# Local Systemic Change *through* Teacher Enhancement

## Mathematics (Grades K-8)

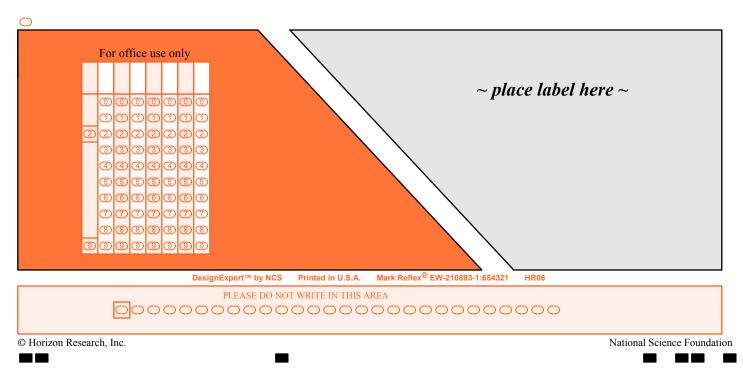
## Teacher Questionnaire

#### **Privacy Notice**

Information from this questionnaire will be retained by the National Science Foundation (NSF), a Federal agency, and will be an integral part of its Privacy Act System of Records in accordance with the Privacy Act of 1974 and maintained in the Education and Training System of Records 63 Fed. Reg. 264, 272 (January 5, 1998). These are confidential files accessible only to appropriate NSF officials, their staffs, and their contractors responsible for monitoring, assessing, and evaluating NSF programs. Only data in highly aggregated form, or data explicitly requested as "for general use," will be made available to anyone outside of NSF for research purposes. Data submitted will be used in accordance with criteria established by NSF for monitoring research and education grants, and in response to Public Law 99-383 and 42 U.S.C. 1885c.

#### **Public Burden**

Submission of the requested information is voluntary. Pursuant to 5 CFR 1320.5(b), an agency may not conduct or sponsor, and a person is not required to respond to an information collection unless it displays a valid OMB control number. The OMB control number for this collection is 3145-0161 (expires: September 30, 2008). Public reporting burden for this collection of information is estimated to average 20 minutes per response, including the time for reviewing instructions. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Suzanne Plimpton, Reports Clearance Officer for OMB Collection 3145-0161(LSC), Facilities and Operations Branch, Division of Administrative Services, National Science Foundation, 4201 Wilson Blvd., Suite 295, Arlington, VA 22230.



62 Instructions: Please use a #2 pencil to complete this questionnaire. Darken ovals completely, but do not stray into adjacent ovals.
 61 Be sure to erase completely any stray marks.
 60

<b>A</b> .	Teacher Demog	graphic Inform	ation						
1.	Are you:		2a.	Ethnicity - Are you: (Darken one oval.)		<ul><li>Hispanic</li><li>Not Hispa</li></ul>	or Latino anic or Latino		
	• Female		2b.	Race - Are you: (Choose one or more.)		<ul> <li>⊃ Asian</li> <li>⊃ Black or A</li> </ul>	Indian or Ala African Ameri awaiian or Oth	can	
3.	How many colleg completed? (Darl	e mathematics cour ken one oval.)	rses ha	ve you 4.	the equ	-	thematics coule least one seme		
	O None				(Durke		reach mic.)	Yes	No
	$\bigcirc$ 1 semester $\bigcirc$ 2 semesters					Number syster Concepts in al	-	00	0
	<ul> <li>3 semesters</li> <li>4 semesters</li> <li>5 or more ser</li> </ul>	nesters				Concepts in g	-	0	0
5.	How many years	have you taught pr	ior to tl	nis school year? (Darke	n one ov	al.)			
	0-2	3-5 6-10		11-15 16-20		21-25	26 or more		
	0	0 0		0 0		0	0		

### The National Science Foundation's Local Systemic Change (LSC) through Teacher Enhancement Program's Core Evaluation

You have been selected to participate in the nationwide evaluation of the federally-funded Local Systemic Change (LSC) program. LSC is a National Science Foundation Teacher Enhancement program that has funded more than 80 local projects that have offered science and/or mathematics professional development to teachers around the country. The cover letter accompanying this questionnaire identifies the LSC project in your area, as well as the instructional materials that are the focus of that LSC project.

Several times over the course of the LSC, each project will administer questionnaires to a sample of teachers who are targeted to participate in the local project's professional development activities. Note that you may be asked to complete this questionnaire even if you have not yet participated in the project's professional development; your response is important, regardless of whether you have already participated. A small number of randomly-selected teachers in each project is asked to provide additional information in interviews, sometimes in conjunction with a classroom visit. In order to continue receiving federal funding, each LSC project must participate in this national evaluation.

