



APPENDIX C



Pre-Data Collection Communication

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Endorsed By:

- American Association of Physics Teachers
- American Chemical Society, Education Division
- American Federation of Teachers
- Association of Mathematics Teacher Educators
- Association of State Supervisors of Mathematics
- Center for the Study of Mathematics Curriculum
- Council of State Science Supervisors
- National Association of Biology Teachers
- National Association of Elementary School Principals
- National Association of Secondary School Principals
- National Catholic Education Association
- National Council of Supervisors of Mathematics
- National Council of Teachers of Mathematics
- National Earth Science Teachers Association
- National Education Association
- National School Boards Association
- National Science Education Leadership Association
- National Science Teachers Association

State Chief Letter

[Date]

[State chief name]

[Title]

[Address]

Dear [Mr./Ms.] [State Chief last name]:

I am writing to let you know about the 2012 National Survey of Science and Mathematics Education being conducted by Horizon Research, Inc. This study is the fifth in a series dating back to a 1977 study commissioned by the National Science Foundation. The 2012 National Survey will assess changes over time and provide current national estimates on essential elements of the science and mathematics 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 Association of State Supervisors of Mathematics and the Council of State Science Supervisors; these groups are providing input into the content of the questionnaire 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 for permission in January 2011 and compiling lists of mathematics and science teachers in the sampled schools in September 2011. Questionnaire administration will begin in November 2011; a random sample of five teachers in each sampled school will be asked to complete a 30–40 minute web-based survey focused on either mathematics or science 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.*

We are excited to begin this important national study and look forward to working with the sampled schools in «Statename». 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 email (nssme@horizon-research.com).

Best regards,

Iris R. Weiss
President
Principal Investigator for the 2012 NSSME

Endorsed By:

- American Association of Physics Teachers
- American Chemical Society, Education Division
- American Federation of Teachers
- Association of Mathematics Teacher Educators
- Association of State Supervisors of Mathematics
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- National Education Association
- National School Boards Association
- National Science Education Leadership Association
- National Science Teachers Association

District Superintendent Letter

[Date]

[Superintendent name]

[Professional Title]

[District name]

[District address]

Dear [Mr./Ms.] [principal last name] (or current Superintendent):

I am writing to inform you about the 2012 National Survey of Science and Mathematics Education being conducted by Horizon Research, Inc. This study is the fifth in a series dating back to a 1977 study commissioned by the National Science Foundation. The 2012 National Survey will assess change over time and provide current data on essential elements of the science and mathematics education system, which will inform future education policy and practice. A one-page summary of the study is enclosed.

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 and compiling lists of mathematics and science teachers in the sampled schools in September 2011. We will randomly sample approximately five teachers from each school. Data collection with teachers will begin in December 2011.

We want to assure you that *no data will be collected from students, and there will be no intrusion on the instructional day*. Each teacher will receive a \$25 honorarium for completing the questionnaire.

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 [Staff Assigned] (toll free, 877-297-6829) or email (nssme@horizon-research.com).

Best regards,

Kiira Campbell

Research Associate

2012 National Survey of Science and Mathematics Education

Endorsed By:

- American Association of Physics Teachers
- American Chemical Society, Education Division
- American Federation of Teachers
- Association of Mathematics Teacher Educators
- Association of State Supervisors of Mathematics
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- National Association of Elementary School Principals
- National Association of Secondary School Principals
- National Catholic Education Association
- National Council of Supervisors of Mathematics
- National Council of Teachers of Mathematics
- National Earth Science Teachers Association
- National Education Association
- National School Boards Association
- National Science Education Leadership Association
- National Science Teachers Association

Principal Letter

[Date]

[principal name]
Principal
[school name]
[school address]

Dear [Mr./Ms.] [principal last name] (or current Principal):

I am writing to let you know that [school name] has been randomly selected to participate in the 2012 National Survey of Science and Mathematics Education (NSSME). A total of 2,000 public and private schools and 10,000 K–12 teachers throughout the United States will be involved in the study. The 2012 NSSME is the fifth in a series of surveys dating back to a 1977 study commissioned by the National Science Foundation. The 2012 NSSME, conducted by Horizon Research, Inc. under the direction of Dr. Iris Weiss, will assess changes over time and provide current data on essential elements of the science and mathematics education system. A one-page summary of the study is enclosed.

