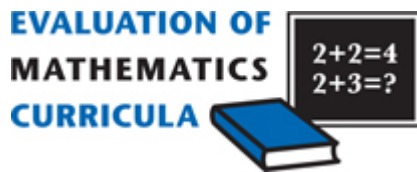


APPENDIX A

**Letter to School Principals Requesting Class Lists
Letter to Teachers and Fall (Baseline) Survey**



P.O. Box 2393
Princeton, NJ 08543-2393
Telephone (609) 799-3535
Fax (609) 799-0005
www.mathematica-mpr.com

Dear Principal,

Thank you for agreeing to participate in the Evaluation of Mathematics Curricula. Mathematica Policy Research, Inc. (MPR), along with RG Research Group and SRI International, is conducting the study for the U.S. Department of Education's Institute of Education Sciences. As part of the study, we develop our student sample from class rosters containing names of all children enrolled in each sampled teacher's mathematics class. Your district has indicated that the most accurate class listings should be obtained from the school.

Your school will be implementing the _____ curriculum in all first grade mathematics classrooms. As you know, each classroom will be observed once during the school year and teachers will be asked to complete questionnaires in the fall and spring. Additionally, student achievement will be measured using the _____ mathematics assessment in the fall and again in the spring.

Enclosed is a list of all teachers who have enrolled in the study. Please check this list to be sure it includes all the teachers who teach first grade mathematics at your school and provide updates as appropriate.

Also, please provide a list of all students in each teacher's math classroom. You may use existing class rosters. For each teacher, please provide a complete list of all students enrolled in his/her math class including:

First Name
Last Name
Gender
Date of Birth
IEP Status or any disability status that should be considered for student testing
NonEnglish Speaker status that should be considered for student testing

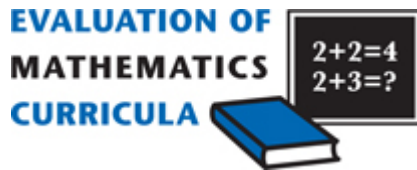
All student information will be kept confidential and used for research purposes only. While your school's participation in this study is voluntary, collecting accurate class lists is essential for building our student sample. As one of about 100 schools in the study, every response is critical. Class lists and updates to our teacher list can be returned to Mathematica Policy Research in the envelop provided.

If you have any questions, please contact the study's survey director Sheila Heaviside at 1-866-869-3187, or by email at sheaviside@mathematica-mpr.com.

Thank you for your help with this important study.

Sincerely,

Roberto Agodini
Study Director



P.O. Box 2393
Princeton, NJ 08543-2393
Telephone (609) 799-3535
Fax (609) 799-0005
www.mathematica-mpr.com

Dear Teacher,

You and your school are participating in the Evaluation of Mathematics Curricula. Mathematica Policy Research, Inc. (MPR), along with RG Research Group and SRI International, is conducting the study for the U.S. Department of Education's Institute of Education Sciences. As part of the study, we are gathering information about your experiences with the curricula you are piloting and training and support you have received, along with some background information about you.

We greatly appreciate your participation in this study, and as part of that participation, ask you to complete the enclosed questionnaire. All of the information that you provide will be kept confidential and used for research purposes only. No one at your school will see your responses, and you will not be identified in any report or presentation. While your participation in this study is voluntary, it is very important that you complete the questionnaire. As one of only a few hundred teachers in the study this year, every response is critical in understanding teachers' classroom experiences. We have enclosed a check for you in appreciation of your participation.

If you have any questions, please contact the study's survey director Sheila Heaviside at 1-866-869-3187, or by email at sheaviside@mathematica-mpr.com.

Thank you for your help with this important study.

Sincerely,

Roberto Agodini
Study Director

TEACHER SURVEY (Fall 2006)

NATIONAL EVALUATION OF ELEMENTARY MATHEMATICS CURRICULA

U.S. DEPARTMENT OF EDUCATION

ATTACH LABEL HERE Teacher ID Teacher Name School ID School Name

IF ABOVE INFORMATION IS INCORRECT,
PLEASE MAKE CORRECTIONS DIRECTLY ON LABEL.

This survey is part of the Evaluation of Elementary Mathematics Curricula, a national evaluation being conducted for the U.S. Department of Education. All information you provide will be kept confidential. While you are not required to respond, your cooperation is needed to make the results of this survey comprehensive, accurate, and timely. Thank you.

Please return the completed form to: 	If you have questions, please contact:
---	---

This survey is authorized by the U.S. Department of Education (P. L. 20 U.S.C. 1221e.1) and the Confidential Information Protection and Statistical Efficiency Act of 2002. These laws require that the survey sponsor treat all information you provide as confidential. The information you provide will be used only for research and statistical purposes by the survey sponsor, their contractors, and collaborating researchers for the purpose of analyzing data and preparing scientific reports and articles. Any information publicly released (such as statistical summaries) will be in a form that does not personally identify you. Your response is voluntary. According to the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless such collection displays a valid OMB number. The OMB control number for this survey is 1850-0813. The time required to complete this survey is estimated to average 30 minutes per response. If you have any comments concerning the accuracy of the time estimate or suggestions for improving this form, please write to: U.S. Department of Education, Washington, DC 20202-4651. If you have comments or concerns about the content of this questionnaire, contact Sheila Heaviside by e-mail [at: sheaviside@mathematica-mpr.com](mailto:sheaviside@mathematica-mpr.com) or at 1-866-869-3187.

OMB NO.: 1850-0813
EXPIRATION DATE: ##/##/200#

TRAINING, RESOURCES, AND SUPPORT FOR TEACHING MATH

F1a. Did you participate in training on how to use the assigned curriculum prior to the start of the school year?

- Yes
 No → SKIP to Question 3

F1b. How many days prior to the start of the school year did you participate in training on how to use the assigned curriculum? Mark (X) only one box.

- Less than a day
 1 day
 2 days
 3 days
 4 days or more

F2. Overall, how well did the training and/or support you received from the publisher prepare you to use the assigned curriculum with your students? Mark (X) only one box.

- Very Well
 Somewhat
 Not at all

F3. To what extent are the following materials from the assigned curriculum available for your use in teaching math? Mark (X) one box for each row.

	Not at all	Materials are shared with other teachers at my school	Materials are dedicated for use with my students
a. Teaching guide or teacher's manual	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Student workbooks or textbooks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Manipulatives	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Supplemental materials recommended by the publisher	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

F4. How well prepared are you to do the following during math instruction?

Mark (X) one box for each row.

	Not prepared	Somewhat prepared	Adequately prepared	Very well prepared
a. Demonstrate mathematical procedures and concepts to students.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Respond to students' mathematical errors.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Ask students to explore a concept or procedure prior to it first being modeled.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Ask students to demonstrate a procedure or explain a concept to other students.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Teach a class in which students use manipulatives.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Teach a class in which small groups of students work on collaborative activities.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. Differentiate instruction for individual students or small groups.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. Allow students to practice math facts using manipulatives, pictures, or diagrams.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

F5. In this item, we are interested in the types of discussions you are prepared to facilitate during math instruction. Please indicate how well prepared you are to do the following.

Mark (X) one box for each row.

	Not prepared	Somewhat prepared	Adequately prepared	Very well prepared
a. Facilitate discussions that allow students to explain their answers.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Facilitate discussions that enable students to offer or share multiple approaches to solving a problem.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Facilitate discussions that enable students to raise mathematical questions and/or discuss mathematical concepts.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Facilitate discussions that enable students to reference other students' ideas in their comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

F6. During the 12 months prior to the start of this school year, have you participated in any professional development activities on the following math topics that were NOT specific to the assigned curriculum (COLUMN A)? If yes, how many hours did you spend on these activities (COLUMN B)? Include courses you have taken for recertification or advanced certification, workshops sponsored by your school or district, conferences, or other training that is relevant to your teaching of math.

