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ABSTRACT

The Comprehensive School Mathematics Program (CSMP) is a program of CEMREL, Inc., one of the national educational laboratories, and is funded by the National Institute of Education. Its major purpose is the development of curriculum materials in mathematics for grades K-6. Beginning in September, 1973, CSMP began an extended pilot trial of its Elementary Program. Near the end of the 1974-75 school year, an extensive questionnaire was sent to all teachers. Some of the kindergarten and first grade teachers were using the program for the second year and where feasible, the analyses of responses in this report are done separately for these "experienced" teachers. About 50% of the 360 questionnaires sent to teachers were returned. Sections in the report include: (1) descriptions of the questionnaire and of the response; (2) responses about implementation of the program; (3) responses about achievement on specific test items; (4) responses about teacher evaluation of CSMP; (5) a summary; and (6) appendices that include copies of questionnaires. (RH)

EXTENDED PILOT TRIALS OF THE COMPREHENSIVE SCHOOL MATHEMATICS PROGRAM:

EVALUATION REPORT SERIES

Evaluation Report 2-C-1
Teacher Questionnaire Data

Extended Pilot Trial of the Comprehensive School Mathematics Program

Evaluation Report 2-C-1

Teacher Questionnaire Data

Martin Herbert

October, 1975

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Description of Evaluation Report Series

The Comprehensive School Mathematics Program (CSMP) is a program of CEMREL, Inc., one of the national educational laboratories, and is funded by the National Institute of Education. Its major purpose is the development of curriculum materials for grades K-6.

Beginning in September, 1973, CSMP began an extended pilot trial of its Elementary Program. The pilot trial is longitudinal in nature; students who began using CSMP materials in kindergarten or first grade in 1973-74, were able to use them in first and second grades respectively in 1974-75, and will be able to use them in second and third grades in 1975-76. Hence the adjective "extended". The limited scope of these trials does not justify the term "field trial" since the major focus of the evaluation is on a limited number of classes in the metropolitan St. Louis area.

The evaluation of the program in this extended pilot trial is intended to be reasonably comprehensive and to supply information desired by a wide variety of audiences. For that reason the reports in this series are reasonably non-technical and do not attempt to widely explore some of the related research issues. The list of reports from the first two years of the extended pilot trial is given on the next page. The most comprehensive of these are the following:

1-A-1: Overview, Design and Instrumentation
1-A-3: Final Summary Report, Year 1
and 2-A-1: Final Summary Report, Year 2

The first of these will be particularly useful to the reader in providing a description of the program, the philosophy and goals of the evaluation and the relationship of individual reports to the evaluation effort as a whole.

Longitudinal Pilot Study of the
Comprehensive School Mathematics Program

Evaluation Report Series

Evaluation Report 1-A-1	Overview, Design and Instrumentation
Evaluation Report 1-A-2	External Review of CSMP Materials
Evaluation Report 1-A-3	Final Summary Report Year 1
Evaluation Report 1-B-1	Mid-Year Test Data: CSMP First Grade Content
Evaluation Report 1-B-2	End-of-Year Test Data: CSMP First Grade Content
Evaluation Report 1-B-3	End-of-Year Test Data: Standard First Grade Content
Evaluation Report 1-B-4	End-of-Year Test Data: CSMP Kindergarten Content
Evaluation Report 1-B-5	Test Data on Some General Cognitive Skills Related to CSMP Content
Evaluation Report 1-B-6	Summary Test Data: Detroit Schools
Evaluation Report 1-C-1	Teacher Training Report
Evaluation Report 1-C-2	Observations of CSMP First Grade Classes
Evaluation Report 1-C-3	Mid-Year Data from Teacher Questionnaires
Evaluation Report 1-C-4	End-of-Year Data from Teacher Questionnaires
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Evaluation Report 1-C-6	Analysis of Teacher Logs
Evaluation Report 2-A-1	Final Summary Report Year 2
Evaluation Report 2-B-1	Second Grade Test Data
Evaluation Report 2-B-2	Readministration of First Grade Test Items
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Evaluation Report 2-C-1	Teacher Questionnaire Data
Evaluation Report 2-C-2	Teacher Interviews, Second Grade
Evaluation Report 2-C-3	Teacher Interviews, First Grade

Key to Indexing

1-C-2 Observations of CSMP First Grade Classes

"2" refers simply to the number within a given year and type of data

"C" refers to the type of data being reported
- A: Overview, summary and theoretical reports
- B: Student outcomes
- C: Non-test data

"1" refers to the year of the Pilot Study according to the following:

	Kindergarten	First Grade	Second Grade	Third Grade	. . .
Year 1 (1973-74)					
Year 2 (1974-75)					
Year 3 (1975-76)					

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Introduction

In the fall of 1973, the Comprehensive School Mathematics Program (CSMP) began a longitudinal pilot study of its Elementary School Program. Over 100 teachers began using the program, either in first grade or kindergarten. During the 1974-75 school year, the second year of this pilot study, most of these classes continued into second grade and first grade respectively and many new classes began using CSMP materials.

For the purposes of the pilot study, classes in the St. Louis area are designated "local". For these classes teacher training is standardized and comparison classes established. These local classes provide much of the evaluation data derived from the pilot study including data related to classroom observations, student and teacher interviews and individualized testing. Classes not in the St. Louis area are designated "outer ring". These classes provide information concerning usage of materials (via questionnaires and teacher logs) and various corroborative test data from cooperating sites.

Near the end of the 1974-75 school year a rather extensive questionnaire was sent to all local and outer ring teachers. Slightly different forms of the questionnaire were prepared, depending on whether the teacher was teaching the kindergarten, first or second grade portion of the program. Some of the kindergarten and first grade teachers were using the program for the second year and where feasible, the analyses of responses in this report are done separately for these "experienced" teachers. The questionnaire was sent to approximately 360 teachers.

Description of the Questionnaire and of Response

The items in the questionnaires dealt with three broad issues:

a) Implementation of the program:
- -Progress through the curriculum
- -Time devoted to math instruction
- -Teacher's Guide and relative emphasis of topics
- -Teacher training
- -Supplementary materials
- -Management of materials
- -Decision regarding continuing CSMP
- -Teachers in second year of CSMP

b) Student achievement on specific test items:
- -Fourteen test items representing typical content of the program were given and for each item teachers were asked to indicate what percentage of their students could do the item successfully.

c) Teacher evaluation of CSMP:
- -Areas of more or less accomplishment than usual
- -Attitudes of students
- -Minicomputer
- -Controversial statements
- -Comparison with traditional program on various dimensions
- -Overall evaluation

The questionnaire consisted of five pages, only the last three of which were identical for teachers at each grade level. The first two pages including some grade level specific questions such as those relating to student achievement and relative emphasis of topics. A copy of the questionnaires is given in the Appendix. In this report the items are grouped according to topic rather than given in the same order as they appeared on the questionnaire.

A total of 360 questionnaires were sent out and 174 were returned. At three school districts with a total of 22 CSMP teachers none were received. Each of these sites discontinued the use of CSMP in 1975-76. At lease one questionnaire was returned from every other site. At the 17 sites where fewer than 20 teachers used CSMP the rate of return was 70% (67 out of 96) and at the sites where more than 20 teachers used CSMP the rate of return was 46% (107 out of 232). Thus 173 out of 328, 53% of the questionnaires, were returned. These figures exclude from consideration those three sites where none were returned.

The return rate was approximately the same for each grade level:
- Kindergarten: 60 out of 113, 53%
- First grade: 75 out of 139, 54%
- Second grade: 23 out of 49, 47%

In addition 23 third grade teachers at one site used the CSMP second grade program and 15 of these returned the questionnaire. These responses are not generally summarized in the analyses of responses, though they are included in the Appendices giving complete sets of responses to free-response type items.

Thus about half the questionnaires were not returned and there is no adequate way of determining the extent to which that half which responded may be different from that half which did not. That is, since the responses were generally quite favorable towards CSMP, did those who did not respond like the program any less well than those who did? Based on teachers in the local area, of whose opinions the author is reasonably aware, the responses were indeed representative, but this may not be true of the numerically greater outer ring teachers. Nor can one check for a difference in the percentage of teachers continuing with CSMP in 1975-76, since that decision is often made by the school system, possibly against the wishes of the teacher (in either direction), and since the reasons for not teaching the program are not usually related to perception of the quality of the program (see p. 9). The questionnaires were sent out rather late in the year and some teachers may not have gotten around to it before school ended. In fact several questionnaires were received in September and were not included in the analysis here.

The responses are reported in three sections corresponding to the three broad issues described on page 2. For each question the responses are described separately for each grade level. In addition, many of the kindergarten and first grade teachers were in their second year of teaching CSMP. Where feasible, generally where the mode of response was multiple choice, the responses were analyzed separately according to whether the teacher was in the first year ("inexperienced") or second year ("experienced") of teaching CSMP. Of course many teachers designated "inexperienced" were in fact very experienced teachers, but not with CSMP. Generally, in summarizing the responses the categories "experienced" and "inexperienced" are not reported separately unless their responses are fairly different. Of the 60 questionnaires returned by kindergarten teachers, 38 were inexperienced with CSMP and 22 taught it last year. Of the 75 first grade teachers, 55 were inexperienced with CSMP and 20 taught it last year.

Several of the items were in a free response format, particularly those in which teachers were asked to give opinions or evaluations. In the cases where the responses to these items were fairly long, all responses have been given in full in one of the Appendices. Of particular interest are the responses to the last item in which teachers were to give their overall evaluation of CSMP in a paragraph or two and to attend to what they thought was best and worst about the program. The responses to this question have been given in the Appendix. Some readers may find the Appendix as good an indication of teachers' feelings toward the program as the actual body of the report.

Responses About Implementation of the Program

1. Progress Through Curriculum

"What lesson was your class on when school ended?" (first and second grade)

Table 1

Percentage of Classes Reaching
Various Points in the Curriculum

Table 1

Percentage of Classes Reaching
Various Points in the Curriculum

Number of Lessons Completed	First Grade Classes		Second Grade Classes (all "inexperienced")
	"Experienced" CSMP Teachers	"Inexperienced" CSMP Teachers	
<180	0	28	35
181-220	11	18	15
221-260	28	32	25
>260	61	22	25

There are a total of 308 lessons in first grade and 287 in second grade. In the first grade it is expected that at least 240 lessons should be completed by most classes; the remaining lessons deal with material which is supplementary or reviewed fairly thoroughly at the beginning of second grade. A similar situation applies in second grade. It can be seen that there is a dramatic difference between progress made by first grade teachers in their first and in their second year of teaching. About half the new first grade teachers did not complete what may be called the minimum portion of the curriculum, a figure comparable to the progress made last year by the (new) first grade teachers, while 61% of the experienced first grade teachers completed more than 260 lessons. Half of the second grade teachers did not complete more than 220 lessons.