We have designed the study 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***. Approximately five teachers per school will be asked to complete a web-based questionnaire, which we anticipate will take 30–40 minutes. (Teachers will have the option of requesting a paper-and-pencil version of the questionnaire.) Each teacher will receive a \$25 honorarium for completing the survey.

At this time, we are asking you to designate a school coordinator, who will receive a stipend of up to \$200 to provide a list of science and mathematics teachers and facilitate communication with sampled teachers during the data collection phase of the study. (See instructions for designating a coordinator on the enclosed page.) In September 2011, we will ask the coordinator to list all teachers at the school whose assignment includes mathematics or science. Using this list, we will randomly select teachers to complete the questionnaire. In November 2011, we will begin administering the web-based questionnaires.

Your participation is voluntary, but very important and greatly appreciated. If you have any questions about the study, please call me (toll free, 877-297-6829) or email (nssme@horizon-research.com).

Sincerely,

Kiira Campbell
Research Associate

Enc.

2012 National Survey of Science and Mathematics Education Study Description

In response to numerous requests for information regarding the status of science and mathematics education in the United States, Horizon Research, Inc. is conducting the 2012 National Survey of Science and Mathematics Education (NSSME). This study is the fifth in a series of surveys dating back to a 1977 study commissioned by the National Science Foundation. The 2012 NSSME will assess changes over time and provide current data on essential elements of the science and mathematics education system 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 science and mathematics instruction and ongoing assessment mirror current understanding of learning?
2. What influences teachers' decisions about content and pedagogy?
3. What are the characteristics of the mathematics/science teaching force in terms of race, gender, age, content background, beliefs about teaching and learning, and perceptions of preparedness?
4. What are the most commonly used textbooks/programs, and how are they used?
5. What formal and informal opportunities do mathematics/science teachers have for ongoing development of their knowledge and skills?
6. How are resources for mathematics/science education, including well-prepared teachers and course offerings, distributed among schools in different types of communities and different socioeconomic levels?

In order to answer these questions, the study will collect survey information on teacher content background and demographics, textbook/program usage; science and mathematics course offerings and enrollments, instructional strategies, formative assessment, and the influences of particular policies such as the No Child Left Behind legislation on science and mathematics education. No information that would identify a teacher, school, district, or state will be released or reported.

Minimal Burden on Principals and Teachers

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*. Principals will designate a school coordinator, who will receive a stipend of up to \$200 to provide lists of teachers, facilitate communication during the data collection phase of the study, and identify individuals to complete program-level questionnaires for science and mathematics. Teachers (approximately five per school) will be asked to fill out a web-based questionnaire, which we anticipate will take most teachers 30–40 minutes to complete. They will have the option of requesting a paper-and-pencil version of the questionnaire. Each teacher will receive a \$25 stipend for completing the survey.

Timeline

Contact with schools will begin in February 2011, and teacher data collection will take place from September 2011 to May 2012.

Benefit to Science and Mathematics Education

The 2012 NSSME will help monitor trends in key areas, collect data on emerging policy issues, determine how science and mathematics 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, and publications aimed at education practitioners and policy makers.

How to Designate a School Coordinator

[school name]

After you have designated a school coordinator for the 2012 National Survey of Science and Mathematics Education (NSSME) and confirmed his or her willingness to serve in this capacity, please visit the following website to provide the individual's contact information:

www.nssme.org

The site will prompt you for a username and password.

Username: [username]

Password: [password]

If you have problems accessing the site or completing the form, please call me (toll free, 877-297-6829 ext.) or email (nssme@horizon-research.com).

Thank you for participating in the 2012 National Survey of Science and Mathematics Education!

E-mail Message to School Coordinator

Dear [title] [lastname]:

As you may recall, [school name] was selected to participate in the 2012 National Survey of Science and Mathematics Education (NSSME). You can read about the study at www.horizon-research.com/2012nssme. Please print this email message and keep it handy, as it includes several important details about the study.

According to our records, you were designated as the school coordinator for the study. Coordinators will receive up to \$200 for providing information about the school and for facilitating communication with teachers. This honorarium will come to you in several installments.