For each row, mark (X) one box in Column A. If you answer "Yes," mark (X) one box in Column B for that row.

	COLUMN A: Participation		COLUMN B: Number of hours of participation				
			8 or less	9-16	17-32	33-40	More than 40
a. Mathematics instruction	Yes <input type="checkbox"/>	No <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Content and performance standards in mathematics education	Yes <input type="checkbox"/>	No <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

F7. During the 12 months prior to the start of this school year, what have been the sources of your professional development in math? Mark (X) all that apply.

- Workshops or training provided by your school or district
- Coursework taken towards a credential for teaching
- University coursework in math or math instruction, not including coursework for a credential
- Activities such as conferences or working groups about math
- Other → Please specify: _____
- Did not participate in professional development in math

F8. (Item was deleted. Subsequent item numbers and skip patterns will be revised accordingly.)

MATH INSTRUCTION IN YOUR TARGET CLASS

F9. How many students are currently enrolled in your class that uses the assigned curriculum (hereafter, referred to as your "target" class)?

students

F10. Approximately how many students in your target class are:

- High math achievers
- Average math achievers
- Low math achievers

F11. Approximately how many students in your target class are:

English proficient

Limited English proficient

F12. Approximately how many students in your target class have an Individualized Education Plan (IEP)?

Students with an IEP

F13. On average, how many minutes per week do you spend preparing to teach math to your target class using the assigned curriculum (including lesson planning, grading student work, etc.)?

minutes per week

F14. On average how many days per week do you teach math to your target class?

days per week

F15. For approximately how many minutes each day do you teach math to your target class?

minutes per day

F16. Are you using the assigned curriculum as your core math curriculum?

Yes

No → Please specify the name/publisher of your core curriculum: _____

F17a. Do you use other math curricula in addition to the assigned curriculum?

No → SKIP to Question 18a

Yes → Please specify the *name(s)* and *publisher(s)* of the curricula:

F17b. For what purpose(s) are the curricula specified in Question 17a being used?

Mark (X) all that apply.

Remediation with a small group of students

Remediation with the entire class

Enrichment with a small group of students

Enrichment with the entire class

As a replacement for selected units or lessons in the assigned curriculum

As a supplement to units or lessons in the assigned curriculum

Other → Please specify: _____

F18a. Have you ever used the assigned curriculum in a primary grade (K-3) prior to this school year?

- Yes
 No

F18b. If you taught math in a primary grade (K-3) last year (in 2005-06), please indicate the math curriculum you used. *Mark (X) only one box.*

- I did NOT teach math in a primary grade (K-3) last year. → SKIP to Question 19
 I used the following math curriculum last year (please specify the *name* and *publisher* of the curriculum): _____

F18c. Please indicate the total number of years that you used the curriculum specified in Question 18a.

years

APPROACHES TO TEACHING

F19. Please indicate how strongly you agree or disagree with the following general statements about teaching math. *Mark (X) one box for each row.*

	Strongly disagree	Disagree	Agree	Strongly Agree
a. Whenever students ask how to solve a math problem, teachers should provide a thorough explanation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Formative and multiple assessments are an important means of documenting students' learning.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. It is important that students <i>not</i> have mathematical misconceptions at the end of class.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Students learn from one another when they work together on math problems.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Students should demonstrate mastery of a particular math concept before proceeding to the next concept.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Students learn math best when they share their reasoning about a math problem with other students.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. It is important that teachers observe and listen to how students think about math.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. A math concept is best learned if a concrete example is presented when it is first introduced.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

i.	Teachers should emphasize computational skills.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j.	Teachers should clearly model to students how to solve a type of problem they have never seen before.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k.	Students should primarily work individually in math to ensure that they master skills and are able to work on their own.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

YOUR SCHOOL'S INSTRUCTIONAL CLIMATE

F20a. Is there a math coach or district specialist to assist you in teaching math?

Mark (X) only one box.

- Yes
- No → SKIP to Question 21
- Don't know → SKIP to Question 21

F20b. How accessible to you is a math coach or district specialist? *Mark (X) only one box.*

- Not at all
- Rarely
- Sometimes
- Almost always
- Don't know

F20c. Is the math coach or district specialist knowledgeable about the assigned curriculum you are using? *Mark (X) only one box.*

- Yes
- No
- Don't know

F21. Is there another adult (such as an aide, assistant, volunteer) who assists you when you are teaching math to your target class?

- Yes
- No

F22. This question concerns how teachers interact in your school. Please indicate about how many teachers in your school do each of the following. Mark (X) one box for each row.

	No teachers	Some teachers	Most teachers	All teachers	Don't know
a. Work together to develop curriculum and instructional materials	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Observe each other teaching	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Offer advice or help to each other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Share ideas on teaching	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Promote new or innovative teaching practices	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

F23. Consider the conditions for teaching math in your school. How well does each of the following describe conditions in your school? Mark (X) one box for each row.

	Strongly disagree	Disagree	Agree	Strongly Agree
a. I feel supported by other teachers to try out new ideas in teaching math.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Administrators at this school promote innovations in math education.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Teachers in this school regularly share ideas about math instruction.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. There is a lot of disagreement among teachers about how to teach math.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. I regularly work with other teacher(s) on math curriculum and instruction.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. A specialist in math education regularly works with teachers in this school.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. Most curriculum changes introduced at this school gain little support among teachers.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

YOUR BACKGROUND

F24. Including the 2006-07 academic year, how many years have you taught full-time in a regular teaching position?

Total years

Years in primary grades (K-3)

Years at your present school

F25a. Do you have a bachelor's degree?

- Yes
- No → SKIP to Question 31a

F25b. In what year did you receive your bachelor's degree?

F25c. What was your major field of study? *Record the major code and name from Table 1.*

Code Major field _____

F26a. Did you have a second major field of study?

- Yes
- No → SKIP to Question 27a

F26b. What was your second major field of study? *Record the major code and name from Table 1.*

Code Major field _____

F27a. Do you have a master's degree?

- Yes
- No → SKIP to Question 28a

F27b. In what year did you receive your master's degree?

F27c. What was your major field of study? *Record the major code and name from Table 1.*

Code Major field _____

Table 1
Major Field of Study Codes

Elementary Education

- 101 Early childhood/Pre-K, general
- 102 Elementary grades, general

Secondary Education

- 103 Middle grades, general
- 104 Secondary grades, general

Special Education

- 104 Special education, any

Other Education

- 131 Administration
- 132 Counseling and guidance
- 133 Educational psychology
- 134 Policy studies
- 135 School psychology
- 136 Other non-subject matter specific education

Arts & Music

- 141 Visual art
- 142 Dance
- 143 Drama/Theater
- 144 Music

English and Language Arts

- 151 Communications
- 152 Composition
- 153 English
- 154 Journalism
- 155 Language arts
- 156 Reading
- 157 Speech

English as a Second Language

- 160 ESL/Bilingual education: General
- 161 ESL/Bilingual education: Spanish
- 162 ESL/Bilingual education: Other languages

Foreign Languages

- 171 French
- 172 German
- 173 Latin
- 174 Spanish
- 175 Other foreign language

Health Education

- 181 Health education
- 182 Physical education

Mathematics and Computer Science

- 190 Mathematics
- 191 Computer Science

Natural Sciences

- 211 Biology/Life sciences
- 212 Chemistry
- 213 Earth sciences
- 214 Engineering
- 215 Physics
- 216 Other

Social Sciences

- 221 Anthropology
- 222 Area/Ethnic studies (excluding Native American studies)
- 223 Criminal justice
- 224 Cultural studies
- 225 Economics
- 226 Geography
- 227 Government/Civics
- 228 History
- 229 International studies
- 230 Law
- 231 Native American studies
- 232 Political science
- 233 Psychology
- 234 Sociology
- 235 Other social science