2. Time Devoted to Math Instruction

"How many times per week did you usually teach math to your kindergarten class?"

"Approximately how many minutes per week did this amount to?"

Table 2

Percentage of Kindergarten Teachers
Teaching Math for Various Amounts of Time

Number of Times Teaching Math/Week	Percent of Teachers	Number of Minutes Teaching Math/Week	Percent of Teachers
1	0	0-40	24
2	20	41-60	22
3	25	61-80	7
4	23	81-100	31
≥5	32	>100	16

It is clear that there is little uniformity in the amount of time devoted to math. Teachers are almost equally divided in teaching math 2, 3, 4 or 5 times per week. Almost half the teachers spend an hour or less while almost half spend more than 80 minutes.

> "What percent of the time did you teach math twice during the day to your class?"
>
> "About how many minutes per day did you teach math to your students?"
>
> "The last time you taught non-CSMP math, about how many minutes per day did you teach math?"

These questions were asked of first and second grade teachers. The first of the above questions was answered by only 45 of the 75 first grade teachers and by only 12 of the 23 second grade teachers, possibly because of the awkward wording. Of those who did respond, exactly two-thirds of both groups responded that they taught math twice a day at least 50% of the time. In response to the second question, summarized in Table 3, below, about half the first grade teachers spent between 30 and 50 minutes, what might be considered a normal amount of time, but one-third of the teachers spent one hour or more per day. For second grade teachers, the time spent appears to be more in the normal range.

Table 3

Percentage of First and Second Grade
Teachers Teaching Math for Various Amounts of Time

Number of Minutes/Day Teaching CSMP Math	Percent of Teachers	
	First Grade	Second Grade
<30	3	9
30-39	17	26
40-49	35	39
50-59	12	9
≥60	33	17

Responses to the third question, regarding amount of time spent previously on math instruction were compared with responses regarding time spent on math instruction with CSMP. For each of second and third grades, about 60% of the responses were within five minutes per day of the time spent previously, about 20% spent ten to fifteen minutes more per day with CSMP and about 20% spent from twenty to thirty minutes more per day with CSMP. Many second grade teachers did did not respond to this question, possibly because they were new teachers or new to that grade level.

3. Teacher's Guide

"What topics in the kindergarten guide did you cover particularly well?"

"What topics in the kindergarten guide did you omit or cover only briefly?"

Table 4 lists the topics mentioned by three or more teachers as having been covered particularly well and those topics omitted or covered only briefly. Not surprisingly those covered particularly well most often were addition, subtraction, and counting and numeral writing and the topics covered less well are the most obviously optional topics of the kindergarten curriculum. A total of 173 entries were made for "particularly well" and 112 for "omit or covered only briefly." Many topics made both lists; "Number friends" for example ranks fairly high on each.

Table 4

Topics Listed by Three or More Kindergarten Teachers

Topic	Number Listed as Covered Particularly Well	Topic	Number Listed as Omitted or Covered Briefly
Addition	33	Perspective	8
Subtraction	29	Robot Walk	8
Counting & Numeral Writing Lessons	23	Points of View	7
Mazes	22	Mirrors	7
C-Rod Activities	16	Number Friends	7
Numbers	15	Permutations	6
Shapes, Color, Size	12	Geometry	4
Geometry	9	Mazes	4
Guess My Number	9	Puzzles	4
Number Friends	9	Obstacle Walk	4
Strings	8	Students as Figures	3
Relations	7	Taxi Geometry	3
Snakes	5		
Arrows	5		
Permutations	4		
Spirals	4		
Maps	4		
Guess My Rule	4		
Logic	3		
Dots	3		
Puzzles	3		

"What topics or skills did you emphasize more heavily than suggested by the guide?" (second grade)

"What topics or skills did you emphasize less heavily than suggested by the guide? (second grade)

Table 5 listed the most frequent responses. Almost all the teachers listed addition or subtraction skills as emphasized more heavily than suggested by the guide and about half listed multiplication. About half listed probability in general, or particular probability-associated games as being emphasized less heavily. A total of 56 entries were made for "emphasized more heavily" and 38 for "emphasized less heavily."

Table 5

Topics Listed by Three or More
Second Grade Teachers

Topic	Number Listed as Emphasized More Heavily	Topic	Number Listed as Emphasized Less Heavily
Addition, Subtraction	21	Probability, Combinatorics	12
Multiplication	11	Games	5
Basic Facts	5	Incidence Geometry	5
Time	4	Arrow Diagrams	3
Minicomputer	4		
Word Problems	3		

"Did you find the suggested times for lessons were realistic or did you require more time? How often was more time required?" (second grade)

The responses were classified into one of three categories depending on how frequently extra time was required: never (eight responses), rarely, once in a while, less than once per week (11 responses) or most of the time, more than half the time (three responses). Thus most teachers apparently felt that the time estimates were realistic.

4. Teacher Training

"If this is your first year teaching CSMP, how many hours of teacher training did you receive

a) before school started?
b) during the year?
c) Do you feel this was sufficient?"

Of the 111 teachers who responded to this question, training took place at the following time: before school started - 42%
after school started - 23%
both before and after - 40%
never - 5%

The number of hours of training varied considerably: ≥20 hours - 24%
10-19 hours - 36%
1-9 hours - 34%
0 hours - 5%

Sheer numbers mean little in this case since the coordinator determines, for all teachers in his or her district, what the training procedure will be. Thus training varies from district to district rather than from teacher to teacher and districts with large numbers of teachers will of course add more numbers to the totals given above than will smaller districts. Eighty percent of the teachers thought their training was sufficient, the percentages being roughly equal at each grade level. All but one of the 22 teachers who thought their training was not sufficient had received at most ten total hours of training.

> "What do you think is the minimum number of hours of teacher training (i.e., before the beginning of school) required by most teachers for teaching CSMP?"

The mean number of hours given in response to this question was as follows: kindergarten teachers - 8
first grade (inexperienced) - 7
first grade (experienced) - 18
second grade teachers - 16

The larger number for the last two teacher groups may, in part, be due to the fact that many of these teachers were from the local area and were trained in a CSMP-run workshop which was, in fact, more extensive than most outer ring workshops.

5. Supplementary Materials

> "Did you use supplementary (i.e., non-CSMP) materials?"
> If so: commercial or teacher made?
> worksheets or other?
> how frequently?
> for what topics?

Seventy-seven percent of the teachers said they used supplementary materials and this answer was given by about the same proportion of teachers at each grade level. Almost half of the teachers who use supplementary materials did so rather extensively ("frequently", "a lot", "once a day", etc.) and almost half said they used them less extensively ("occasionally", "once or twice a week", "once in a while", etc.). Eight percent said they used them rarely. Seventy percent of the topics listed could be called basic drill and another 14% (all from kindergarten teachers) had to do with numeration.

6. Management of Materials

> "How would you rate the ease of managing various materials in a CSMP classroom?
> Unsatisfactory Poor Adequate Good Excellent"

The percentages of teachers choosing each alternative are given below in Table 6. Responses were very similar for experienced versus inexperienced and were also similar for first and second grade teachers. Hence these categories have been combined.

Table 6

Percent of Teachers Giving Various Responses
Eases of Managing CSMP Materials

Response	Kindergarten	First and Second Grades Combined
Unsatisfactory	0	2
Poor	15	22
Adequate	30	44
Good	36	25
Excellent	19	7

It can be seen for first and second grade teachers, responses are rather evenly divided between positive and negative responses regarding the ease of managing the CSMP materials. Almost a quarter of these teachers gave a response of "Poor" or "Unsatisfactory". Kindergarten teachers tended to see this as less of a problem, though 15% still responded "Poor".

"What in particular are the worst problems?"

The most frequently mentioned problem was adequately storing the materials and this was noted by about half the first and second grade teachers. It was also the most frequent problem for kindergarten teachers, but these teachers noted many fewer things; the only other complaint made by three or more teachers being the abstractness of the student materials (4) and the lack of organization of lessons (3). For second grade teachers, the problem mentioned most often after storage was the distribution and grading of workbooks (noted by about 15% of the teachers). Eight second grade teachers listed buying, sorting or distributing the materials as a problem. Obviously these categories overlap somewhat.

7. Decision Regarding Continuing CSMP

"Will you be teaching a CSMP class next year?
If not, please state briefly your reasons."

The 166 responses received for this question were categorized as follows:

will continue with CSMP - 120
retiring or moving - 20
school system discontinuing CSMP (no other reason given) - 8
CSMP too difficult for slower students - 5
CSMP incompatible with main curriculum of district - 4
did not like program - 1
does not fit needs of children - 1
parents don't understand it - 1

8. Teachers in Second Year of CSMP

"How did this year go for you and your class compared to last year? What things were different?" (second year CSMP teachers only)

Of the 42 responses given, 27 indicated this year was better (smoother, better prepared, faster, etc.) than last year and four indicated it was worse. Eight teachers cited different classes or conditions without making comparisons with last year and three gave what might be called "mixed" responses. All responses are given in full in Appendix B.

9. Teacher Preparation Time

Teachers were asked to compare CSMP with their previous math program on "time required for daily preparation" by checking one of four responses. The percent checking each response is as follows: "less" - 11%
"about the same" - 30%
"more now but would be about the same after a year's experience" - 49%
"more and would continue to be after a year's experience" - 11%

Responses about Student Achievement on Specific Test Items

For each of the three grade levels a set of 14 test items was given and teachers were asked to indicate what percent of their students could successfully perform the various tasks by choosing the percentage ranges 0-30, 30-50, 50-70, 70-90 and 90-100. At each grade level the items were chosen from the topics and skills contained in the curriculum but were not necessarily representative of either the difficulty level or the relative emphasis of that topic. The items have also appeared, at one time or another, in tests administered to local first grade students. Thus it is possible to compare local teachers' estimates of student achievement with actual test data and this information will be presented in a later report as part of broader investigation of teacher perception of the relative importance of and student success with various objectives of mathematics instruction.