Within the next two weeks, we ask that you do three things: 1) provide a list of all the teachers in your school who teach mathematics, science, and/or engineering (We will use this list to randomly sample approximately five teachers to complete the teacher questionnaire later in the school year.); 2) designate individuals to complete the Mathematics Program Questionnaire and the Science Program Questionnaire; and 3) complete a brief questionnaire about the school. We will send you a check for \$100 (the first installment of your honorarium) within four weeks of completing these three tasks.

The form for providing this information is online. To access this form and instructions for completing it, please click the link below or copy and paste it into your web browser. Please make note of your user name and password (password is case-sensitive).

www.nssme.org

user name: [username]

password: [password]

Sampled teachers will receive a \$25 honorarium for completing the teacher questionnaire. We will ask you to communicate with teachers and encourage them to respond to the questionnaire. At the conclusion of data collection, you will receive \$10 for each completed teacher questionnaire. Individuals who complete the Mathematics and/or Science Program Questionnaires will receive a \$15 honorarium, and you will receive an additional \$10 for each of these completed questionnaires.

I hope you will not hesitate to contact me by email [staff email address] 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]

Teacher Listing Form

2012 National Survey of Science and Mathematics Education

[School Name]

Coordinator: [Coordinator Name]

You should have received, or will receive shortly, an email explaining the responsibilities of the study coordinator. Please refer to that email before continuing.

Our records show [Coordinator Name] as the coordinator for this school. If this has changed, please contact Kiira Campbell, via email at nssme@horizon-research.com or (toll free) 877-297-6829 ext. 206 before completing this form so that we can note the change.

Throughout this form, you can hover the cursor over highlighted text¹ for definitions and examples.

On the next several screens, you will be asked to enter the names of all mathematics, science, and engineering teachers in your school. Additionally, you will indicate whether each person is a self-contained teacher,² and the subjects s/he teaches. We will use this teacher list to randomly select a sample of approximately seven (7) teachers to receive a questionnaire.

Before clicking “Continue,” it is important that you view and print this [one page set of instructions](#)³. (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](#).)

[Continue]

Next Screen

Responses are required for all items on this page.

Do you [Coordinator Name] teach one or more classes of K–12 mathematics, science, and/or engineering⁴ at this school during the 2011-2012 school year?

- Yes
- No

Does the principal [Principal Name] teach one or more classes of K–12 mathematics, science, and/or engineering at this school during the 2011–2012 school year?

- Yes
- No

¹ The content of hover text is included as footnotes. For example, this hover text said “Definitions and Examples.”

² A *self-contained* teacher teaches multiple subjects to a single class of students all or most of the day.

³ One page instructions were included as a link to a PDF in the online form. See “Teacher Listing Form Instructions” for the instructions page.

⁴ Includes K–12 teachers expected to teach mathematics, science, and/or engineering regardless of how much instructional time they devote to these subjects. It does **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.

What grades are included in this school?

- Pre-K
- K
- 1st
- 2nd
- 3rd
- 4th
- 5th
- 6th
- 7th
- 8th
- 9th
- 10th
- 11th
- 12th

[Save and Continue]

Next Screen

Teacher Listing Form

You indicated that you are responsible for teaching K–12 mathematics, science, and/or engineering during the 2011-2012 school year. Please indicate the type(s) of class(es) you teach.

Teacher Name

Personal title: [**Personal title**]

First name: [**First name**]

Last name: [**Last name**]

Teaching Responsibilities

Self-contained (any grade), select all that apply:

Typically, these are elementary teachers. A self-contained teacher teaches multiple subjects to a single class of students all or most of the day.

- Mathematics
- Science

Not self-contained (often referred to as "departmentalized"), select all that apply:
Typically, these are middle and high-school teachers. A teacher who is not self-contained teaches mathematics, science and/or engineering (and perhaps other subjects) to several different classes of students all or most of the day.

- High School Physics or Chemistry⁵
- Other Science⁶
- Engineering⁷
- High School Calculus or Advanced Mathematics⁸
- Other Mathematics⁹

[Save and Continue]

Next Screen

Teacher Listing Form

You indicated that the principal is responsible for teaching K–12 mathematics, science, and/or engineering during the 2011-2012 school year. Please indicate the type(s) of class(es) s/he teaches.