Vocational/Technical Education

- 241 Agriculture and natural resources
- 242 Business/Office
- 243 Keyboarding
- 244 Marketing and distribution
- 245 Health occupations
- 246 Construction trades
- 247 Mechanics and repair
- 248 Drafting/Graphics/Printing
- 249 Metals/Woods/Plastics, and other precision production (electronics, leatherwork, meatcutting, etc.)
- 250 Communications and other technologies (not including computer science)
- 251 Culinary arts/Hospitality
- 252 Child care and education
- 253 Personal and other services (including cosmetology, custodial services, clothing and textiles, and interior design)
- 254 Family and consumer sciences education
- 255 Industrial arts/Technology education
- 256 Other vocational/Technical education

Miscellaneous

- 261 Architecture
- 262 Humanities/Liberal studies
- 263 Library/Information science
- 264 Military science/ROTC
- 265 Philosophy
- 266 Religious studies/Theology/Divinity

Other

- 268 Other

F28a. Have you earned any of the degrees listed below in 28b?

- Yes
 No → SKIP to Question 29

F28b. Please indicate your major field(s) of study and the year in which your degree was received:

Degree	Code for major field of study	Major field of study	Year received
a. Second bachelor's degree	Code <input type="text"/> <input type="text"/> <input type="text"/>	_____	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
b. Second master's degree	Code <input type="text"/> <input type="text"/> <input type="text"/>	_____	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
c. Educational specialist or professional diploma (at least one year beyond a master's degree)	Code <input type="text"/> <input type="text"/> <input type="text"/>	_____	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
d. Certificate of Advanced Graduate Studies	Code <input type="text"/> <input type="text"/> <input type="text"/>	_____	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
e. Doctorate (Ph.D. or Ed.D.)	Code <input type="text"/> <input type="text"/> <input type="text"/>	_____	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>

F29. As part of either your undergraduate or graduate coursework, how many advanced math courses did you take (such as trigonometry, calculus, or statistics)? *Mark (X) only one box.*

- None
 1 or 2 courses
 3 or 4 courses
 5 or more courses

F30. As part of either your undergraduate or graduate coursework, how many math education courses did you take? *Mark (X) only one box.*

- None
 1 or 2 courses
 3 or 4 courses
 5 or more courses

F31a. Which of the following describes the teaching certificate you currently hold in this state?

Mark (X) only one box.

- Regular or standard state certificate or advanced professional certificate
- Probationary certificate (the initial certificate issued after satisfying all requirements except the completion of a probationary period)
- Provisional or other type given to persons who are still participating in an "alternative certification program"
- Temporary certificate (requires some additional college coursework and/or student teaching before regular certification can be obtained)
- Emergency certificate or waiver (issued to teachers who do not have regular certification who need to complete a regular certification program in order to continue teaching)
- I do not have any of the above certifications in THIS state → SKIP to Question 32

F31b. In what content area does the teaching certificate specified in Question 31a allow you to teach in this state? For some teachers, the content area may be the grade level (e.g., elementary general, secondary general, etc.).

Record the code and content area from Table 2.

Code Content Area _____

F31c. To which of the following grade ranges does the teaching certificate specified in Question 31a apply? *Mark (X) all that apply.*

- Elementary grades (including early childhood, preschool and kindergarten)
- Secondary grades (including middle school)
- Ungraded

F32. Please indicate whether you are male or female.

- Male
- Female

F33. Are you Hispanic or Latino?

- Yes
- No

Table 2
Certification Content Area Codes

Elementary Education

- 101 Early childhood/Pre-K, general
- 102 Elementary grades, general

Secondary Education

- 103 Middle grades, general
- 104 Secondary grades, general

Special Education

- 111 Special education, general
- 112 Autism
- 113 Deaf and hard-of-hearing
- 114 Developmentally delayed
- 115 Early childhood special education
- 116 Emotionally disturbed or behavior disorders
- 117 Learning disabilities
- 118 Mentally retarded
- 119 Mildly/Moderately disabled
- 120 Orthopedically impaired
- 121 Severely/Profoundly disabled
- 122 Speech/Language impaired
- 123 Traumatologically brain-injured
- 124 Visually impaired
- 125 Other special education

Arts & Music

- 141 Art/Arts or crafts
- 143 Dance
- 144 Drama/Theater
- 145 Music

English and Language Arts

- 151 Communications
- 152 Composition
- 153 English
- 154 Journalism
- 155 Language arts
- 156 Reading
- 157 Speech

English as a Second Language

- 160 ESL/Bilingual education: General
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- 171 French
- 172 German
- 173 Latin
- 174 Spanish
- 175 Other foreign language

Health Education

- 181 Health education
- 182 Physical education

Mathematics and Computer Science

- 190 Mathematics
- 197 Computer Science

Natural Sciences

- 210 Science, general
- 211 Biology/Life sciences
- 212 Chemistry
- 213 Earth sciences
- 216 Physical science
- 217 Physics
- 218 Other natural sciences

Social Sciences

- 220 Social studies, general
- 221 Anthropology
- 225 Economics
- 226 Geography
- 227 Government/Civics
- 228 History
- 231 Native American studies
- 233 Psychology
- 234 Sociology
- 235 Other social sciences

Vocational/Technical Education

- 241 Agriculture and natural resources
- 242 Business/Office
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- 252 Child care and education
- 253 Personal and other services (including cosmetology, custodial services, clothing and textiles, and interior design)
- 254 Family and consumer sciences education
- 255 Industrial arts/Technology education
- 256 Other vocational/Technical education

Miscellaneous

- 262 Driver education
- 263 Humanities/Liberal studies
- 264 Library/Information science
- 265 Military science/ROTC
- 266 Philosophy
- 267 Religious studies/Theology/Divinity

Other

- 268 Other

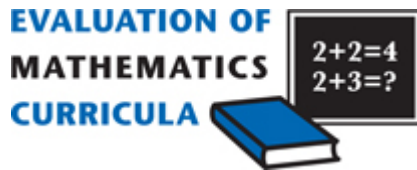
F34. What is your racial background? *Mark (X) one or more.*

- American Indian or Alaska Native
- Native Hawaiian or other Pacific Islander
- Asian
- Black or African American
- White

F35. In what year were you born?

APPENDIX B

Letter to Teachers and Spring (Implementation) Survey



P.O. Box 2393
Princeton, NJ 08543-2393
Telephone (609) 799-3535
Fax (609) 799-0005
www.mathematica-mpr.com

Dear Teacher,

You and your school are participating in the Evaluation of Mathematics Curricula. Mathematica Policy Research, Inc. (MPR), along with RG Research Group and SRI International, is conducting the study for the U.S. Department of Education's Institute of Education Sciences. As part of the study, we are gathering information about your experiences with the curricula you are piloting now that you have had several months of experience with the instructional materials.

Please complete the enclosed survey. This survey includes items that update information collected in the fall survey. All of the information that you provide will be kept confidential and used for research purposes only. No one at your school will see your responses, and you will not be identified in any report or presentation. While your participation in this study is voluntary, it is very important that you complete the questionnaire. As one of only a few hundred teachers in the study this year, every response is critical in understanding teachers' classroom experiences. We have enclosed a check for you in appreciation for your participation.

If you have any questions, please contact the study's survey director Sheila Heaviside at 1-866-869-3187, or by email at sheaviside@mathematica-mpr.com.

Thank you for your help with this important study.