Table 7

Percent of Kindergarten Teachers
Choosing Various Percent Ranges
For Correct Responses on Test Items

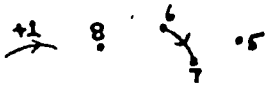
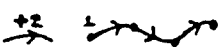
Test Item	Percent of Teachers Selecting Given Percent Correct Ranges				
	0-30%	30-50%	50-70%	70-90%	90-100%
1. Given a dark green cuisenaire rod, state correctly it's color.		1		13	85
2. From the attribute blocks correctly select a large circle.			3	12	84
3. Given several shapes, identify the triangle.		1	3	17	78
4. Given 9 dots, count them correctly.		1	4	32	63
5. Determine which of two side-by-side objects is longer.		4	14	26	56
6. Count to 20.		3	7	34	55
7. Draw exactly 11 dots.		7	13	37	43
8. Solve the problem (given the diagram): George had 3 pencils. Mary had 4 pencils. How many did they have altogether? 		8	17	37	38
9. Solve the problem (given the diagram): George had 8 pencils. He lost 3. Then how many did he have? 		12	28	32	28
10. Given several numerals, correctly identify "18".	2	8	22	54	14
11. Solve the above problem with 8 and 7 pencils and the appropriate diagram.	4	7	26	47	16
12. Label the dots for: 	9	7	38	34	13
13. Draw arrows for: 	11	19	39	28	4
14. Label the dots for: 	12	14	44	28	2

Table 8

Percent of First Grade Teachers
Choosing Various Percent Ranges
For Correct Responses on Test Items

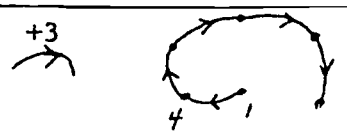
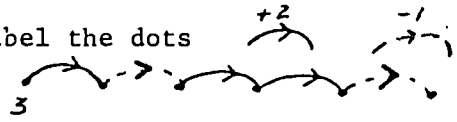
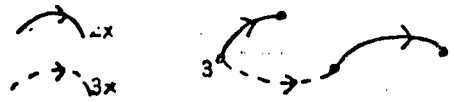
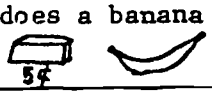
Test Items	Percent of Teachers Selecting Given Percent Correct Ranges				
	0-30%	30-50%	50-70%	70-90%	90-100%
1. Circle "47" (read orally): 74 407 47 147	3	1	10	19	67
2. 7 + 7 = _____	4		11	22	63
3. Circle the smallest number: 72 53 49	3	1	14	24	58
4. 11 - 3 = _____.	6	6	13	29	47
5. What number is 2 more than 28? (orally)	7	4	21	37	32
6. Show 735 on the Minicomputer.	8	7	18	23	44
7. 	5	10	22	27	36
8. 2 x 3 = _____	10	12	18	25	36
9. Label the dots 	6	15	23	37	20
10. When counting by 2's what goes in the blank: 56, 58, __, 62, 64	5	8	38	22	26
11. 2 + $\hat{3}$ = _____	20	10	14	27	30
12. Use the Minicomputer to add 35 + 48.	10	15	24	30	21
13. 37 + 15 = _____	17	16	28	30	9
14. $\frac{1}{2}$ x 12 = _____	21	14	22	22	21

Table 9

Percent of Second Grade Teachers
Choosing Various Percent Ranges
For Correct Responses on Test Items

Test Items	Percent of Teachers Selecting Given Percent Correct Ranges				
	0-30%	30-50%	50-70%	70-90%	90-100%
1. What number could go in the blank? 2, 4, 6, 8, ___		5	10	33	52
2. 8 + $\hat{6}$ = ____		5	35	20	40
3. 3 x 4 = ____			52	19	29
4. 154 + 128 = ____	5	19	19	24	33
5. Put these numbers in order: $\hat{6}$, 4, $\hat{10}$, 0, 11	10	5	40	20	25
6. Label the arrow. 		29	19	33	19
7. Label the dots for 	10	19	24	29	19
8. Use the Minicomputer to calculate 137 + 375 = ____	5	19	24	33	19
9. 55 - 28 = ____	10	14	38	14	24
10. $\frac{1}{2}$ x 48 = ____	14	19	33	19	14
11. Label the arrow. 	14	29	19	19	19
12. One medium package costs 4 cents less than a banana. How much does a banana cost? (orally) 	5	35	35	15	10
13. 2 x 37 = ____	14	24	38	19	5
14. Use the Minicomputer to calculate 3 x 97 = ____	14	29	24	24	10

The order of difficulty for the kindergarten responses was not unexpected. Easiest were non-numerical items (#1, #2, #3, #5), then counting and numerals (#4, #6, #7, #10), then adding and subtracting (#8, #9, #11) and finally arrow diagrams (#12, #13, #14). Generally experienced teachers thought that higher percentages of students would succeed than did inexperienced teachers (this was also true for first grade teachers); perhaps they had higher ability students. This difference was largest on items 6 and 11-13.

The items for first and second grade have been listed in approximate order of difficulty and it is clear that this ordering can not be as neatly categorized as in kindergarten; in fact it is rather difficult to adequately summarize these responses in any systematic way. It is certainly clear that there is a very wide range of perceived achievement. For example on item 11 of Table 8 (2+3=__), 20% of the teachers thought that <u>few</u> (<30%) of their students could do it while 30% thought that almost <u>all</u> of their students (>90%) could do it. This is also true for item 14 and may reflect a varying emphasis on these skills which are traditionally taught little or not at all in first grade. It is also true that there are numbers of classes where fewer than half the students are thought to be able to do straightforward and easy (relative to the rest of the CSMP curriculum) test items which are concerned with unique CSMP content. Examples are items 6, 7, 8 and 11 from Table 8 and item 7 from Table 9.

Responses about Teacher Evaluation of CSMP

1. Areas of More or Less Accomplishment

"Compared to previous years:
In what areas have your students accomplished more?
In what areas have your students accomplished less?"

Kindergarten Responses: Thirty-three entries were made under "accomplished more" with only addition and subtraction (three each) mentioned by more than two teachers. The 33 entries were classified as follows:

traditional content (addition, subtraction, computation, numbers, numerals, etc.) = 17
unique CSMP content (mazes, C-rods, sets, etc.) = 6
general math skills (creativity, perserverance, relations, problem solving, logic) = 10

Only eight entries were made under "accomplished less", no topic being mentioned more than twice. Some experienced CSMP teachers attended to last year as the previous year. Hence unique parts of the CSMP content could be noted as "accomplished more" and "accomplished less".

First grade Responses: Fifty-seven entries were made under "accomplished more", the most frequent being multiplication (9), fractions (5), negative numbers (4) and large numbers (4). The entries were classified as follows:

traditional content (+, -, x, fractions, > <, etc.) = 34
unique CSMP (negative numbers, arrows, Minicomputer, etc.) = 9
general skills (think critically, concentration, relationships, problem solving) = 14

Twenty-seven entries were made under "accomplished less". Four teachers listed measurement and three listed story problems. About half of the entries dealt with non-numeric topics such as time, money, temperature, measurement, etc.

Second Grade Responses: Thirty entries were listed under "accomplished more". The entries were as follows:

fractions (4), other traditional math skills (5)
Minicomputer (6), other CSMP content (6)
Reasoning ability (9).

Fourteen entries were made under "accomplished less" with three entries each for time and geometry.

The totals across grade levels were as follows:

accomplished more (120) - traditional content (60)
- unique CSMP content (27)
- general math skills (33)

accomplished less (49) - computation problems (10)
- unique CSMP content (16)
- time, money, measurement, etc. (23)

2. Attitudes of Students

"In what way, if any, are students' attitudes towards CSMP different than towards a traditional program?"

This was another open ended question. A summary of the responses is given in Table 10, below. At each grade level, responses were classified as follows:

(1) Comparative statements favorable to CSMP ("like it more", "better", "much more enthusiastic", "not as bored", etc.)
(2) Comparative statements, neutral responses ("no differences", "about the same")
(3) Comparative statements, unfavorable to CSMP
(4) Non-comparative statements favorable to CSMP ("they love it", "very excited about it", etc.)
(5) Non-comparative statements unfavorable to CSMP ("frustrated")
(6) Responses not reporting attitude ("more varied activities", "verbalize better", "better achievement", etc.)

All of the responses classified as (6) were favorable to the program but did not specifically report students' attitude. Many responses in (4) could be assumed to be an implied comparative statement ("they were so enthusiastic about it") but were not classified as (1) unless a comparative term was actually used.

Table 10

Classification of Statements
Regarding Student Attitudes

Type of Statement	Kindergarten Teachers	First Grade Teachers	Second, Third Grade Teachers
(1) Comparative-favorable to CSMP	19	26	8
(2) Comparative-neutral	3	3	1
(3) Comparative-unfavorable to CSMP	0	0	0
(4) Non-comparative-favorable	16	22	26
(5) Non-comparative-unfavorable	0	1	0
(6) Not reporting attitude	4	6	0

It can be seen that almost all the teachers feel that students have very positive attitudes towards CSMP. The actual responses are listed by grade level in Appendix C.

3. Minicomputer

"What is your evaluation of the Minicomputer as a teaching device? For high ability students? Low ability students? Student attitudes toward it?"

Fifty-nine first grade and 32 second grade responses were made to this question (the Minicomputer is not generally used in kindergarten). Three kinds of responses dominated:

(i) High ability students do well and low ability students do not. Sometimes only the first or second part of this (or a similar) compound statement was made, but usually both were mentioned. A response like this was given in 42% of the first grade responses and 28% of the second grade responses.

(ii) The Minicomputer is a good device for students at all ability ranges. This kind of response was given by 34% and 54% of first and second grade teachers respectively.

(iii) Students like using the Minicomputer. This was indicated by 53% and 28% of respondents and was given by some teachers who also gave response (i), by some who gave response (ii) and by some who did not give response (i) or response (ii).

Thus there is a clear dichotomy, with about equally frequent views that the Minicomputer is good for all ability ranges or that it is good only for the high ability students. First grade teachers were more likely to agree with the former, second grade teachers with the latter and more first grade teachers commented that the students liked it.

There were, of course, many other statements given than those above but each was usually given by only one or two teachers. Six second grade teachers commented that they thought the Minicomputer was good for teaching place value and four said that students got bored with it after a while or didn't want to use it when they could do the problems on their own (paper and pencil). All the responses to this question are given in Appendix D.

4. Controversial Statements

"Some statements that have been made about CSMP are given below. Please indicate your response to each statement by circling one of: SA (Strongly Agree), A (Agree), U (Undecided), D (Disagree), SD (Strongly Disagree)."

A series of eight statements was then given with the appropriate letters under each one. These statements were given on last year's questionnaires and had been drawn from comments received with some frequency, usually by previous users of the program. Six of the eight statements are criticisms of the program or suggestions for improvement.