Data collection procedures have been developed to ensure high-quality data and protect teacher confidentiality. Your responses will be kept strictly confidential; they will be combined with the responses of the other teachers in your project and used only for the LSC evaluation. The name label and numbering on this questionnaire are used to help local projects deliver questionnaires to the proper teachers and follow up with teachers who have not responded; no information identifying individual teachers will be reported under any circumstances. After you complete the questionnaire, you should remove the name label and return the questionnaire as specified by your local LSC project.

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### **B.** Teacher Opinions and Preparedness

6. Please provide your opinion about each of the following statements. (Darken one oval on each line.)

		Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree
a.	Students generally learn mathematics best in classes with students of similar abilities.	1	2	3	4	5
b.	I feel supported by colleagues to try out new ideas in teaching mathematics.	1	2	3	4	5
	Teachers in this school have a shared vision of effective mathematics instruction.	1	2	3	4	5
d.	Teachers in this school regularly share ideas and materials related to mathematics.	1	2	3	4	5
e.	Teachers in this school are well-supplied with materials for investigative mathematics instruction.	1	2	3	4	5
f.	I have time during the regular school week to work with my peers on mathematics curriculum and instruction.	1	2	3	4	5
g.	I have adequate access to calculators for teaching mathematics.	1	2	3	4	5
h.	I have adequate access to computers for teaching mathematics.	1	2	3	4	5
i.	I enjoy teaching mathematics.	1	2	3	4	5
j.	I am well-informed about the NCTM Standards for the grades I teach.	1	2	3	4	5
k.	The mathematics program in this school is strongly supported by local organizations, institutions, and/or businesses.	1	2	3	4	5

 $\begin{array}{c} 48\\ 47\\ 46\\ 45\\ 44\\ 43\\ 42\\ 41\\ 40\\ 39\\ 38\\ 37\\ 36\\ 35\\ 34\\ 33\\ 32\\ 31\\ 30\\ 29\\ 28\\ 27\\ 26\\ 25\\ 24\\ 23\\ 22\\ 21\\ 20\\ 19\\ 18\\ 17\\ 16\\ 15\\ 14\\ 13\\ \end{array}$ 

7. In the left section, please rate each of the following in terms of its **importance** for effective mathematics instruction in the grades you teach. In the right section, please indicate how **prepared** you feel to do each one. (Darken one oval in each section on each line.)

			Impor	rtance			Prepa	ration	
		Not Important	Some- what Important	Fairly Important	Very Important	Not Adequately Prepared	Some- what Prepared	Fairly Well Prepared	Very Well Prepared
a.	Provide concrete experience before abstract concep	ts. ①	2	3	4	1	2	3	4
b.	Develop students' conceptual understanding of								
	mathematics.	1	2	3	4	1	2	3	4
c.	Take students' prior understanding into account wh	en							
	planning curriculum and instruction.	1	2	3	4	1	2	3	4
	Practice computational skills and algorithms.	1	2	3	4	1	2	3	4
e.	Make connections between mathematics and other								
	disciplines.	1	2	3	4	1	2	3	4
f.	Have students work in cooperative learning groups.	1	2	3	4	1	2	3	4
g.	Have students participate in appropriate hands-on								
	activities.	1	2	3	4	1	2	3	4
h.	Engage students in inquiry-oriented activities.	1	2	3	4	1	2	3	4
i.	Use calculators.	1	2	3	4	1	2	3	4
j.	Use computers.	1	2	3	4	1	2	3	4
k.	Engage students in applications of mathematics in a	l							
	variety of contexts.	1	2	3	4	1	2	3	4
1.	Use performance-based assessment.	1	2	3	4	1	2	3	4
m.	Use portfolios.	1	2	3	4	1	2	3	4
n.	Use informal questioning to assess student								
	understanding.	1	2	3	4	1	2	3	4

### PLEASE DO NOT WRITE IN THIS AREA

My principal: (Darken one oval on each line.)	Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree
a. Encourages me to select mathematics content and instructional strategies that					
address individual students' learning.	Q	9	Q	$\mathbf{Q}$	G
b. Accepts the noise that comes with an active classroom.	G	Q	9	Q	G
c. Encourages the implementation of current national standards in mathematics					
education.	Ð	9	$\bigcirc$	$\mathbf{Q}$	G
d. Encourages innovative instructional practices.	Ð	9	Q	Q	G
e. Enhances the mathematics program by providing me with needed materials					
and equipment.	Q	9	9	$\mathbf{Q}$	G
f. Provides time for teachers to meet and share ideas with one another.	Q	Q	Q	Q	Ģ
g. Encourages me to observe exemplary mathematics teachers.	Q	Q	Q	Q	G
h. Encourages teachers to make connections across disciplines.	G	Ģ	Q	Q	Ģ
i. Acts as a buffer between teachers and external pressures (e.g., parents).	G	9	Q	Q	Ģ
		-	2		

Many teachers feel better prepared to teach some subject areas than others. How well prepared do you feel to teach each of the following subjects at the grade levels you teach, whether or not they are currently included in your curriculum? (Darken one oval on each line.)