Sincerely,

Roberto Agodini
Study Director

TEACHER SURVEY (Spring 2007)

NATIONAL EVALUATION OF ELEMENTARY MATHEMATICS CURRICULA

U.S. DEPARTMENT OF EDUCATION

ATTACH LABEL HERE Teacher ID Teacher Name School ID School Name

IF ABOVE INFORMATION IS INCORRECT,
PLEASE MAKE CORRECTIONS DIRECTLY ON LABEL.

This survey is part of the Evaluation of Elementary Mathematics Curricula, a national evaluation being conducted for the U.S. Department of Education. All information you provide will be kept confidential. While you are not required to respond, your cooperation is needed to make the results of this survey comprehensive, accurate, and timely. Thank you.

Please return the completed form to: 	If you have questions, please contact:
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This survey is authorized by the U.S. Department of Education (P. L. 20 U.S.C. 1221e.1) and the Confidential Information Protection and Statistical Efficiency Act of 2002. These laws require that the survey sponsor treat all information you provide as confidential. The information you provide will be used only for research and statistical purposes by the survey sponsor, their contractors, and collaborating researchers for the purpose of analyzing data and preparing scientific reports and articles. Any information publicly released (such as statistical summaries) will be in a form that does not personally identify you. Your response is voluntary. According to the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless such collection displays a valid OMB number. The OMB control number for this survey is 1850-0813. The time required to complete this survey is estimated to average 20 minutes per response. If you have any comments concerning the accuracy of the time estimate or suggestions for improving this form, please write to: U.S. Department of Education, Washington, DC 20202-4651. If you have comments or concerns about the content of this questionnaire, contact Sheila Heaviside by e-mail [at: sheaviside@mathematica-mpr.com](mailto:sheaviside@mathematica-mpr.com) or at 1-866-869-3187.

OMB NO.: 1850-0813
EXPIRATION DATE: ##/##/200#

TRAINING, RESOURCES, AND SUPPORT FOR TEACHING MATH

S1a. Since the start of the school year, has any follow-up training or on-site support from the publisher of the assigned curriculum been available to assist you in teaching math?

- Yes
 No → SKIP to Question 2a
 Don't know → SKIP to Question 2a

S1b. Since the start of the school year, have you participated in follow-up training or on-site support from the publisher of the assigned curriculum?

- Yes
 No → SKIP to Question 2a

S1c. Since the start of the school year, how many hours have you spent participating in follow-up training or on-site support from the publisher of the assigned curriculum?

hours

S2a. Are the following types of support from the publisher of the assigned curriculum available to assist you in teaching math? *Mark (X) one box for each row.*

	Yes	No	Don't Know
a. Technical phone support	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Technical online support	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. CD or DVD-based or printed reference materials	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

S2b. How often have you used each type of support from the publisher of the assigned curriculum? *Mark (X) one box for each row.*

	Never	Less than once a month	Once a month	2-3 times a month	Weekly or more
a. Technical phone support	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Technical online support	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. CD or DVD-based or printed reference materials	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- S3. Since the start of the school year, have you participated in any professional development activities on the following math topics that were NOT specific to the assigned curriculum (COLUMN A)? If yes, how many hours did you spend on these activities (COLUMN B)? Include courses you have taken for recertification or advanced certification, workshops sponsored by your school or district, conferences, or other training that is relevant to the teaching of math.

For each row, mark (X) one box in Column A. If you answer "Yes," mark (X) one box in Column B for that row.

	COLUMN A: Participation		COLUMN B: Number of hours of participation				
			8 or less	9-16	17-32	33-40	More than 40
a. Mathematics instruction	Yes <input type="checkbox"/>	No <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Content and performance standards in mathematics education	Yes <input type="checkbox"/>	No <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- S4. Since the start of the school year, what have been the sources of your professional development in math? Mark (X) all that apply.

- Workshops or training provided by your school or district
- Coursework taken towards a credential for teaching
- University coursework in math or math instruction, not including coursework for a credential
- Activities such as conferences or working groups about math
- Other → Please specify: _____
- Did not participate in professional development in math

- S5. Are you currently participating in any professional or staff development activities focused on math instruction or content and performance standards in mathematics education that are NOT specific to the assigned curriculum?

- Yes
- No

MATH INSTRUCTION IN YOUR TARGET CLASS
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- S6a. How many students are currently enrolled in your class that uses the assigned curriculum (hereafter, referred to as your "target" class)?

students

S6b. Approximately how many students in your target class are:

High math achievers

Average math achievers

Low math achievers

S6c. Approximately how many students in your target class are:

English proficient

Limited English proficient

S6d. Approximately how many students in your target class have an Individualized Education Plan (IEP)?

Students with an IEP

S7a. On average, how many minutes per week do you spend preparing to teach math to your target class using the assigned curriculum (including lesson planning, grading student work, etc.)?

minutes per week

S7b. On average how many days per week do you teach math to your class that uses the assigned curriculum (hereafter, referred to as your "target" class)?

days per week

S7c. For approximately how many minutes each day do you teach math to your target class?

minutes per day

S8. Are you using the assigned curriculum as your core math curriculum?

Yes

No → Please specify the name/publisher of your core curriculum: _____

S9. Which of the following topics have you covered with your target class using the assigned curriculum? Mark (X) all that apply.

Counting, with whole numbers

Place value, with whole numbers

Adding and addition facts, with whole numbers

Subtracting and subtraction facts, with whole numbers

Multiplying and multiplication facts, with whole numbers

Dividing and division facts, with whole numbers

Fractions

- Decimals
- Percents
- Geometric shapes
- Understanding or predicting with patterns
- Collecting or analyzing data
- Graphs
- Probability
- Measurement using rulers
- Other ways of measuring
- Time
- Money

S10a. Approximately what percentage of all the lessons from the assigned curriculum have you used so far this year with your target class? Mark (X) only one box.

- Less than 20%
- 20-49%
- 50-79%
- 80-100%

S10b. Please indicate today's date (DD/MM/YYYY): / /

S11. How often do you use materials from the assigned curriculum with your target class?
Mark (X) one box for each row.

	Never	Less than once a month	Once or twice a month	Once a week	2-4 times a week	Daily
a. Student worksheets	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Student workbooks or textbooks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Student assessments	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Manipulatives	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Lesson plans or lesson scripts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Recommended supplemental materials	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

S12. Please indicate the extent to which you agree or disagree with the following statements about the assigned curriculum. Mark (X) one box for each row.

	Strongly disagree	Disagree	Agree	Strongly Agree
a. I have had adequate opportunities to learn about the curriculum.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. I can explain to other teachers how to use the curriculum.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. The curriculum corresponds well with the math understandings I want my students to demonstrate.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. The curriculum is aligned well with our state curriculum standards.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. The curriculum conflicts with my preferred approach to math instruction.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. The curriculum assumes major changes in the way I teach math.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. The curriculum has prompted me to change some of my teaching practices in math.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. The curriculum is more trouble than it is worth.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i. All teachers in my school are committed to the implementation of the curriculum.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j. Administrators at my school are committed to the implementation of the curriculum.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k. I believe my students will score better on required accountability tests because of their experience with the curriculum.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

S13. About how often do students in your target class take part in the following activities? (Include only activities that take place in the class during math instruction.)

Mark (X) one box for each row.

<i>How often do students...</i>	Never	Less than once a month	Once or twice a month	Once or twice a week	Almost daily
a. Work in small groups or with a partner.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Practice or take tests on computational skills.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Work individually on math problems from the textbook/workbook.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Work on investigations or problems that extend for several days.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Write about how to solve a problem.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

f.	Do problems that have more than one correct solution.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g.	Discuss different ways of solving a problem.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h.	Reference other students' ideas in their classroom contributions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i.	Explain a math concept or procedure to the other students.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j.	Ask mathematical questions of other students	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k.	Use manipulatives, pictures, or diagrams to solve problems.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
l.	Use manipulatives, pictures, or diagrams to support explanations.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
m.	Work on activities that integrate math with other subjects.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
n.	Write in math journals (e.g., explain their mathematical reasoning or create their own math problems).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
o.	Take part in activities designed to develop rapid recall of math facts.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
p.	Practice math facts using manipulatives, pictures, or diagrams for support.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

S14. How often do you do the following with your target class? Mark (X) one box for each row.