Table 11 shows, for each statement, the percentage of teachers who strongly agreed, agreed, etc, with the given statements.

Table 11

Summary of Responses
to Controversial Statements

Statement	Percent Across All Teachers				
	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
1. The teacher spends too much time presenting things to the whole class as opposed to helping students as they work on their own.	9	18	9	46	18
2. There is a need for some sort of bookkeeping system which will allow the teacher to monitor the progress of individual students.	21	40	17	20	3
3. The spiral approach (briefly introducing a topic, then later returning to it for a while, etc.) is a better approach with CSMP materials than the "mastery" approach (staying with topic until students have mastered it).	38	36	16	10	0
4. Students find many of the arrow diagrams too confusing to interpret because of the jumble of arrows and dots.	13	31	17	37	2
5. The individual lessons in the program do not provide a wide enough range for both the better students and the slower students.	7	25	11	46	11
6. The story approach, which the program frequently uses to present ideas, is a good strategy to use with first graders.	66	24	4	0	0
7. More "exploring" type of activities involving physical objects should be included in the program.	11	38	25	24	2
8. Because the mathematical content of the program is too difficult for some students, students of low ability would be better off in a more traditional program.	14	17	22	35	12

Respondents in all groups generally agreed with the two positively worded statements, regarding the spiral approach (item 3), and regarding the story approach (item 6). The other statements were negatively worded (critical of CSMP) and for every one of these over 25% of the teachers agreed or strongly agreed and over 25% disagreed or strongly disagreed with the statement made. For three statements there was at least 50% more disagreement than agreement. These were: statement 1 (too much teacher-led time), statement 5 (not a wide enough range of lessons for various abilities), and statement 8 (low ability students being better off in a traditional program). Opinion was rather evenly divided on statement 4 (arrow diagrams being too confusing). On the remaining two, statement 2 (the need for a bookkeeping system), and statement 7 (more exploring type of activities), there was about twice as much agreement as there was disagreement.

In order to compare responses for different teacher groups, the following procedure was carried out for each controversial statement. Each teacher's response was coded 1, 2, 3, 4 or 5 for strongly agree, agree, undecided, disagree or strongly disagree respectively. Then the mean score across teachers was calculated separately for each teacher group. Table 12 shows these mean scores.

Table 12

Summary of Responses Comparing CSMP to Previous Math Program

Statements	Kindergarten Inexperienced	Kindergarten Experienced	First Grade Inexperienced	First Grade Experienced	Second Grade
1. The teacher spends too much time presenting things to the whole class as opposed to helping students as they work on their own.	3.7	4.0	3.8	4.1	3.3
2. There is a need for some sort of bookkeeping system which will allow the teacher to monitor the progress of individual students.	2.1	2.8	2.6	2.7	2.2
3. The spiral approach (briefly introducing a topic, then later returning to it for a while, etc.) is a better approach with CSMP materials than the "mastery" approach (staying with topic until students have mastered it).	2.0	2.2	2.0	1.7	2.1
4. Students find many of the arrow diagrams too confusing to interpret because of the jumble of arrows and dots.	2.8	3.1	2.7	3.1	2.8
5. The individual lessons in the program do not provide a wide enough range for both the better students and the slower students.	3.1	3.5	3.3	3.2	3.3
6. The story approach, which the program frequently uses to present ideas, is a good strategy to use with first graders.	1.4	1.5	1.3	1.2	1.4
7. More "exploring" type of activities involving physical objects should be included in the program.	2.2	2.5	2.9	3.0	3.0
8. Because the mathematical content of the program is too difficult for some students, students of low ability would be better off in a more traditional program.	3.1	3.5	3.1	2.9	3.0

A mean score of 3.0 indicates a set of responses that are completely balanced between agreement and disagreement with the given statement. The higher the score, the more disagreement there is with the statement made. Thus high scores for the two positively worded statements 3 and 6, would indicate disagreement, or a lack of support for the program. On the other hand, high scores on the remaining items, which are critical of the program, would indicate disagreement with the statement and those responses would therefore be supportive of CSMP.

Inexperienced teachers tended to agree more (had lower scores) with statement 2 (the need for a bookkeeping system) and statement 7 (more exploring type of activities). The responses of experienced teachers were generally slightly more supportive of CSMP than were the responses of inexperienced teachers. Second grade teachers agreed more than other groups with statement 1, that the teacher spends too much time presenting things to the whole class. Generally, however, the responses were rather similar across teacher groups.

Some 28 experienced CSMP teachers at the kindergarten and first grade levels responded to these statements on the questionnaire last year and again this year. Their responses from both years were analyzed to investigate possible changes in attitudes after their second year with CSMP. These teachers agreed more with the positive statements about the spiral approach and the story approach (items 3,6) and disagreed more with negative statements about the need for a bookkeeping system and for more "exploring" type of activities (items 2,7). The differences were generally about one-half a unit (choice of response).

5. Comparisons with Traditional Programs

"Compared to the previous mathematics programs you have used, how does CSMP compare on the following items:

1. Student interest and involvement with CSMP is
   (far less) (a little less) (about the same) (a little more) (far more)

2. Students' overall achievement of the usual math skills and concepts with CSMP is
   (far less) (a little less) (about the same) (a little more) (far more)

3. Overall quality of CSMP is
   (much lower) (slightly lower) (about the same) (slightly higher) (much higher)

4. The appropriateness of CSMP for low ability students is
   (much lower) (slightly lower) (about the same) (slightly higher) (much higher)

The reporting procedure for these responses is similar to that used in the last section. Each response was coded 1, 2 . . 5 for far less, a little less, . . ., far more or for much lower, slightly lower, . . ., much higher. Then mean scores were generated for each item for each teacher group, the higher the score the more favorable towards CSMP. Table 13 below gives these mean scores. As can be seen they are rather similar from group to group, hence the responses have been combined to show the percent of all responding teachers who chose each alternative.

Table 13

Summary of Responses in
Comparing CSMP to Previous Math Program

Issues	Mean Score By Teacher Group					Percent Across All Teachers				
	Kindergarten Inexperienced	Kindergarten Experienced	First Grade Inexperienced	First Grade Experienced	Second Grade	"Far less" or "Much lower"	"A little less" or "Slightly lower"	"About the same"	"A little more" or "Slightly higher"	"Far more" or "Much higher"
1. Student interest and involvement	4.4	4.6	4.6	4.9	4.6	0	1	6	24	69
2. Students' overall achievement	4.3	4.5	4.3	4.3	4.5	1	3	9	37	50
3. Overall quality	4.2	4.5	4.4	4.7	4.8	1	3	6	30	60
4. Appropriateness for low ability students	2.6	3.2	2.8	2.4	2.7	20	21	23	25	11

The responses to the first three statements were overwhelmingly favorable to the program. For these three combined, 90% of the responses were favorable (usually very favorable) and less than 3% were unfavorable. Teachers were not agreed on the appropriateness of CSMP for low-ability students. About 40% thought it less appropriate to some degree while nearly as many thought it more appropriate than their previous math program. The responses are fairly similar among the various teacher groups.

Comparisons were made between last year's and this year's responses for the 28 teachers who responded to these questions both years. For each item the mean score was almost identical from one year to the next.

6. Overall Evaluation

> "On the back of this page please give your overall evaluation of CSMP. Use whatever detail and length you think appropriate. You might attend to what you think is best about the program, what is worst and how it could be improved."

The responses to this question were often fairly long and well thought out. Many teachers articulated what they thought was best and worst about the program and many made constructive suggestions for improvement. No attempt will be made to summarize these evaluations beyond saying that they tend to reflect the data already presented. Most responses are very favorable especially regarding the high level of student interest. The most frequent complaints or suggestions relate to the spiral approach (too long in returning to the same topic or too brief an exposure), low ability students (some concepts too abstract and more remedial and/or concrete materials needed; also the level of sophistication increased too rapidly for some), the actual physical materials (too flimsy, too much checking, too complicated, too small) and a need for student evaluation materials (tests and/or standards for certain points in the curriculum).

All responses are given in full in Appendix B which, though fairly long, is quite readable (probably more so than the rest of this report) and provides a rather vivid portrayal of what teachers think of CSMP.

Summary

In the spring of 1975, a questionnaire was sent to all teachers using the CSMP curriculum either at the kindergarten, first, or second grade levels. Some of these teachers had taught CSMP the previous year (1973-74) and were classified as "Experienced" teachers. About 50% of the questionnaires were returned.

In the summary, not every single item will be attended to. What will be summarized are what the author considers the key questions. Special emphasis will be placed on areas in which significant dissatisfaction was expressed.

1. Students' attitudes towards CSMP were very favorable. The clearest, most unequivocal responses were given in answer to questions concerning student attitude. On two items comparing students' attitudes towards CSMP with their attitudes towards a traditional math program (a free response item, p. 16, and a multiple choice response, p. 21) there was very strong agreement that students enjoyed CSMP and were enthused about it and much preferred it to a traditional program. In the overall evaluation of CSMP, a free response item (p.21), more teachers wrote about the healthy attitudes of their students than about anything else.