	Not Adequately Prepared	Somewhat Prepared	Fairly Well Prepared	Very Well Prepared
a. Science	Q	9	Q	4
b. Mathematics	Ģ	Q	Q	$\overline{\mathcal{Q}}$
c. Reading/Language Arts	Ģ	Q	Q	G
d. Social Studies	Ģ	Q	Q	$\overline{\mathcal{Q}}$

10. Within mathematics, many teachers feel better prepared to teach some topics than others. How well prepared do you feel to teach each of the following topics at the grade levels you teach, whether or not they are currently included in your curriculum? (Darken one oval on each line.)

	Not Adequately Prepared	Somewhat Prepared	Fairly Well Prepared	Very Well Prepared
a. Numeration and number theory	Ģ	Q	G	Q
b. Computation	Q	Q	G	$\mathbf{Q}$
c. Estimation	G	Q	Q	Q
d. Measurement	G	Q	Q	Q
e. Pre-algebra	G	9	Q	Q
f. Algebra	G	Q	Q	Q
g. Patterns and relationships	G	9	Q	Q
h. Geometry and spatial sense	G	Q	Q	Q
i. Data collection and analysis	G	9	Q	Q
j. Probability	G	Q	Q	Q
k. Technology (calculators, computers) in support of mathematics	Ģ	Q	Q	Q

11. Within the arena of mathematical processes, many teachers feel better prepared to guide and help develop student learning in some domains than others. How well prepared do you feel to provide guidance in the following, at the grade levels you teach? (Darken one oval on each line.)

(Barken one ovar on each mic.)	Not Adequately Prepared	Somewhat Prepared	Fairly Well Prepared	Very Well Prepared
a. Problem solving	Ģ	9	3	Q
b. Reasoning and proof	Ģ	Q	G	Q
c. Communication (written and oral)	Ð	9	G	Ģ
d. Connections within mathematics and from mathematics to other				
disciplines	G	Q	Q	G
e. Multiple representations (e.g., concrete models, and numeric, graphical, symbolic, and geometric representations)	φ	Q	Q	Ģ

8.

9.

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12. Please indicate how well prepared you feel to do each of

the following. (Darken one oval on each line.)	Not Adequately Prepared	Somewhat Prepared	Fairly Well Prepared	Very Well Prepared
a. Lead a class of students using investigative strategies.	1	2	3	4
b. Manage a class of students engaged in hands-on/project-based	1	2	3	4
work.	1	2	3	4
c. Help students take responsibility for their own learning.	1	2	3	4
d. Recognize and respond to student diversity.	1	2	3	4
e. Encourage students' interest in mathematics.				
f. Use strategies that specifically encourage participation of femal	es 🕚	2	3	4
and minorities in mathematics.	1	2	3	4

## 13. Please rate the effect of each of the following on your mathematics instruction. (Darken one oval on each line.)

(1	Jarken one oval on each nne.)						
		Inhibits Effective nstruction		Neutral or Mixed		Encourages Effective Instruction	N/A / Don't Know
a.	State and/or district curriculum frameworks.	1	2	3	4	5	NA
b.	State and/or district testing policies and practices.	1	2	3	4	5	NA
c.	Quality of available instructional materials.	1	2	3	4	5	NA
d.	Access to calculators for mathematics instruction.	1	2	3	4	5	NA
e.	Access to computers for mathematics instruction.	1	2	3	4	5	NA
f.	Funds for purchasing equipment and supplies for						
	mathematics.	1	2	3	4	5	NA
g.	System of managing instructional resources at the district or school level.	Ģ	Ģ	Ģ	Ģ	Ģ	R
h.	Time available for teachers to plan and prepare lessons.	1	2	3	4	5	NA
i.	Time available for teachers to work with other teachers.	1	2	3	4	5	NA
j.	Time available for teacher professional development.	1	2	3	4	5	NA
k.	Importance that the school places on mathematics.	1	2	3	4	5	NA
1.	Consistency of mathematics reform efforts with other						
	school/district reforms.	1	2	3	4	5	NA
m.	Public attitudes toward reform.	1	2	3	4	5	NA