	Three times or more a day	Once or twice a day	Once or twice a week	Once or twice a month	Less than once a month	Never
a.	Prompt students to explain their answers.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b.	Invite students to use multiple strategies or solutions to a problem.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c.	Ask students to demonstrate a procedure or concept to other students.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d.	Ask students to explore a concept or procedure before it is modeled.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e.	Differentiate math instruction for students at different ability levels.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

S15a. What strategies do you use to respond to students' errors during math instruction?

Mark (X) all that apply.

- Correct the student's mistake as soon as possible.
- Ask the student questions that guide him/her to the correct answer.
- Ask another student for the correct answer.
- Use the incorrect response as a basis for an exercise or class discussion about the misconception.
- Re-teach the procedure and/or concept.
- Other → Please specify: _____

S15b. Of the strategies selected in Question 15a (above), which one do you use the most often?

Mark (X) only one box.

- Correct the student's mistake as soon as possible.
- Ask the student questions that guide him/her to the correct answer.
- Ask another student for the correct answer.
- Use the incorrect response as a basis for an exercise or class discussion about the misconception.
- Re-teach the procedure and/or concept.
- Other → Please specify: _____

S16. What percent of math instructional time do students in your target class spend practicing math procedures and the recall of math facts?

% of math instructional time

S17a. Do you use other math curricula in addition to the assigned curriculum?

- No → SKIP to Question 18
- Yes → Please specify the *name(s)* and *publisher(s)* of the curricula:

S17b. For what purpose(s) are the curricula specified in Question 17a being used?

Mark (X) all that apply.

- Remediation with a small group of students
- Remediation with the entire class
- Enrichment with a small group of students
- Enrichment with the entire class
- As a replacement for selected units or lessons in the assigned curriculum

- As a supplement to units or lessons in the assigned curriculum
- Other → Please specify: _____

S17c. How often do you supplement the assigned curriculum with materials or math problems from other sources? Mark (X) only one box.

- Almost daily
- Once or twice a week
- Once or twice a month
- Less than once a month
- Never

S18. If given your choice of math curriculum to use next year, how likely are you to choose the assigned curriculum over other curricula available in your district? Mark (X) only one box.

- Very likely
- Likely
- Not at all likely

CURRICULUM IMPLEMENTATION (example item)

NOTE: This type of item will be included as a separate insert with the Spring survey, and will be curriculum-specific (i.e., each teacher will receive an insert that has items specific to the curriculum to which they are assigned). The following item is an illustrative example for one of the curricula, Scott-Foresman/Addison Wesley, and is based on critical activities in the implementation of this curriculum.

S19. How often do you do the following with your target class? Mark (X) one box for each row.

	Never	Less than once a month	Once or twice a month	Once or twice a week	Almost daily
a. Use <i>Spiral Review</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Use <i>Investigating the Concept</i> activity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Use manipulatives during the <i>Investigating the Concept</i> activity when appropriate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Groups students into small groups for collaborative activities (e.g., <i>Reaching All Learners</i>)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Identify the important math concept or key idea before the lesson begins	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Use <i>Warm Up</i> activity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

g. Use <i>Focus Questions</i> from the curriculum materials	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. Use <i>Check</i> activity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i. Provide step-by-step instructions and guidance to students on how to complete the practice page	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j. Provide practice opportunities for students at varying levels (below, on level, above)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k. Provide reading assistance to students as they complete the practice page	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
l. Use Instant <i>Check Mat</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
m. Provide opportunities for students to use online materials	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
n. Provide additional activities for "early finishers"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
o. Conduct closure activity (e.g., journal, "curriculum connection," test taking page, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

APPENDIX C

Classroom Observation Protocol for Math Expressions Curriculum

Math Expressions Fidelity of Implementation Observation Measure

Before the Main Lesson

- | | | |
|---|---|---|
| 1. Did the class complete all parts of the daily Routine? | N | Y |
| 2. Did the class complete the Quick Practice activity? | N | Y |
| If yes, was at least one aspect lead by a student leader. | N | Y |

Teaching the Lesson

3. Teacher conducts activities in the lesson.
- 1 = None
 - 2 = Some
 - 3 = All
4. Teacher uses the materials required for the lesson.
- 1 = None
 - 2 = Some
 - 3 = All
5. Math Talk Learning Community: Students ask questions and make comments relating to math.
- 1 = No Dialogue about math
 - 2 = Multiple students participate but there is no student to student interaction
 - 3 = Evidence of student-to-student interactions (e.g., students add to, comment on, correct etc. previously made comments, student ask questions of another student, etc.)

Consider denoting the degree to which math talk is occurring for each 15-minute segment of instruction. (for whole class Math talk)

6. Multiple Approaches to a Problem:
- 1 = No or minimal elicitation of student problem solving strategies
 - 2 = Two student problem solving strategies are elicited
 - 3 = More than two student problem solving strategies are elicited
7. Explaining math thinking:
- 1 = No or minimal teacher elicitation of student thinking strategies, or explanations, Teacher expects answer-focused responses. Teacher may give the answer
 - 2 = Teacher probes students' thinking somewhat
 - 3 = Teacher probes more deeply to learn about student thinking

- | | | | |
|---|---|---|-----|
| 8. Teacher conducts On Going Assessment activities? | N | Y | |
| 9. Teacher administers Quick Quiz | N | Y | N/A |
| 10. Homework is regularly assigned. | N | Y | |

11. Error Correction:

- 1 = Teacher ignores incorrect response
- 2 = Teacher provides the correct answer
- 3 = Teacher's first response is to ask another student
- 4 = Teacher asks the student guiding questions.

12. How frequently does the teacher use visual or concrete representation of mathematical concepts:

- 1 = None
- 2 = Fewer than recommended in the Teacher's Guide
- 3 = The same as or more than recommended in the Teacher's Guide

Consider denoting the degree to which visuals or concrete representation of mathematical representations are used for each 15-minute segment of instruction.

Extending the Lesson

- | | | |
|--|---|---|
| 13. The teacher implements activities designed to differentiate instruction. | N | Y |
|--|---|---|

APPENDIX D

School District Recruiting Materials

<date>

Superintendent First & Last Name
Superintendent
District Name
Street Address
City, State Zip

Dear <Superintendent>:

The Institute of Education Sciences (IES) in the U.S. Department of Education is sponsoring a study of early elementary math curricula, with the goal of identifying programs that are more effective at improving student achievement. Currently, there is little information educators can use to help them choose a math curriculum that will work best at improving student achievement in their schools. Identifying strategies that improve math achievement is particularly important for elementary school students because a large proportion of them show mastery of only rudimentary mathematics.

The study is being conducted for the Department by Mathematica Policy Research, Inc., a nationally-recognized research institute that conducts research on key public policy issues. This large-scale, national study will select, implement, and compare the effectiveness of several early elementary math curricula that use varying approaches to develop student math skills.

The study provides districts with the opportunity to use several early elementary math curricula at no cost for up to two years. This includes free teacher training and follow-up support on the curricula, and free curriculum materials.

I strongly encourage you to read the attached letter that provides more details about the study, and hope you will consider participating. Mathematica will be contacting you shortly to discuss your district's interest in, and suitability for, participating in this important new study.