2. Teachers felt that students' achievement was higher with CSMP than compared to previous years with other math programs. Fifty percent of the teachers thought achievement was "far more" and another 37% thought it "a little more" than the previous program, while only 4% thought it either "a little less" or "far less" (p.21). Two and a half times as many responses were listed for "areas in which students have accomplished more" than for "areas in which students have accomplished less". Half of the responses listed under "more accomplished" dealt with basic skills, especially computation, and over a quarter had to do with general abilities such as problem solving, critical thinking, relationships, etc. (p.15). These responses coincide fairly well with test data gathered during the past two years.*

3. There were signs that the program appeared to be being implemented fairly well. For example:
   a) Most teachers thought that the spiral approach was more effective than the mastery approach (p.18)
   b) Second-year teachers generally felt their classes went more smoothly this year (p.10)
   c) Most teachers said that preparation time for CSMP was about the same, or would be after a year's experience, as for other math programs (p.10)
   d) As one might expect, the content given the heaviest emphasis by teachers had to do with basic computational skills and the least emphasis was given to ideas such as probability and combinatorics topics which appear infrequently in CSMP and virtually never in other programs (p.7)

4. However, there were things happening which were not intended. For example.
   a) Three quarters of the teachers supplemented the program with Non-CSMP material such as commercial worksheets. In half of the cases this was done on a regular and frequent basis (p.8)

*Evaluation Report 1-A-3: Final Summary Report Year 1 and Evaluation Report 2-B-1: Second Grade Test Data

b) Significant numbers of teachers (one-third of the first grade teachers) taught math for over one hour per day, rather longer than usual (p. 5)
c) Forty percent of the teachers received less than 10 hours of teacher training, or less than half the recommended time (p. 7)
d) Almost a quarter of the teachers rate the ease of managing CSMP materials as either "poor" or "unsatisfactory" (p. 8) and over half thought that a better bookkeeping system was needed for monitoring student progress (p. 18).
e) Many second and third grade teachers did not make sufficient progress during the year to complete even the minimum recommended portion of the curriculum. It should be noted, however, that teachers with a year's experience in CSMP did tend to make much better progress than teachers new to CSMP (p. 4)

5. In the author's opinion the two most damaging criticisms had to do with the (possibly related) issues of the efficacy of the Minicomputer and the appropriateness of the program for low ability students. In a free response item dealing with the Minicomputer, 37% of the first and second grade teachers did not think it was a good device for teaching low ability students; about the same number thought it was a good device for them (p.17). Forty-one percent of the teachers thought CSMP less appropriate for low ability students than their previous math program; 46% thought it more appropriate (p.21). The responses to these two questions, reflected fairly well in the summary evaluations given by each teacher (Appendix E), were rather different than say the responses to the question regarding the management of materials. In that latter case the responses were also balanced but this was because many neutral and few extreme responses were given. For the two questions described above, there were many responses at either end of the scale. Teachers felt rather strongly about the issues and happened to be rather equally divided one way or the other. Without considering the reasons for their opinions, and noting that equal numbers of teachers felt just the opposite, it is true that over a third of the teachers thought the Minicomputer in particular, and the program as a whole, were not particularly appropriate for low ability students. That most of these same teachers nevertheless were impressed by CSMP students' achievement and attitudes (1 and 2 above) is somewhat puzzling.

Appendix A

Copies of Teacher Questionnaires

The questionnaires are reproduced in this Appendix in the following order:

Pages 1 and 2 of the Kindergarten Questionnaire
Pages 1 and 2 of the First Grade Questionnaire
Pages 1 and 2 of the Second Grade Questionnaire
Pages 3, 4 and 5 of all Questionnaires

CSMP Teacher Questionnaire

Kindergarten, page 1

1. What topics in the kindergarten guide did you cover particularly well?

_____

_____

_____

2. What topics in the kindergarten guide did you omit or cover only briefly?

_____

_____

_____

3. How many times per week did you usually teach math to your kindergarten class?

_____

4. Approximately how many minutes per week did this amount to? _____

Answer the next question only if the kindergarten materials listed below have been used by 2 or more classes. In the spaces put the number of additional classes that you think will be able to use each item before it needs replacement.

Kindergarten Guide ____

Demonstration Rod Kit ____

Demonstration Dot Cards ____

Demonstration Numeral Cards ____

Number Lines ____

0-99 Number Charts ____

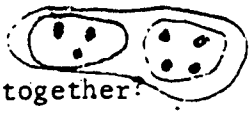
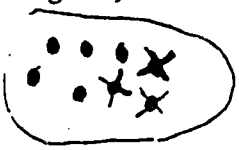
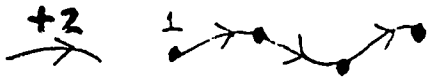
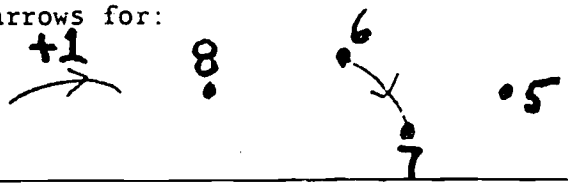
Replacement Set of Demonstration Magnetized Rods ____

Student Materials

K-A Blocks ____

K-Track Cards ____

For each of the objectives given below, indicate the percent of your students who, in your judgment, could successfully perform the task. Do this by circling the appropriate range of percentages.

1. Given several shapes, identify the triangle.	0-30	30-50	50-70	70-90	90-100
2. Given a dark green cuisenaire rod, state correctly it's color.	0-30	30-50	50-70	70-90	90-100
3. Draw exactly 11 dots.	0-30	30-50	50-70	70-90	90-100
4. Given 9 dots, count them correctly.	0-30	30-50	50-70	70-90	90-100
5. Given several numerals, correctly identify "18".	0-30	30-50	50-70	70-90	90-100
6. From the attribute blocks correctly select a large circle.	0-30	30-50	50-70	70-90	90-100
7. Solve the problem (given the diagram): George had 3 pencils. Mary had 4 pencils. How many did they have altogether? 	0-30	30-50	50-70	70-90	90-100
8. Solve the above problem with 8 and 7 pencils and the appropriate diagram.	0-30	30-50	50-70	70-90	90-100
9. Solve the problem (given the diagram): George had 8 pencils. He lost 3. Then how many did he have? 	0-30	30-50	50-70	70-90	90-100
10. Determine which of two side-by-side objects is longer.	0-30	30-50	50-70	70-90	90-100
11. Count to 20.	0-30	30-50	50-70	70-90	90-100
12. Label the dots for: 	0-30	30-50	50-70	70-90	90-100
13. Label the dots for: 	0-30	30-50	50-70	70-90	90-100
14. Draw arrows for: 	0-30	30-50	50-70	70-90	90-100

CSMP Teacher Questionnaire

First Grade, page 1

1. What lesson was your class on when school ended? _____
2. About how many minutes per day did you teach math to your students? _____
3. What percent of the time did you teach math twice during the day to your class? _____
4. The last time you taught non-CSMP math to second graders, about how many minutes per day did you teach math? _____

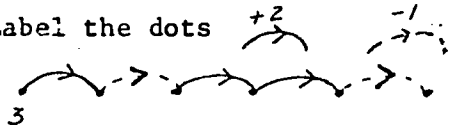
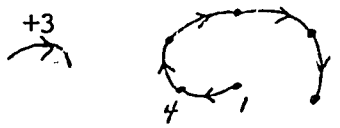
Answer the next question only if the first grade materials listed below have been used by 2 or more classes. In the spaces put the number of additional classes that you think will be able to use each item before it needs replacement.

Classroom Materials		Student Materials	
First Grade Teacher's Guide	____	Sheet of Tanograms	____
Demonstration Miniconputer	____	Set of Cardboard A Blocks	____
Set of Magnetized Checkers	____	Set of Cardboard F Blocks	____
Set of Magnetized Rods	____	Marble Shaker	____
Demonstration Dot Cards	____	Numeral Card Deck	____
Demonstration Numeral Cards	____	Dot Card Deck	____
Number Lines	____	Individual Minicomputer	____
Addition Flash Cards	____		

So far these materials have been used by _____ classes.

First Grade, Page 2

For each of the items below, indicate the percent of your students who, in your judgement, could successfully perform the task. Do this by circling the appropriate range of percentages.

a)	7+7=_____	0-30	30-50	50-70	70-90	90-100
b)	37+15=_____	0-30	30-50	50-70	70-90	90-100
c)	11-3=_____	0-30	30-50	50-70	70-90	90-100
d)	2x3=_____	0-30	30-50	50-70	70-90	90-100
e)	Label the dots 	0-30	30-50	50-70	70-90	90-100
f)	$\frac{1}{2}$ x12=_____	0-30	30-50	50-70	70-90	90-100
g)	2+$\hat{3}$=_____	0-30	30-50	50-70	70-90	90-100
h)		0-30	30-50	50-70	70-90	90-100
i)	Circle the smallest number: 72 53 49	0-30	30-50	50-70	70-90	90-100
j)	Circle "47" (read orally): 74 407 47 147	0-30	30-50	50-70	70-90	90-100
k)	What number is 2 more than 28? (orally)	0-30	30-50	50-70	70-90	90-100
l)	When counting by 2's what goes in the blank: 56, 58, __, 62, 64	0-30	30-50	50-70	70-90	90-100
m)	Show 735 on the minicomputer	0-30	30-50	50-70	70-90	90-100
n)	Use the minicomputer to add 35+48	0-30	30-50	50-70	70-90	90-100

What is your evaluation of the minicomputer as a teaching device? For high ability students? Low ability students? Student attitudes toward it?

CSMP Teacher Questionnaire

Second Grade, page 1

1. What lesson was your class on when school ended? _____
2. About how many minutes per day did you teach math to your students? _____
3. What percent of the time did you teach math twice during the day to your class? _____
4. The last time you taught non-CSMP math to second graders, about how many minutes per day did you teach math? _____
5. Did you find the suggested times for lessons were realistic or did you require more time? How often was more time required?

_____

_____

6. What is your evaluation of the minicomputer as a teaching device? For high ability students? Low ability students? Student attitudes toward it?

_____

_____

_____

_____

_____

7. What topics or skills did you emphasize more heavily than suggested by the guide?

_____

_____

_____

8. What topics or skills did you emphasize less heavily than suggested by the guide?

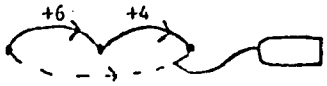
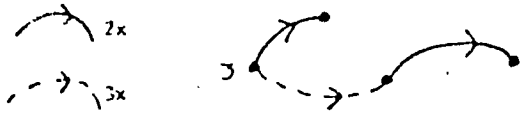
_____

_____

_____

Second Grade, Page 2

For each of the items below, indicate the percent of your students who, in your judgement, could successfully perform the task. Do this by circling the appropriate range of percentages.

a)	154+128=_____ (Without minicomputer.)	0-30	30-50	50-70	70-90	90-100
b)	55-28=_____ (Without minicomputer.)	0-30	30-50	50-70	70-90	90-100
c)	3x4=_____ (Without minicomputer.)	0-30	30-50	50-70	70-90	90-100
d)	2x37=_____	0-30	30-50	50-70	70-90	90-100
e)	$\frac{1}{2}$ x48=_____	0-30	30-50	50-70	70-90	90-100
f)	8+$\hat{6}$=_____	0-30	30-50	50-70	70-90	90-100
g)	What number could go in the blank? 2, 4, 6, 8, ___	0-30	30-50	50-70	70-90	90-100
h)	One medium package costs 4 cents less than a banana. How much does a banana cost? (orally) 	0-30	30-50	50-70	70-90	90-100
i)	Label the arrow. 	0-30	30-50	50-70	70-90	90-100
j)	Label the arrow. 	0-30	30-50	50-70	70-90	90-100
k)	Label the dots for 	0-30	30-50	50-70	70-90	90-100
l)	Use the minicomputer to calculate 137+375=_____	0-30	30-50	50-70	70-90	90-100
m)	Use the minicomputer to calculate 3x97=_____	0-30	30-50	50-70	70-90	90-100
n)	Put these numbers in order: $\hat{6}$, 4, $\hat{10}$, 0, 11	0-30	30-50	50-70	70-90	90-100

Part B

Some statements that have been made about CSMP are given below. Please indicate your response to each statement by circling one of: SA (Strongly Agree), A (Agree), U (Undecided), D (Disagree) or SD (Strongly Disagree).