### 14. How many of your students' parents do each of the following? (Darken one oval on each line.)

	None	A Few		About 1/2		Almost All
a. Volunteer to assist with class activities.	Ģ	Ģ	Ģ	Ģ	$\mathbf{Q}$	Ģ
b. Donate money or materials for classroom instruction.	Ģ	Ģ	Ģ	Ģ	$\mathbf{Q}$	Ģ
c. Attend parent-teacher conferences.	Ģ	Ģ	Ģ	Ģ	$\mathbf{Q}$	Ģ
d. Attend school activities such as PTA meetings and						
Family Mathematics nights.	Q	Ģ	Ģ	Ģ	$\mathbf{Q}$	Ģ
e. Voice support for the use of an investigative approach to						
mathematics instruction.	Ģ	Ģ	Q	Ģ	$\mathbf{Q}$	Ģ
f. Voice support for traditional approaches to mathematics instruction.	Ģ	Ģ	Ģ	Ģ	$\mathbf{Q}$	Ģ

15.	What and	e level is thi	e class?	K	1	<b>)</b> )		1	5	6	7 4	2
	-	l ovals that a		K		2 3 2 3		4	5		7 8 7 0	3
16.	Do you tea (Darken or		contained cla	assroom (i	.e., you are r	responsible	for tea	aching s	everal su	bjects to or	ne class)?	
	O Yes		NO (Skip to Q	uestion 20)								
17.				u typically <b>mber of L</b>	essons		his cla		arken one	e oval.)		
	0	1	2	<b>\</b>	3	4		5				
			<u>لا</u>	/	9	4		9				
18.	Approxima	ately how ma	any minutes	is a typica	l mathematic	cs lesson?	(Darke	en one c	oval.)			
		-	Av	erage Nu	mber of Mir	nutes ner I	esson					
	10 or fewer	11-20	21-30	31-40	41-50	51-60		1-70	71-80	81 or m	ore	
		0	0	0		0		0	0		oic	
	U	Ŭ	Ŭ	Ŭ	Ŭ	Ŭ		0	<u> </u>	U		
19.	In how ma	ny of the las	st five school	days did	you teach each	ch			Numb	per of Days	5	
			s class? (Dar			line)	lone	One	Two	Three	Four	Five
	a. Science						0	1	2	3	4	5
	b. Mathem						0	1	2	3	4	5
	c. Reading	g/Language	Arts				0	1	2	3	4	5
	d. Social S						0	1	2	3	4	5
20.	d. Social S About how	studies	ou do each o s? (Darken c				cs	(e. 1	(2) Rarely g., a few times a	3 Sometimes (e.g., once or twice	Often (e.g., ond or twice	(5) Al e alm math
20.	d. Social S About how instruction	often do yo in this class	ou do each o ? (Darken o	one oval or	each line.)	mathemati		(e. 1	② Rarely g., a few	3 Sometimes (e.g., once	(e.g., onc	(5) Al e alma
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the	but how often do <b>students</b> in this class take part in each of following types of activities as part of their mathematics ruction? (Darken one oval on each line.)	Never	Rarely (e.g., a few times a year)	Sometimes (e.g., once or twice a month)	Often (e.g., once or twice a week)	All or almost all mathematics lessons	63 62 61 60
a.	Participate in student-led discussions.	1	2	3	4	5	59
	Participate in discussions with the teacher to further						58
	mathematical understanding.	1	2	3	4	5	57
с	Work in cooperative learning groups.	1	2	3	4	5	56
	Make formal presentations to the class.	1	2	3	4	5	55
	Read from a mathematics textbook in class.	1	2	3	4	5	54
	Read other (non-textbook) mathematics-related materials in	1	2	3	4	5	53
1.	class.	1	2	3	4	5	52
σ	Practice routine computations/algorithms.						51
g.	Tractice routine computations/argoritimis.	1	2	3	4	5	50
h	Pavian homowork/workshoot assignments	•	2	3	(4) (4)	5	49
	Review homework/worksheet assignments.		2	3			48
	Use mathematical concepts to interpret and solve word problems.	1			4	5	40
j.	Work on solving a real-world problem.	1	2	3	4	5	L
	Share ideas or solve problems with each other in small groups.	1	2	3	4	5	46
	Engage in hands-on mathematical activities.	1	2	3	4	5	45
	Play mathematics games.	1	2	3	4	5	44
n.	Follow specific instructions in an activity or investigation.						43
		1	2	3	4	5	42
0.	Design or implement their own investigation.	1	2	3	4	5	41
p.	Work on models or simulations.						40
q.	Work on extended mathematics investigations or projects (a	1	2	3	4	5	39
•	week or more in duration).	1	2	3	4	5	38
r.	Participate in field work.	1	2	3	4	5	37
	Record, represent and/or analyze data.						36
	Write a description of a plan, procedure or problem-solving	1	2	3	4	5	35
	process.	1	2	3	4	5	34
11	Write reflections in a notebook or journal.						33
u.	while reneetions in a notebook of journal.	1	2	3	4	5	32
<b>N</b>	Use calculators or computers for learning or practicing skills.				G		31
		1	2	3	4	5	30
w.	Use calculators or computers to develop conceptual	0	2	3	(4)	3	29
	understanding.						
Х.	Use calculators or computers as a tool (e.g., spreadsheets, data	1	2	3	4	5	28
	analysis).	1	2	3	4	5	27
2	Work on portfolios.						26
Z.	Take short-answer tests (e.g., multiple choice, true/false,	1	2	3	4	5	25
	fill-in-the-blank).						24
aa.	Take tests requiring open-ended responses (e.g., descriptions,	1	2	3	4	5	23
	justifications of solutions).	1	2	3	4	5	22
bb	Engage in performance tasks for assessment purposes						21
							20
LS	C Professional Development						19
10							18
tion	s 22-27 refer to the NSF-supported Local Systemic Change (LS	C) progra	am. Please r	efer to the o	cover letter		17
	nying this questionnaire for information about the LSC project						16
	ve not vet participated in LSC professional development, darke		0	kip to Ques	•		15
- 114			and 5	<u>p to vut.</u>	/		14
Точ	what extent is each of the following true of LSC mathematics-related	4					13
	Sessional development in your district? (Darken one oval on each lin		Not			To a	12
PIO	costonal development in your district: (Darken one ovar on each in	10.7	at all			great extent	11
	am involved in planning my methometics related professional days	1	-	_		-	