In the meantime, if you have questions about the study, please contact the study's director, Dr. Roberto Agodini from Mathematica, at 609-936-2712 or ragodini@mathematica-mpr.com. You also are welcome to contact Audrey Pendleton, the IES project officer, at 202-208-7078 or audrey.pendleton@ed.gov.

Sincerely,

<Date>

Superintendent First & Last Name
Superintendent
District Name
Street Address
City, State Zip

Dear Superintendent:

As part of a study sponsored by the Institute of Education Sciences (IES) in the U.S. Department of Education, I am contacting you about an opportunity to implement (at no cost) several early elementary math curricula in the first grade during the 2006-2007 school year. The curricula use varying approaches to develop student math skills. The study will include about 20 districts and 100 schools national wide. The goal is to implement the curricula in a geographically diverse group of districts with Title I eligible schools. The study plan includes extending the implementation of the curricula in the second grade during the 2007-2008 school year. My organization—Mathematica Policy Research, a non-partisan research institute—was selected by IES to conduct this large-scale, national study.

The study includes several benefits:

- Free teacher training and follow-up support on the curricula
- Free curriculum materials for teachers and students
- Research evidence based on your own district.

Participating districts will be asked to nominate schools for the study in spring 2006, and researchers will use a lottery to randomly assign the study's curricula to the schools. The study will collect data from first grade classrooms in each school during the 2006-07 school year. In the selected classrooms, the study will administer math tests to students at the beginning and end of the school year, and study team members will visit classrooms to observe curricula implementation.

I or someone from the study team will be contacting you soon to discuss your interest in participating. We need to move quickly because the curricula will be implemented this fall, so I hope we can connect soon.

LETTER TO: Superintendent First & Last Name
FROM: Roberto Agodini
DATE: <Date>
PAGE: 2

In the meantime, if you have any questions, please feel free to contact me at (609) 936-2712 or ragodini@mathematica-mpr.com. If you would like more information about the study before we have a chance to talk, please browse the study's website www.mathcurriculastudy.com.

We hope that you will consider participating in this important study, and we look forward to speaking with you soon.

Sincerely,

You are invited

to participate in an important new study of early elementary math curricula, sponsored by the U.S. Department of Education.

How can I get more information?

Please contact Mathematica Policy Research toll-free at (866) 869-3187 and mention the math curricula study, or visit the study website at www.mathcurriculumstudy.com.

Who is conducting the study?

The study is sponsored by the U.S. Department of Education's Institute for Education Sciences. Three highly regarded independent research firms, Mathematica Policy Research, RG Research Group, and SRI International, are conducting the study.

Which math curriculum should I use?



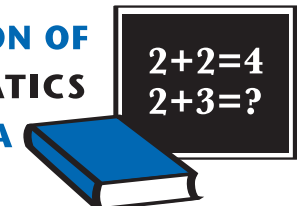
7 - 2 = ?



MATHEMATICA Policy Research, Inc.

P.O. Box 2393
Princeton, NJ 08543-2393
(609) 799-3535
(609) 799-0005 (fax)
www.mathematica-mpr.com

**EVALUATION OF
MATHEMATICS
CURRICULA**



$$3 + 3 = 6$$



What is taught and how it is taught may be important factors in a school's ability to improve student math achievement. However, there is little research that educators can use to help them choose a math curriculum for their schools.

What curricula will be included in the study?

The study will include several curricula that use varying approaches to develop students' math skills. A group of experts in math and math instruction worked with the U.S. Department of Education to select the curricula included in the study.

What are the benefits of participating?

The study is an important opportunity for districts to try several early elementary math curricula at no cost and to obtain research evidence based on their own district. Teachers will receive free training and support on the curricula.

A large proportion of U.S. elementary school students show mastery of only rudimentary mathematics. Furthermore, many students from disadvantaged families enter elementary school with a substantially weaker math foundation than their peers.

How will the study work?

The study includes two years of implementation and data collection during the 2006-2007 and 2007-2008 school years. Participating districts will nominate schools for the study in spring 2006, and researchers will use a lottery to randomly assign the curricula to participating schools. The study will collect data from only a few classrooms in each school. In selected classrooms, the study will administer math tests to students at the beginning and end of the school year, and study team members will visit classrooms to observe curricula implementation.

How many districts and schools will participate?

The study will include about 20 districts and 100 schools nationwide. The goal is to implement the curricula in a geographically diverse group of districts with Title I eligible schools.

Will information be kept private?

All information collected by the study is strictly confidential and carefully guarded to the full extent allowed by law. The study's results will be reported only for groups of students, such as "70 percent of first graders achieved mastery of rudimentary mathematics."

$$2 + 2 = 4$$

ABSTRACTS OF CURRICULA INCLUDED IN THE STUDY

Investigations in Number, Data, and Space

Investigations in Number, Data, and Space® is a K-5 mathematics curriculum developed by TERC under a grant from the National Science Foundation. Its four major goals are:

- to offer students meaningful mathematical problems
- to emphasize depth in mathematical thinking rather than superficial exposure to a series of fragmented topics
- to communicate mathematics content and pedagogy to teachers
- to substantially expand the pool of mathematically literate students

The *Investigations* curriculum offers in-depth experiences in number, data, geometry, and the mathematics of change. The following aspects of the curriculum ensure that all students are included in significant mathematical learning by:

- Spending time exploring problems in depth
- Finding more than one solution to many problems
- Developing their own strategies and approaches, based on their knowledge and understanding of mathematical relationships
- Choosing from a variety of concrete materials and appropriate technology, including calculators, as a natural part of their everyday mathematical work
- Expressing their mathematical thinking through drawing, writing, and talking

Each grade level is organized into units that involve students in the exploration of major mathematical ideas, and may revolve around two or three related areas—for example, addition and subtraction or geometry and fractions.

The curriculum is presented through a series of teacher books. Each book provides lesson plans, materials lists, reproducible student sheets for activities and games, a family letter, homework suggestions, opportunities for skill and practice, assessment activities, notes to the teacher about the mathematics students are encountering, and examples of classroom dialogues. Some units include software to extend students' experience with the mathematics being explored. In addition to the curriculum units, Student Activity Books, and Investigations at Home Booklets, and End of Unit Assessment Sourcebooks are also available for each unit in grades 1-5.

Math Expressions

Math Expressions is a complete Kindergarten through Grade 5 curriculum based on the research results of the Children's Math Worlds (CMW) project. The CMW project was conducted by Dr. Karen C. Fuson, now professor emerita of learning sciences at Northwestern University, Evanston, Illinois, and funded over a ten-year period by the National Science Foundation. Both the program and the research combine a focus on conceptual understanding with opportunities to develop fluency with problem solving and computation. *Math Expressions* incorporates approaches from both reform and traditional mathematics programs while contributing new and effective teaching strategies to mathematics instruction. Key aspects of this curriculum include application of accessible algorithms that can be more easily understood and used by students; use of student math drawings and research-based visual representations to support student understanding and class discussion of mathematical thinking; an emphasis on in-depth sustained learning of core grade-level concepts (rather than a spiral curriculum) to support students' conceptual understanding and fluency; and a "learn by teaching" design to support teachers new to the curriculum. Embedded in the program are five core classroom structures—Building Concepts, Math Talk, Student Leaders, Quick Practice, and Helping Community—that support children from all backgrounds in developing mathematical understanding, competence, and confidence.