1. The teacher spends too much time presenting things to the whole class as opposed to helping students as they work on their own.

SA A U D SD

2. There is a need for some sort of bookkeeping system which will allow the teacher to monitor the progress of individual students.

SA A U D SD

3. The spiral approach (briefly introducing a topic, then later returning to it for a while, etc.) is a better approach with CSMP materials than the "mastery" approach (staying with topic until students have mastered it).

SA A U D SD

4. Students find many of the arrow diagrams too confusing to interpret because of the jumble of arrows and dots.

SA A U D SD

5. The individual lessons in the program do not provide a wide enough range for both the better students and the slower students.

SA A U D SD

6. The story approach, which the program frequently uses to present ideas, is a good strategy to use with first graders.

SA A U D SD

7. More "exploring" type of activities involving physical objects should be included in the program.

SA A U D SD

8. Because the mathematical content of the program is too difficult for some students, students of low ability would be better off in a more traditional program.

SA A U D SD

1. Will you be teaching a CSMP class next year? _____
   If not, please state briefly your reasons?

   _____

   _____

2. If this is your first year teaching CSMP, how many hours of teacher training did you receive

   a) before school started? _____

   b) during the year? _____

   c) Do you feel this was sufficient? _____

3. Did you use supplementary (i.e. non-CSMP) materials? Yes No

   If so: commercial or teacher made? _____

   worksheets or other? _____

   how frequently? _____

   for what topics? _____

4. Is there a need in CSMP for testing materials for student evaluation? Yes No

5. Compared to previous years:

   a) In what areas have your students accomplished more?

   _____

   _____

   _____

   b) In what areas have your students accomplished less?

   _____

   _____

   _____

6. What do you think is the minimum number of hours of teacher training (i.e. before the beginning of the school year) required by most teachers for t aching CSMP?

   _____

7. In what way, if any, are students' attitudes towards CSMP different than towards a traditional program?

   _____

   _____

8. Compared to previous mathematics programs you have used, how does CSMP compare on the following items:

a) Time required for daily preparation is

(less) (about the same) (more now but would be about the same after a year's experience) (more - and would continue to be after a year's experience)

b) Student interest and involvement with CSMP is

(far less) (a little less) (about the same) (a little more) (far more)

c) Students' overall achievement of the usual math skills and concepts with CSMP is

(far less) (a little less) (about the same) (a little more) (far more)

d) Overall quality of CSMP is

(much lower) (slightly lower) (about the same) (slightly higher) (much higher)

e) The appropriateness of CSMP for low ability students is

(much lower) (slightly lower) (about the same) (slightly higher) (much higher)

9. (Answer only if this was your second year teaching CSMP.)
How did this year go for you and your class compared to last year?
What things were different?

_____

_____

_____

_____

10. How would you rate the ease of managing the various materials in a CSMP classroom?

(Unsatisfactory) (Poor) (Adequate) (Good) (Excellent)

What in particular are the worst problems?

_____

_____

11. On the back of this page please give your overall evaluation of CSMP. Use whatever detail and length you think appropriate. You might attend to what you think is best about the program, what is worst and how it could be improved.

Appendix B

Responses Regarding Second Year of Teaching CSMP

"How did this year go for you and your class compared to last year? What things were different?" (second year CSMP teachers only)

The responses are given by grade level, but within grade level they are not in any particular order.

Kindergarten Responses

"Much the same - had more materials."

"This was a great year! On the basis of the results of the test given at the end of last year. I was able to determine the weakness of the years work and modify this years program accordingly."

"I felt that I accomplished more last year as I had the same children all day and could teach several lessons per day. This year I had 43 students (half day) with a wide range in ages. There is no fault with CSMP."

"I was able to handle the materials with greater ease. Lessons went more smoothly."

"The interest was better motivated the second year. The emphasis was different. Last year the method was more 'touch-and-go' to cover the span in sequence and with concern for the variables."

"I began more slowly and did not try to rush children along so rapidly, I believe they learned more understanding about what numbers represent and were much more eager to work with worksheets."

"This year was okay."

"I felt I was better prepared having taught the program last year."

"I was better prepared and we all enjoyed the work."

"I found I did not take as much time teaching but spent more time in the children doing."

"Much better! I was more comfortable and better prepared. I skipped some lessons that were unsuccessful last year."

"I was more familiar with program and materials and could use them more creatively."

"A good year for math, but I do not like the suggested sequence."

"I did far more grouping depending upon the students needs."

"Much better! I felt that I was more familiar with the material."

"Things went better. I knew what lessons the children would have problems with and was better able to prepare for them. I felt more familiar with the program. The children seemed more ready (generally speaking) for these types of approaches to math."

"Things seemed to move more smoothly for me and the class because I had been through the material once and knew where and when to emphasize or de-emphasize certain points."

"I taught the lessons I felt the children needed for first grade readiness and arranged the sequence of the lessons differently - number mechanics came first, then the string diagrams, arrows later in the year."

"Familiarity with materials and lesson plans made planning time less and easier. As for achievement it seemed about the same. More children seemed less ready for several activities or I was more aware of the situation because of greater familiarity with materials."

"This year went much better and children enjoyed it more. I felt better prepared to teach and feel I did a better job."

First Grade Responses

"I didn't feel it went as well. The students have become so game oriented (largely my fault, but also related to the type of program CSMP is), that I have a hard time keeping their attention when we had to work on the 'how-to's' of the program and topics they considered less interesting."

"Much smoother, less preparation time, and more relaxed."

"This class did not seem to enjoy the program as well as last years group."

"This year went slightly better than last year. I was more confident when teaching the lessons. I did have more slow students this year than last year. These students took up more of my time for individual help."

"Much better, most important I was more at ease and more confident."

"My students had CSMP math in Kindergarten, therefore, less time was needed for introduction and development of lessons, and, I was able to move along the sequence faster."

"It went smoother since I knew more about what to say and do."

"Much more smoothly. I was more assured of lesson content and outcome. I was more organized and could better anticipate pupil response."

"I was more relaxed about the total program. I had an over-view and felt the spiraling concept would be workable - better organization of materials."

"Less achievement - I had a lower class than last year."

Second and Third Grade Responses

"I enjoyed first grade lessons more than second. The lessons were more varied."

"Things did not go as smoothly this year as last. The range of ability seemed to spread even more making a group lesson difficult."

"I thought the year was easier for me as to teacher preparation. I felt free to vary from the guide and to relate the same ideas in a little different approach if I thought a child would better understand because I had taught the material previously."

"I was more sure of myself and accomplished more with my children in first grade."

"This year was much easier because I was familiar with the spiral approach and the language. I had a better idea of what would happen and so I was more relaxed about it."

"This is difficult to compare since one group was of high ability and the other of extremely low ability. All of the children enjoyed the work - but I was not able to proceed easily the second year."

"Skills were easier to teach, however, there needs to be some type of record keeping other than check sheets for workbooks.

Placement and diagnostic skills tests would be helpful also."

"Not as well. I really missed the assistance of _____. Also, last year I had student teachers and two graders from jr. high. I had much more time to give individual assistance and work with small groups."

"Since I was more familiar with the program it was easier for me to plan and I could anticipate difficulties. Both classes progressed fantastically. However, both groups were high achievers."

"This year my class was at a lower level from last year's. But last year my teaching was limited because I didn't receive all the materials. However, I did manage to get 10 students really involved with the program."

"This year's class was different and we did not finish as many lessons as my class last year. I had more children unable to to get through the higher level workbooks."

"Less work for me, smoother, traveled farther (except for my very slowest students)."

Appendix C

Responses Regarding Student Attitude

"In what way, if any, are students' attitudes toward CSMP different than towards a traditional program?"

The responses are given by grade level, but within grade level they are not in any particular order.

Kindergarten Responses

"They enjoy participation in board work."

"CSMP is more interesting and far more creative."

"I couldn't see any difference."

"The learning is not 'forced' yet students easily grasp the concept and can apply it."

"They seem to enjoy it very much because the lessons were challenging and like a game."

"More exciting."

"I believe it is more interesting."

"Children are enthusiastic and enjoy the lessons."

"Not any."

"Children enjoy the game-like approach."

"Each day is different, therefore they look forward to each math lesson."

"More fun, more personal involvement, greater variety of material presented."

"They enjoy math time, it is not so much of a drill for them."

"More enjoyable - like math."

"More enthusiastic because of stories."

"They enjoy doing the CEMREL work - they seem to like the variety of activities."

"Much more enthusiastic and interested

"Material more interesting and challenging."

"Not monotonous - enjoy 'game aspects', a lot of pride in accomplishment."

"They believe it is fun not work."

"CSMP is more fun for 'kids'."

"Excitement - holds the child's interest."

"Perseverance - to solve a problem or to find other solutions."

"They like it."

"This is the first program we've had, so it cannot be compared."

"CEMREL is fun. All the senses are used."

"The materials let the children imagine different situations and they are presented in a fun manner."

"Develop more logical thinking."

"They look forward to math. It is thought to be a fun thing."

"They love it and want math all the time."

"It's too soon to know. I have no sound basis for comparison at this time."

"The manipulative materials seem to make it more interesting."

"K students are usually enthusiastic about anything the teacher is enthusiastic about."

"More challenging and enjoyable. Children have a better attitude and are less frustrated."

"Students are able to verbalize their number ideas more clearly."

"I have used CSMP since the Kentucky kindergarten pilot program began two years ago. Before that I had first grade so I cannot answer this question. I do not know. I do know the kindergarten children enjoy the work given them."

"My children felt this was a special math program. The Minicomputer was very challenging, lessons were introduced in unique and interesting ways. The books (workbooks) had zany covers."

"They are more enthusiastic and eager to participate. Arrow diagrams encourage the child to express his idea for all to see. The children ask to use the materials and show genuine interest in their work."

"Enthusiasm is high especially for game-type activities - robot, guinea pig, etc. They love the mazes - will build their own with blocks during free play."

"More interested due to the variety of lessons and approaches and flexibility permitting each child to work at his level."

"The children like the activities because they are fun and the materials are interesting (the cuisenaire rods are colorful)."