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#### D. LSC Professional Development

22.	To what extent is each of the following true of LSC mathematics-related					
	professional development in your district? (Darken one oval on each line.)	Not				Тоа
		at all				great extent
	a. I am involved in planning my mathematics-related professional development.	1	2	3	4	5
	b. I am encouraged to develop an individual professional development plan to					[
	address my needs and interests related to mathematics education.	1	2	3	4	5
	c. I am given time to work with other teachers as part of my professional					[
	development.	1	2	3	4	5
	d. I am given time to reflect on what I've learned and how to apply it to the	1	2	3	4	5
	classroom.	1	2	3	4	5
	e. I receive support as I try to implement what I've learned.					[

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23. Approximately how many *total hours* have you spent on formal, LSC-provided professional development in mathematics/mathematics education *since the LSC project began*? (Darken one oval.)

0	0	$\bigcirc$	10-19	$\bigcirc$	40-59	$\bigcirc$	80-99	$\bigcirc$	130-159	0	200 or greater
$\bigcirc$	1-9	0	20-39	$\bigcirc$	60-79	0	100-129	$\bigcirc$	160-199		

24. Please indicate the number of times you have participated in each of the following activities **during this school year**. (Darken one oval on each line.)

		0	1-2	3-4	5-6	more
a.	Participated in an LSC academic year study group/discussion group.	1	2	3	4	5
b.	Was "coached" on my teaching by an LSC teacher leader/staff person					
	based on a classroom observation.	1	2	3	4	5
c.	Received assistance from an LSC "teacher leader" in my school.	1	2	3	4	5
d.	Received assistance from an LSC staff person in my district.	1	2	3	4	5
e.	Received assistance from an LSC-designated mathematician/mathematics					
	educator from a college/university/museum/industry.	1	2	3	4	5
f.	Read messages in a Listserv discussion sponsored by the LSC.	1	2	3	4	5
g.	Posted messages to a Listserv discussion sponsored by the LSC.	1	2	3	4	5

7 or

○No

25.	How would you rate the overall quality of the LSC professional development?	Very Poor	Poor	Fair	Good	Very Good	Excellent
	(Darken one oval.)	0	0	0	0	0	$\bigcirc$

	hat extent has participation in LSC mathematics-related professional lopment increased your: (Darken one oval on each line.)	Not at all				To a great extent
a.	Mathematics content knowledge.	1	2	3	4	5
b.	Understanding of how children think about/learn mathematics.	1	2	3	4	5
c.	Ability to implement high-quality mathematics instructional materials.	1	2	3	4	5

27.	Have you been identified as a teacher leader for	our district's NSF-sponsored LSC project?	⊃Yes
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### Thank you very much for participating in this survey!

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