Saxon Math

For almost 20 years, *Saxon Math* has been providing elementary math curriculum that uses a multisensory approach designed to enable all children to develop a solid foundation in the language and basic concepts of mathematics. The program is intended to align with how young children learn and build fluency with math skills. This is accomplished through hands-on activities and mathematical conversations that actively engage students in the learning process. Concepts are developed reviewed and practiced over time supported by a philosophy that believes that understanding follows doing and discussing; mastery follows learning over time, and fluency follows practicing over time. *Saxon* is an imprint of Harcourt Achieve, Inc. Harcourt Achieve produces learning solutions and content that fundamentally and positively change the lives of young and adult learners. Published under the Rigby, Saxon and Steck-Vaughn imprints, its products are based on a developmental philosophy that assesses learners' skills, matches them to appropriate content and accelerates them to meet and exceed expectations. The Rigby imprint offers progressive learning solutions for core reading and English language learner instruction that provide differentiated instruction to match each student's instructional level. The *Saxon* imprint offers the nation's best selling and most thoroughly researched skills-based mathematics program for grades K-12, as well as popular phonics, K-3 spelling, and early learning programs. The Steck-Vaughn imprint offers easy-to-use, innovative learning solutions that accelerate content-area knowledge, reading skills, and preparation for standards-based tests, allowing learners to meet and exceed expectations. For more information, please visit www.HarcourtAchieve.com.

Scott Foresman-Addison Wesley Mathematics

Scott Foresman-Addison Wesley Mathematics promotes mathematical proficiency by focusing on the development of both mathematics skills and essential understandings. This is accomplished through:

- An articulation of essential outcomes and conceptual understandings for both the teacher and the student
- Questioning strategies that develop higher order-thinking skills embedded into the student and teacher materials
- Development of mathematical communication as a means of building a deep understanding of important mathematics

A hallmark of *Scott Foresman-Addison Wesley Mathematics* is explicit instruction of essential mathematics skills and concepts, using concrete manipulatives and pictorial and abstract representations. This approach helps to move all students forward in the development of mathematical proficiency. Ongoing assessment and diagnosis are coupled with strategic intervention to meet the individual needs of students, including frequent and timely student assessments integrated throughout the program to demonstrate student understanding and guide and monitor instruction. The authors of *Scott Foresman-Addison Wesley Mathematics* also recognize the importance of quality, ongoing professional development and teacher support. Thus, professional development is provided daily within the teaching materials and is ongoing in multiple formats, including various uses of technology, to support the continued development of highly qualified teachers.

APPENDIX E

Confidentiality Pledge

CONFIDENTIALITY PLEDGE

I understand that the names, and any other identifying facts or information, of individuals, businesses, organizations, and families participating in projects conducted by Mathematica, Inc. or its subsidiaries are confidential information. I agree that I will not reveal such confidential information, regardless of how or where I acquired it, to any person unless such person has been authorized by the cognizant Mathematica Project Director or the Mathematica Project Manager to have access to the information.

I further understand that the unauthorized access to, use, or disclosure of any confidential information is a breach of the terms of my employment, or my consultant agreement with Mathematica and may subject me to court action by any interested party or to other sanctions by Mathematica. I acknowledge that this agreement shall continue to bind me even after the project(s) is (are) completed and/or even though my employment or my consultant agreement with Mathematica has terminated.

In addition, in the course of my employment I may have access to personal information, electronic and otherwise, about fellow employees. I agree that I will treat that information as having the highest confidentiality, and not communicate it to fellow employees or others outside Mathematica. Final determination of whether or not there is a business purpose requiring that I access a fellow employees' records will be made in consultation with the Director of Human Resources. Failure to uphold this standard is a breach of trust and may subject me to disciplinary action, including termination of employment.

Other than in the course of my authorized employment or my consultant agreement, I further agree that I will not use, nor facilitate the use by any third party, in any way any information deemed confidential by the terms of any contract or other written agreement between Mathematica and any other organization, except by written authorization by both parties. It is my understanding that Mathematica and the contracting organization(s) have the exclusive right to all information acquired or developed under such a contract or other written agreement. I acknowledge that I acquire no right, title, or interest in and to any data or information to which I have access by reason of my employment or my consultant agreement and that I may not remove such data from my assigned work location without prior authorization.

I agree to promptly notify the cognizant Mathematica Project Director or Project Manager, the Survey Operations Center Manager or Supervisor for survey work, and the Mathematica Security Officer of any unauthorized disclosure, use, or alteration of confidential information that I observe.

Nothing herein shall be construed to prevent divulgence of information to any court or governmental agency, provided such divulgence is required by law. However, if I am subpoenaed, or if I have reason to believe that I may be called upon to make such divulgence, I agree to notify the President of Mathematica promptly in writing and, upon his request, to cooperate in all lawful efforts to resist such divulgence.

Name: _____ Signature: _____

Date: _____

APPENDIX F

Teacher Survey Pretest Memo



Date: June 23, 2006
To: Sheila Heaviside, Mathematica Policy Research
From: Alejandra Lopez-Torkos
Re: Pilot of Teacher Survey for the *Evaluation of Elementary Mathematics Curricula*

A preliminary pilot of the teacher survey for the *Evaluation of the Elementary Mathematics Curricula* was conducted with two teachers at an elementary school in the San Francisco Bay Area in March 2006. One pilot participant was a novice teacher, in her second year of teaching; the other was a veteran teacher, in her 23rd year of teaching. This memo describes the overarching issues raised during the pilot; and summarizes teachers' comments, noting the revisions made to the survey as well as possible additional revisions.

Overall, both teachers responded favorably to the survey, and commented that the language was appropriate and that it was easy to complete. The novice teacher reported that it took her 20 minutes to fill out the survey; and the veteran said it took her almost 30 minutes, noting that she spent more time thinking about each question as part of the pilot than she would have if she were simply completing the survey as a regular respondent. This experienced teacher also found it challenging to answer the question about approaches to teaching because she was not sure whether her answers should reference the students she is teaching math to *this year* or students in general. This was especially an issue since the pilot school groups students for math instruction according to student ability, so the teachers work with a different group of children for math than they necessarily have for the rest of the school day. As noted as a possible revision (below), it may make sense to move the item about approaches to teaching to the top of the survey before the items that ask teachers to focus on the target class for the study. For some items, which ask teachers the extent to which they agree or disagree with statements, pilot participants expressed an interest in having "neutral" be a response option. The novice teacher also reported that she found it difficult to answer items that ask for the average frequency of particular activities over the course of a school year. The other comments primarily were suggestions about wording and about providing clarification in question stems.

Teachers' comments are organized below by section of the survey. Keep in mind that there are two parts to the survey – one proposed to be administered in the Fall, one in the Spring. Also, note that some items have not yet been piloted since they were more recently developed, including: F4-F6, F8, F17b, F20c, S1, S3, S5, S9, S14-17, S19 and parts of F19, S13. These will be piloted with teachers prior to finalizing the survey.

Training, Resources, and Support for Teaching Math (Fall)

F3 The novice teacher was not sure whether the last response option, which used to read, "I have my own materials for use with my class," meant that she owns these items personally or that they are simply housed in her classroom for use with her students and that she does not have to share them with other teachers.

Revision: Response option was reworded to read, "Materials are dedicated for use with my students."

Math Instruction in Your Target Class (Fall)

F10 Novice teacher requested that “approximately” be added to the beginning of this item wording. She found the item easy to answer since students are grouped by ability for math in her school, but she wondered if it would be more difficult to answer with a more heterogeneous class.

Revision: “Approximately” was added to the beginning of the prompt. (Items F11 and F12 were also revised in this way.)

F13 The veteran teacher questioned whether to include nightly grading in this count of minutes spent preparing to teach math during the week.

Revision: Added to the end of the prompt: “(including lesson planning, grading student work, etc.)”

F17a The veteran teacher requested more space to list curricula used.

Revision: Added another line for teachers to list curricula.

Approaches to Teaching (Fall)

F19 The veteran teacher was challenged in answering questions about teaching approaches because she was not sure whether to answer only with regard to the students she teaches math to (this year), or students more generally.

Revision: Refer to statements as “general statements” in the prompts to try to get teachers to answer more broadly about teaching students in general.

