1, Algebra 2, Geometry, Math 1-3, Integrated/Unified Math 1-3, and 7th grade math.

High School Physics or Chemistry

This category includes such courses as: First-year Chemistry, Advanced Chemistry, Advanced Placement Chemistry, Conceptual Physics, Physics I, Advanced Physics, and IB Physics.

Other Science

This category includes such courses as: Biology, AP Biology, Earth Science, Physical Science, Integrated Science, General Science, and 7th grade science.

Engineering

This category includes such courses as: Engineering, Engineering Design, Principles of Engineering, Technological Systems, and Technology and Society.

Computer Science

This category includes such courses as: Computer Literacy, Computer Science Discoveries, Exploring computer science, Computer Science Essentials, Introductory Programming, AP/IB Computer Science.

Teacher Listing Form

On the next several screens, you will be asked to enter the names of all computer science, mathematics, science, and engineering teachers in your school. Additionally, you will indicate if each person is a self-contained teacher¹ and the subjects s/he teaches. We will use this teacher list to randomly select a sample of teachers to receive a questionnaire.

Before clicking "Next", it is important that you view and print these [instructions](#) (The instructions are in PDF format, which requires Adobe Acrobat Reader. If you don't already have Acrobat Reader, you can download it for free from [Adobe's website](#).)

1. What grades are included in this school?

(Select all grades served by this school, regardless of whether any students are currently enrolled in each grade.)

This school is ungraded

Pre-K

K

1st

2nd

3rd

4th

5th

6th

7th

8th

9th

10th

11th

12th

¹ Self-contained teachers are typically elementary teachers. A self-contained teacher teaches multiple subjects to a single class of students all or most of the day.

6. *[If a teacher teaches CS, either self-contained or not self-contained]*

You indicated that *[First and Last Name]* will teach computer science.

At what grade level are the computer science classes s/he will teach in spring 2018?

<input type="checkbox"/>	K-5
<input type="checkbox"/>	6-8
<input type="checkbox"/>	9-12

7. Do any of the computer science classes s/he will teach in spring 2018 teach programming *[or have programming as a prerequisite (Shown if school includes grades 6-12)]*?

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

Mathematics Program Questionnaire

Please designate someone to complete the Mathematics Program Questionnaire. If possible, this questionnaire should be completed by the mathematics department chair or a mathematics lead teacher. The person completing this questionnaire should have a broad understanding of mathematics instruction within your school. You may select someone from the list below, or select "other" and enter a new name.

8. **MATHEMATICS** Program Questionnaire Designee:

[List of all teachers and coordinator, principal]

- [Coordinator Name]
- [Principal Name]
- [Teacher 1]
-
- [Teacher X]
- Other (please specify below):

Title (Dr., Mr., Mrs., etc.): _____

First name: _____

Last name: _____

Science Program Questionnaire

Please designate someone to complete the Science Program Questionnaire. If possible, this questionnaire should be completed by the science department chair or a science lead teacher. The person completing this questionnaire should have a broad understanding of science instruction within your school. You may select someone from the list below, or select "other" and enter a new name.

9. SCIENCE Program Questionnaire Designee:

[List of all teachers and coordinator, principal]

- [Coordinator Name]
- [Principal Name]
- [Teacher 1]
-
- [Teacher X]
- Other (please specify below):

Title (Dr., Mr., Mrs., etc.): _____

First name: _____

Last name: _____

Thank you for completing the Teacher Listing Form. Your responses have been successfully submitted. **Please remember to complete the School Questionnaire as soon as possible if you have not already** (the link is in the email we sent previously).

If you have any questions, please contact us by email at nssme18@horizon-research.com.

You should receive a confirmation email verifying your responses were received (check your spam folder if you do not see it).