"My groups were fascinated with most lessons and not easily bored. The low group, however, could not keep up with the ideas presented, but were interested in the presentations themselves."

First Grade Responses

"Don't become as bored."

"Encouraged to do more creative thinking."

"They love math (favorite subject)."

"More attentive and interested."

"About the same."

"Excited about the lessons."

"Much more positive attitude."

"Enjoy math and do problems on own."

"Enthusiastic."

"More excited and involved."

"I enjoy teaching more."

"None that I've noticed."

"They hate for class to end."

"Once students have a background in CSMP they are able to work with a greater success than a traditional program."

"They feel it's more fun."

"They love the workbooks and the art work."

"The students were frustrated with CSMP."

"More fun involved - really enjoy games and stories."

"More varied activities and approaches.

"More involved."

"More fun."

"I think they enjoy CSMP because it is not just working in a book every day."

"Students of high and average ability have a high interest."

"They are more excited and the parents too!"

"A program that keeps as many as possible actively involved as much as possible is good."

"High interest and motivation."

"They enjoy math more."

Second and Third Grade Responses

"They are excited and anticipate each day to see what's new, they love it."

"They enjoy it more."

"Wary at first, then accepting."

"More interesting."

"More of a challenge."

"They like math - all of them."

"They love it."

"Students are more enthusiastic and very willing to participate and experiment with new ideas or approaches to problem solving."

"Students are more excited and more enthusiastic and complain when math time has expired! CSMP has so much to offer in the areas of games and stories that are mind-stickers and the students love math via CSMP."

"The stories made math more fun to listen to. The games were fun and rewarding learning experiences."

"Not a great deal of difference. They don't really want to use the Minicomputer and sometimes would like to be doing something different from their neighbor."

Appendix D

Responses Regarding Minicomputer

"What is your evaluation of the Minicomputer as a teaching device? For high ability students? Low ability students? Student attitudes toward it?"

The responses are given by grade level, but within grade level they are not in any particular order.

First Grade Responses

"High students love it and do well." (10)

"Low students have trouble." (8)

"Good for average ability also." (2)

"Both high and low enjoy working with it." (3)

"Excellent teacher's aide."

"I like it very much."

"The students used it only for adding two or three digit numbers."

"The high ability students find and use it as a 'fun gimmick'. For low ability students it's a torture."

"Children like it." (3)

"Outstanding. My children are thrilled with it. I can't believe the math problems they can handle."

"Great for all abilities! Everyone loves it."

"Student attitude - good."

"I think it is for high ability students and when they learn to do it by themselves they don't want to use it any more."

"Very good for high ability students."

"As adequate as any for low ability children. Students as a whole enjoy it."

"Great for high ability. I think it is as good as any device for low students. They don't understand it easily, but do finally. Students like it very much."

"I enjoyed the Minicomputer. The high ability children found it enjoyable and could do very well on it. The low ability children caught on rather quickly also. The children seemed to enjoy using it."

"It is an exciting tool for both teachers and students. I have had 'high' children and so they have achieved easily. Other teachers with 'low' children have found difficulty. Most of the children like it."

"The children liked using it. The high ability students became quite proficient in its use. For simple addition (1-digit) the slow ones performed well. I feel it helped to build number concepts."

"It doesn't seem to matter whether the student has high or low ability. Some low ability children catch on to it much faster than some children with better ability. I can't categorize it."

"My students really enjoyed working with the Minicomputer. However, they seemed to work better using large Minicomputer set than individual Minicomputer. Great for high ability students. It really motivated them. Low ability kept forgetting value of squares. Only one student who didn't master Minicomputer."

"For high ability students it's a fun gimmick - for low ability students it's too confusing. Student attitude: high ability kids enjoyed it - low ability kids did not!"

"It is very interesting! It is great for high level and average students because it gives them a challenge. Low ability children have difficulty. Perhaps they would do better if they had it in second grade. The children love it and using it."

"The Minicomputer is excellent for all students, although high ability students can do much more extensive and complicated mathematical computing with it. Low ability students can understand the processes involved with the Minicomputer and work simple problems. The low ability students do enjoy using the Minicomputer."

"I like the Minicomputer as a teaching device for it enables first graders to do larger computations. High ability students usually begin doing their own computing without the recording device earlier in the year. Low ability students have to have some help and supervision, especially in backward plays, throughout the year. As a whole, the children have a positive attitude toward the Minicomputer."

"High ability student: superior device. Really brings out thinking beyond teacher presentations. Low ability: best devise I've used with this type of child. Not as much 'thinking beyond', but they use it effectively. Children love working with the Minicomputer, obviously because they can find success with it."

"All of my students enjoy using it."

"Excellent for high students. Low students can work with the Minicomputer but need to be watched so that careless plays can be corrected. Also, low students get confused with which way to move and which checkers to use. They can use the Minicomputer but need to go through the lessons much more slowly than the others do."

"Students really like the computer until they really understand regrouping and then they prefer working without it. They no longer need it and it is too time consuming. I think it teaches many skills."

"I have some reservations about the Minicomputer - after two classes - did it become manipulative without - thought processes - could student see - regrouping - with plays x back plays - also, could 10 be - something other than 8+2, etc. (5(4+1). I used much chalkboard notation when using Minicomputer - for all processes."

"Beautiful - reading of large numbers, place value came naturally. Good for all students - even though some can get confused when you need to go backwards. Like it."

"Too hard to say - you've given the test you should know - as I see it my children did very well - we worked might hard at it and over one-half did the workbook all the way through - 1 through 10 in each set. I still wonder about the evaluation of your course. That is why if you have such a good course you don't give a standardized test to test really what they do know."

"It is an excellent device for the more advanced child and they enjoy it very much. The low ability child has much difficulty especially with the larger numbers, and backward play."

"Marvelous device for teaching any level of ability - high ability students simply 'out-grow' it faster. The students are absolutely enthralled with it. And so are adults who come into the classroom!"

"The children enjoy using the computer. For high ability students it is a good learning device. For low ability students, I feel it is a waste of time especially adding two place numbers. When we got to this type of addition my readiness children were absolutely lost."

"The Minicomputer is an excellent device for all abilities. It takes the low ability students a long time to develop the concept, as most of these pupils don't even know the number concepts and numerals at the beginning of the year. But, taken slowly, they eventually get it."

"I had a low class this year and they loved the Minicomputer. I feel it is a wonderful way to teach addition, subtraction and multiplication."

"While I worked with two Minicomputers at one time, my students understood the process. This was not the case when I worked with three Minicomputers at one time."

"Since all my children are low ability they enjoyed using it, but they weren't very successful academically. They enjoyed the uniqueness of the teacher's magnetic Minicomputer."

"Great for high ability. Low students aren't interested in it after first few lessons until late in the year they begin to show interest."

"The Minicomputer is an interesting device and a valuable one. The children love it - and slow as well as high ability children quickly learn the values for each square. My children this year had a more difficult time learning how to make 'plays' - but still enjoyed learning. The Minicomputer is a good way of learning place value."

"High ability - excellent. Low ability - very good device, but many have problems when they must make backward plays. Students love it - they really enjoy using it."

"The children are able to do so much more using the Minicomputer and are proud of that fact. Even my low ability students can use it. Some of my high ability students do not need it any longer except possibly to check their answers."

"My students liked to work with the Minicomputer. After the children understand the concept of addition through the use of concrete objects and semi-concrete materials, the Minicomputer is a good device for reinforcement of simple addition facts, a means of working with numerals larger than they could otherwise - which is fun - and a good tool to illustrate place value. The same would be true of X, -, ÷. High ability: Good. Low ability: I didn't have any low students this year - just immature."

"Good for high ability students. Low ability does not get the relationships to the number system. Student attitudes are very positive."

"It seems to be most effective with the high ability students. It is a motivational device. They like using it. It seems to 'get in the way' for low ability students and even some children of average ability."

"I like it. Students like it. High ability students do very well with it. Lower ability students not as well."

Second and Third Grade Responses

"Low ability didn't like it." (6)

"Desks were not suited for lose pieces. Too much time to hand out material. Learned place value through Minicomputer better." (3)

"Student attitude was good." (2)

"Good for high ability." (5)

"Students dislike using it."

"It's good to introduce new concept. High - very good, low - they have trouble. The students enjoy using them but by the end of the year they were bored with it."

"I believe that the Minicomputer as a teaching device could present the topics and skills much better than I could do without it. Special plays on Minicomputer (addition and subtraction) are made easier to understand than explanations without."

"Enjoyable for all. Best results obtained with the low ability students. High ability students wanted to check their computations on the Minicomputer. They did not have program last year."

"I like the Minicomputer especially for teaching place value - it helped the low ability students learn place value - high ability did well."

"Very good for teaching place value. High ability students enjoyed it and the low ability students were helped - although some students had trouble with subtraction."

"Good for teaching place values. Minicomputer good for doing things in head - confusing to low ability students. Overall students loved it."

"Both high and low ability children enjoy using it. Low ability children forget how to make the plays when adding, subtracting, etc. and need to be reminded and helped."

"My class this year was just for high ability groups. The Minicomputer was not used by this group very much after Christmas. The program has encouraged thinking so they had figured out all kinds of ways to use their 'brains' instead of the computer. The Minicomputer obviously had a great effect on them in first grade for them to think on such a difficult plane. I found the Minicomputer to be a very helpful device. It was interesting to note how much more quickly the bright students weaned themselves from it. The low ability students continued to use it right up to the end. They would automatically take it out if it was needed."

"Fantastic for all levels. At this point I am not using the program because it is not in the second level. But it should be a continuation from first level."

"I find Minicomputer an excellent teaching device. All ranges of ability seem to understand use of Minicomputer. New students adopted readily to use. Children like to use computers and felt free to use them frequently."

"Once the children mastered it, they used it frequently. Excellent for place value and especially decimals. Ability seemed to be no factor in its use except for the child who was incapable of learning anything."

"It could be a real challenge to high ability students and I found it very useful for low ability students as an aid. It helped greatly in showing place value and computing harder mathematical problems."

"A good concrete tool - in second grade high ability students lost interest in it and felt slowed by the Minicomputer. They became impatient."

"I valued the Minicomputer highly for the average student. This was the class I taught. I thought the students had a good attitude toward it."

"Good for various types of problems (solving of). Especially for average or high ability students. Students seem to be more enthusiastic about it at first, then try to solve problems without it."

"Excellent tool for above average to high student. Lower students get bogged down in the mechanics of it."

"A marvelous, exciting meaningful teaching and learning device. Most devices lose their attractiveness after a time. However, the Minicomputer has an appeal to students that really helps set the climate for meaningful learning."