Teacher Name

Personal Title¹⁰: [Blank field for entering personal title]

First name: [Blank field for entering first name]

Last name: [Blank field for entering last name]

Teaching Responsibilities

Self-contained (any grade), select all that apply:

Typically, these are elementary teachers. A self-contained teacher teaches multiple subjects to a single class of students all or most of the day.

- Mathematics
- Science

⁵ This category includes such courses as: First-year Chemistry, Advanced Chemistry, Advanced Placement Chemistry, Physics I and Advanced Physics.

⁶ This category includes such courses as: Biology, Earth Science, Physical Science, Integrated Science, and General Science.

⁷ This category includes such courses as: Engineering and Computer Applications, Engineering Design, Principles of Engineering, Technological Systems, and Technology and Society.

⁸ 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 as a prerequisite.

⁹ This category includes such courses as: General Math, Basic Math, Algebra 1, Algebra 2, Geometry, Integrated Math I-III, and Unified Math I-III.

¹⁰ (For example, Dr., Ms.)

Not self-contained (often referred to as "departmentalized"), select all that apply:
 Typically, these are middle and high-school teachers. A teacher who is not self-contained teaches mathematics, science and/or engineering (and perhaps other subjects) to several different classes of students all or most of the day.

- High School Physics or Chemistry
- Other Science
- Engineering
- High School Calculus or Advanced Mathematics
- Other Mathematics

[Save and Continue]

[Save, all eligible teachers are entered]

Teacher list so far...

Teacher	Self-contained (Any Grades)		NOT Self-contained					Edit
	Mathematics	Science	High School Physics or Chemistry	Other Science	Engineering	High School Calculus or Advanced Mathematics	Other Mathematics	
[Coordinator Name]						X	X	

Next Screen

Teacher Listing Form

Success: Teacher's data were saved

Enter all K–12 teachers **at this school** who are expected to teach mathematics, science, and/or engineering regardless of how much instructional time they devote to these subjects. 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 instructions from the regular class room teacher.

For the purposes of this survey, the following are **not** considered science or mathematics courses: Computer Science, Health, Hygiene, Technology Education, Business, Career-technical education (CTE) courses that cover such things as automotive repair or audio/video production.

Teacher Name

Personal Title: [Blank field for entering personal title]

First name: [Blank field for entering first name]

Last name: [Blank field for entering last name]

Teaching Responsibilities

Self-contained (any grade), select all that apply:

Typically, these are elementary teachers. A self-contained teacher teaches multiple subjects to a single class of students all or most of the day.

- Mathematics
- Science

Not self-contained (often referred to as "departmentalized"), select all that apply:

Typically, these are middle and high-school teachers. A teacher who is not self-contained teaches mathematics, science and/or engineering (and perhaps other subjects) to several different classes of students all or most of the day.

- High School Physics or Chemistry
- Other Science
- Engineering
- High School Calculus or Advanced Mathematics
- Other Mathematics

[Save and Continue]

[Save, all eligible teachers are entered]

Teacher list so far...

Teacher	Self-contained (Any Grades)		NOT Self-contained					
	Mathematics	Science	High School Physics or Chemistry	Other Science	Engineering	High School Calculus or Advanced Mathematics	Other Mathematics	
[Coordinator Name]						X	X	Edit
[Principal Name]			X	X				Edit

Next Screen

Teacher Listing Form

Review and Confirm

You provided information for [Number of teachers] teacher(s) including yourself. Please review.

If the list is correct and complete, click "List is correct. Continue."

If you need to make corrections, click "Make corrections".

Teacher	Self-contained (Any Grades)		NOT Self-contained						
	Mathematics	Science	High School Physics or Chemistry	Other Science	Engineering	High School Calculus or Advanced Mathematics	Other Mathematics		
[Coordinator Name]						X	X	Edit	
[Principal Name]			X	X				Edit	
[Teacher 1]					X			Edit	Delete
[Teacher 2]				X			X	Edit	Delete

[Make Corrections]

[List is correct. Continue.]

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.

Response required.

MATHEMATICS Program Questionnaire Designee:

- [Coordinator Name]
- [Principal Name]
- [Teacher 1]
- [Teacher 2]
- Other (please specify below):

First name: [Blank field for entering first name]

Last name: [Blank field for entering last name]

[Save and Continue]

Next Screen

Science Program Questionnaire

Success: Mathematics Program Questionnaire designation saved.