Additional recommendation: Could move the question about attitudes and beliefs about teaching to the front of the survey before respondents are zoomed in to focus on their target classes.

F19 The novice teacher desired a “neutral” option, between “disagree” and “agree.”

Possible revision: Could add a middle, “neutral,” response option.

F19c Both teachers found the wording of this prompt confusing. Also, the veteran teacher noted that she tends to correct students’ misconceptions the next day.

No revision recommended at this time.

Possible revision: Could reword to read: “All students’ questions about math are resolved by the end of the lesson.”

F19f The novice teacher recommended adding “or with a partner” to the end of the prompt that used to read, “Students learn math best when they share their reasoning about a math problem with the class.”

Revision: Prompt reworded: “Students learn math best when they share their reasoning about a math problem with other students.”

Your School’s Instructional Climate (Fall)

F23 The veteran teacher desired a “neutral” option, between “disagree” and “agree.”

Possible revision: Could add a middle, “neutral,” response option.

F23 In responding to this question, the veteran teacher focused on the 3rd grade teachers at her school. She questioned whether she was supposed to instead think about *all* teachers at her school.

No revision recommended at this time. The item, as currently worded, allows respondents to answer the question in the way that is most applicable or meaningful to them. We will ask teachers in the next round of piloting the survey whether this is an issue for them.

F23g The veteran teacher suggested specifying changes as curricular ones if that is what we intend to learn about with this item.

Revision: Reword prompt: “Most curriculum changes introduced at this school gain little support among teachers.” “Curriculum” was added to the prompt.

Training, Resources, and Support for Teaching Math (Spring)

S2 The novice teacher desired an unsure/don’t know option in Column A, which asks about support from the curriculum publisher. The question had only Yes/No response options.

Revision: Split item S2 into two parts (S2a, S2b) and added a “Don’t know” option to S2a.

S4 The novice teacher recommended that it be clarified how a teacher who is taking course work to “clear” her teaching credential should respond to this item. A response option used to read, “Coursework taken towards a teaching credential.”

Revision: This response option was reworded: “Coursework taken towards a credential for teaching.”

Additional recommendation: Could revise the second and third response options as follows: (ii) “Coursework taken towards a preliminary teaching credential or professional clear credential”; (iii) “University coursework in math or math instruction, not including coursework for a preliminary teaching credential or a professional clear teaching credential.”

Math Instruction in Your Target Class (Spring)

S10a The novice teacher found this question confusing; she was not sure how to estimate how much she used the curriculum. When she completed the survey, she estimated based on the number of days in a week she works from the textbook.

Revision: Reword prompt: “Approximately what percentage of all the lessons from the assigned curriculum have you used so far this year with your target class?” “All” was added to the prompt.

S11e The novice teacher found the word “scripts” confusing in the prompt, “Lesson plans or scripts.”

Revision: Clarified as “lesson scripts” in the prompt.

S12 The veteran teacher desired a “neutral” option, between “disagree” and “agree.”

Possible revision: Could add a middle, “neutral,” response option.

APPENDIX G

Teacher Training Observation Protocol

EVALUATION OF MATHEMATICS CURRICULA
PROFESSIONAL DEVELOPMENT OBSERVATION PROTOCOL
GENERAL INSTRUCTIONS

Reminders:

- Please collect an agenda and all handouts
- Submit agenda, handouts, field notes and completed protocol to Bowyee Gong at:

Bowye Gong
SRI International, BN 353
Menlo Park, CA 94025
bowyee.gong@sri.com

Section A: Field Notes

This section is used to keep field notes on each topic area covered in the training, such as the research supporting the curriculum, curricular structure, instructional techniques, mathematical content, lesson protocol, pacing, and teachers' questions/concerns. Remember to record the format of the training (e.g., lecture, demonstration, discussion) as well.

Note: Please take time to attend to and describe any content of the training related to the items under Section B *Content of Training*. These are activities that you will be asked to code for from your field notes following the trainings.

Field notes can be kept in a format unique to the observer; however, an example format is included. You may use this form or construct your own. Handwritten or electronic versions are acceptable. If submitting handwritten notes, please write legibly. Please take notes on all days of the training. Indicate the topic and the amount time for each topic.

[**Note for laptop users:** You can insert your notes directly into the tables included under Section A. Use one table row per note. Rows will expand in height as additional lines of text are inserted. Add rows to the table for each day, as required.]

Section B: Content of Training

This section is to get a snapshot of important instructional activities covered in the training. Use your field notes to help complete this section accurately. For each instructional activity, indicate how much time (not covered, less than 30 minutes, 30 minutes or more) if any. For trainings that last more than 1 day, only one summary form for the entire training is needed (not one for each day).

Any item checked as being covered during the training should be supported in your field notes with a description of the activity.

Note on items 6, 7, 8, and 9: Only check these items as being covered if the trainer actually spends time teaching the teachers on how to differentiate instruction, respond to student errors or use the assessments. For example, if a facilitator does not instruct participants on how to implement differentiated instruction for English Language Learners, but instead only shows teacher where to find the curriculum resource material for English Language Learners or suggests that teachers review the material, then the observer must mark “Not Covered” for item 6, regardless of how much time is spent on this activity.

Section C: Participant Concerns and Overall Appraisal

In this section you are asked to:

1. Record concerns that participants raise related to either the general approach of the curriculum or implementation of the curriculum. Having a record of participants’ concerns will support the development of other protocols and inform the research team about potential issues that might impact implementation fidelity during the study.
2. Provide your overall appraisal of the training. It might be helpful to review your field notes (section A) and the content of the training (section B) to provide a basis for your overall appraisal of this training. We would like you to comment on how well you think the training went, how effective the facilitators were, and how engaged the teachers were. You may comment on any overall observations you had about the training as well.

Training Information

Curriculum: _____

Location of Training: _____

Date(s) of Training: _____

Observer: _____

Start Time: _____ End Time: _____

Length of Training (hours/minutes): _____

SECTION A: FIELD NOTES

[**Note for laptop users:** Use one table row per note. Rows will expand in height as additional lines of text are inserted. Add rows to the table for each day, as required.]

OBSERVATION – DAY 1

Topic	Notes	Starting/ Ending Times

OBSERVATION – DAY 2

Topic	Notes	Starting/ Ending Times

SECTION B: CONTENT OF TRAINING

* Please read note on items 6-9 under *General Instructions*.

		Coverage		
		Not Covered	Covered Briefly (Less than 30 Minutes)	Extended Coverage (30 Minutes or More)
1.	Facilitator models or role plays instructional activities			
2.	Participants practice key instructional activities in the role of the teacher			
3.	Participants practice key instructional activities in the role of the students			
4.	Participants watch a video of key instructional activities			
5.	Participants plan actual lessons			
6.	Facilitator instructs participants on how to differentiate instruction for English Language Learners			
7.	Facilitator instructs participants on how to differentiate instruction for students with different abilities, including special education			
8.	Facilitator instructs participants on how to address incorrect student responses			
9.	Facilitator instructs participants on the use of curriculum assessments			
10.	Facilitator reviews actual math content covered in the curriculum (e.g., <i>What is an ordinal number?</i> ; Does NOT include a listing of math topics covered i.e., scope and sequence).			
11.	Facilitator provides overview of research supporting the curriculum			

SECTION C: PARTICIPANT CONCERNS AND OVERALL APPRAISAL

During the training, what concerns and issues did participants raise related to the general approach of the curriculum or implementing the curriculum?

Please provide your overall appraisal of the training below. It might be helpful to review your field notes (section B) and the content of the training (section A) to provide a basis for your overall appraisal of this training. We would like you to comment on how well you think the training went, how effective the facilitators were, and how engaged the teachers were.