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.

Response required.

SCIENCE Program Questionnaire Designee:

- [Coordinator Name]
- [Principal Name]
- [Teacher 1]
- [Teacher 2]
- Other (please specify below):

First name: [Blank field for entering first name]

Last name: [Blank field for entering last name]

[Save and Continue]

Teacher Listing Form Instructions

Instructions for Completing the Teacher List

1. *Include* all K–12 teachers who are expected to teach mathematics, science, and/or engineering, regardless of how much instructional time they devote to these subjects. Only these teachers are *eligible* to complete the survey.
2. *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 survey.
3. For the purposes of this study, *the following are not considered science or mathematics courses*: Computer Science, Health, Hygiene, Technology Education, Business, Career-technical education (CTE) courses that cover such things as automotive repair or audio/video production.

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 mathematics, science and/or engineering (and perhaps other subjects) to several different 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 as a prerequisite.

“Other Mathematics”

This category includes such courses as: General Math, Basic Math, Algebra 1, Algebra 2, Geometry, Integrated Math I-III, and Unified Math I-III.

“High School Physics or Chemistry”

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

“Other Science”

This category includes such courses as: Biology, Earth Science, Physical Science, Integrated Science, and General Science.

“Engineering”

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

School Coordinator Questionnaire PREVIEW VERSION

If you make a mistake while completing the web-based questionnaire and are unable to correct it, please email Kiira Campbell at nssme@horizon-research.com or call her toll-free at 877-297-6829.

1. How many students are currently enrolled in each of the following grades in your school?

	Number of Students
Pre-Kindergarten	
Kindergarten	
1 st grade	
2 nd grade	
3 rd grade	
4 th grade	
5 th grade	
6 th grade	
7 th grade	
8 th grade	
9 th grade	
10 th grade	
11 th grade	
12 th grade	
Ungraded	

2. Please indicate the number of students in this school in each of the following categories: (Please count each student only once.)

	Number of Students
American Indian or Alaska Native	
Asian	
Black or African American	
Hispanic/Latino	
Native Hawaiian or Other Pacific Islander	
White	
Two or more races	

3. How many...

	Number
a. students in your school are eligible for free or reduced-price lunch?	
b. students in this school have an Individualized Education Plan (IEP)?	
c. students in your school receive special education services for learning disabilities?	
d. students in your school are classified as English-language learners?	
e. languages other than English are spoken by families of students in this school?	

4. Which of the following best describes your school? Select one. *[Public Schools Only]*

<input type="radio"/>	A regular school (not including magnet or charter school) <i>Skip to Question 7</i>
<input type="radio"/>	A charter school (a school that is in accordance with an enabling state statute, has been granted a charter exempting it from selected state or local rules and regulations)
<input type="radio"/>	A special program school or magnet school (such as a foreign language immersion school)

5. Does your school have a special focus on one or more of the STEM fields: science, technology, engineering, mathematics? Select one. *[Public Schools Only]*

<input type="radio"/>	Yes
<input type="radio"/>	No <i>Skip to Question 7</i>

6. On which of the following is your school's special program or magnet focused? Select all that apply. *[Public Schools Only]*

<input type="checkbox"/>	Engineering.
<input type="checkbox"/>	Mathematics.
<input type="checkbox"/>	Science, including health professions.
<input type="checkbox"/>	Technology, including Tech Prep.

7. Does your school use block scheduling (class periods scheduled to create extended blocks of instructional time) to organize most classes? Select one.

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

8. Does your school have one or more computer labs? Select one.

<input type="radio"/>	Yes
<input type="radio"/>	No <i>Skip to Question 10</i>

9. How many computers are in the computer lab(s) (do not include computers that do not work)? (If there is more than one lab, enter the total across all labs. Do not include computers that do not work.) Select one.

1-5	6-10	11-15	16-20	21-25	26-30	31+
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

10. Does your school have... Select one on each row.

	Yes	No
a. laptop carts available for teachers to use with their classes?	<input type="radio"/>	<input type="radio"/>
b. Wi-Fi?	<input type="radio"/>	<input type="radio"/>

Thank You!