"I believe it is a challenge for all students. My high ability students were always begging for more difficult problems. (They called them brain teasers.) My low ability students were always trying and they were excited when successful."

"It's very good for the more capable students. After they learn to use it then most of them prefer to do calculations in their heads. I don't think it works well with low ability students until they have a good concept of what numbers actually mean."

"I am impressed with the computer as a motivation device. The high ability students need it for the more difficult problems only. Low ability students use it the majority of the time. It seems to aid in developing concentration skills. The students seem to love the computer. A few of the high average students say it slows them up in their work - but - as a whole, there are very few complaints."

"Low ability students: confused, no grasp of what is actually taking place. High ability: thoroughly enjoy the tasks - even ask for it at free activity. All the children enjoyed the Minicomputer."

"The Minicomputer seems to stimulate the high ability students, and the low ability are able to succeed, using it so it is a valuable device for both groups."

"The majority of students enjoy using the Minicomputer. So far the high ability and average students have been most successful with using it. It has been somewhat confusing and abstract for the low ability children."

"My students just loved the Minicomputer. My class was mixed with high and low ability students. They all learned to use the Minicomputer."

"Minicomputer is an excellent teaching device. For high ability students and low ability students it is good. The students love the Minicomputer."

"High ability students - very good. Low ability students - with help it's good but unable to do it on their own. Students love to work with it."

"Very good for high ability students. The program moves too fast for low ability students. The students enjoy using it about three times a week, otherwise they get bored with it."

"For high ability students the Minicomputer is very good. These children understand the rational behind the math concepts present and can apply them readily. For the low ability students they need to have the number values of each box place where they can see it in order to work successfully. The children seem very enthused about it. They like working with large numbers and how much easier it is to add."

"Good for high ability. My low ability students never caught on. Most were indifferent - they liked it when I did it - but didn't like to do it themselves."

"It was very successful for high ability students. I have taught high group for seven years. Students loved it until they comprehended the math concept and they would automatically avoid using it."

"The Minicomputer is an excellent device for all students (ability is not a determiner). Some of my students learned to make plays without much difficulty and were 'weaned' from it gradually. (Problems were due mostly to short attention span; if attention span was short, the student did not want to work with the Minicomputer.)"

"The Minicomputer is good. It is fascinating to watch them thinking out play. The low ability student learns much more with it. Students enjoy using it. They want their turn with the demonstration Minicomputers."

"It was strange. Some children in every ability liked it and showed an aptitude for it. Some children in every ability disliked it and did not master it as well."

"The Minicomputer is a fantastic teaching device for high as well as low ability students. The students loved it. There was never a day that someone didn't ask to take the Minicomputer home!"

"The high ability student caught on very quickly, while lower ability took longer. Once they understood the squares it became fun, but at first it was frustrating."

"I like the Minicomputer. It was easier for the high ability students. My students did not have CEMREL math in first grade. So they wanted to do their calculations without the Minicomputer."

"The Minicomputer is an excellent computational aid. However, students of higher ability levels often feel that they need not use it as an aid. Often the students' decision not to use the Minicomputer on more difficult problems results in careless errors. They will then immediately use the computer to help them with the problem."

" a) not necessary
b) fair
c) interested"

"I taught low ability students and they enjoyed the Minicomputer. I feel that it was quite effective as a teaching device."

Appendix E

Responses Regarding Overall Evaluation of CSMP

"Please give your overall evaluation of CSMP. Use whatever detail and length you think appropriate. You might attend to what is best about the program, what is worst and how it could be improved."

The responses are given by grade level, but within grade level they are not in any particular order.

Kindergarten Responses

"I think the program is very good."

"I find it difficult to evaluate the program since this is the first year I have taught. The children seem interested and like the activities."

"The program was interesting and I thought well presented; however, the storage of material caused problems."

"I think CEMREL is a fantastic approach to math for kindergarten. It is not boring or tiresome for the children. They seem interested and happy doing CEMREL."

"Excellent. Very good."

"This is a fine program. I wrote our two Senators and Congressman asking to help continue it."

"It works - the children are enthusiastic and enjoy learning with it."

"The stories are most valuable. One can use the lessons to meet individual needs. Not an excessive amount of teacher preparation."

"I feel this is good for nearly all average - above average - high level students. However, much more concrete - level work and repetition are needed for lower performing children. The program moves too fast for them."

"I did enjoy teaching to the whole group, although several could not follow. The children found it fun and appealing on most lessons."

"It was too abstract for many of our particular needs which required involvement with concrete objects first."

"It would help to specify on individual lessons the general objectives."

"I would prefer the company to have already boxed individual sets of K-A blocks and strings.

Also as far as worksheets are concerned, each teacher should be allowed to order only the worksheets he/she actually needs for the next year and not the whole set of kindergarten worksheets. For instance, I have left over from last year and this year all the worksheets number K101 to K109 because these are cuisenaire rod worksheets which are not written on and thus can be used from year to year."

"Probably the best aspect of this program is that it challenges the bright student by presenting to them topics at the kindergarten level that were formerly in the first grade program. It also promotes more thinking and reasoning than did our traditional kindergarten program."

"The worst aspect of this program, as far as I am concerned, is that the spiraling approach is frustrating to some of the average students who are very conscientious. Some of these type children are nervous upon encountering new situations and a steady diet of daily encountering something new or almost new is frustrating. It also seems to bother some of this type of student that the boy or girl next to them seems to understand almost every new topic we have the first time it is presented, and accomplishes the new lesson satisfactorily the first time. Whereas, a second or third consecutive lesson on the same topic would help this average type child to master the new concept and feel success. Of course, here again you run the risk of boring the brighter student. For the slow students, I definitely do not like the idea of not trying to master a new concept before going on to something new. This type (slow) is hard enough to teach without springing something new and different on them every day. They do not adapt or understand quickly enough for this type of teaching. They must be shown and taught again and again the same thing because their recall and memory are poor also.

Probably the best way to teach this program is to ability group the students first and then adapt the teaching method best suited to the group."

"I'm pleased with CSMP. Worksheets are prepared for us, and the children are introduced to new concepts much quicker than with traditional programs. Some lessons move too slowly or don't involve enough children, but I try to skip such lessons and get to the concept from a different approach. Overall, I've enjoyed teaching it. I do wish the worksheets were a bit more attractive with bright colors and pictures where appropriate."

"This is my second year of teaching CEMREL in the kindergarten. I also taught first grade CEMREL this year. After seeing what was done in first grade I was more at ease with the spiral approach and not too worried if they mastered anything in kindergarten. Therefore, it was a "fun year" doing the activities and letting them experience different math activities without worry of what they mastered.

I'm not sure there is enough span in the worksheets as the children could finish two in one minute."

"I think the best part of the program is the spiral approach. If the pupil doesn't pick up something the first time it is presented again - I like this very much - I like the variety of materials. There is so much to choose from that there is a challenging activity at every level.

The one area of improvement for appeal to children at kindergarten level is color - children at this age enjoy colorful things."

"I enjoyed working with the CSMP program. It gave the children a well rounded experience in mathematics. Many topics and areas were introduced and the children enjoyed the variety of materials."

My only complaint with the program came toward the beginning of the year. Children were asked to write numerals as answers to addition problems that had not yet been introduced.

The more able students enjoyed all of the activities.

Some children could have benefitted by more repetition, especially in writing numerals."

"Working with CSMP has been a gratifying experience these past two years. The children and I have both enjoyed the program. I like the spiral approach where a lesson is presented at intervals - though I have presented lessons on successive days where I felt the class would benefit by such. After completing most of the worksheets - I would have the children do their original version of the lesson on the reverse side of the paper. Thus, they could realize success at their level, and I could evaluate their progress as well.

I would appreciate some sort of record keeping for each child and some form of testing for mid-year and end of term to evaluate the student's progress and the effectiveness of presentation of the various lessons."

"As I started in mid-year, I received no special training in using the CEMREL program; it was my first experience with it. However, I found the teacher's manual sufficient and enjoyed using the program. I feel the writing numeral sheets are of great value and also feel that the children gained concepts previously not presented at this level. The materials are easy to use. Some of the papers involving arrows and dots were confusing to a majority of students (Number Friends). The use of the rods was particularly enjoyable for them and even in free play they learned about classification, size, etc. I feel the program is beneficial."

"The kindergarten program is too short. I feel more lessons would be appropriate. Also there needs to be more material on telling time and money."

"I thoroughly enjoyed it and wish it would be adopted by our primary grades. I'm sorry that I will not be using it next year."

"I am very impressed and pleased with the program. The children really enjoy the lessons. I was surprised at some of the things they accomplished.

I think the worksheets and teacher's manual, and KA blocks should be designed to last longer.

In my opinion, the strongest point about CSMP is that the children have fun while learning."

"We started the program late and it took a while to get acclimated to the reasons and sequence of items.

I liked the logical approach to number concepts. I liked the student activities and manipulative aspects.

I could not cover all the materials presented or suggested for kindergarten. I did not have all the materials to be used."

"The basic goals of the CSMP, from kindergarten, the abstract to the concrete is, in my opinion, very good and a natural formation of concepts from the child's point of view.

As stated through one of the questions, I suggested that additions; if and when projected, should bring more color for individual learning (reference-wise)

The page with regard to percentage in performance I could not justify at the end except to state as follows:

Two (2) Classes Totaling 51 Children

Testing results report that 8% rated superior
25% rated high normal
45% rated average
18% rated low normal
4% rated low

in the scoring of numbers.

I plan to use this assessment sheet at a time earlier in the on coming year, toward achievement of goals."

"I feel the program is excellent. The children greatly enjoy it and it is very easy to teach. I like the spiral approach and it is a very relaxed program to teach."

"The program was good for the advanced students, but parents complained of student's papers (with dots and arrows) and the parents being unable to understand the student's work. The tendency of some students to make too many dots and thus confusing himself. It could be improved by eliminating the need for students to make their own papers and also the numeral sheets need clarification on the numeral 7-| and 9-9. It was a unique experience for me to teach the CSMP math."

"I think it is a great program but think it needs room for the study of money even at kindergarten level."

"I was very impressed with CSMP on the whole but I do feel the low ability student needs extra help. Perhaps a traditional program could be used along with the CSMP program.

My higher ability students loved the program and greatly excelled in all topics.

My worst problem encountered was with number friends. This was difficult for a great many of the children.

I also felt the children needed individual number lines which I did end up providing.

I do intend to teach this program when I return to teaching if it is still being implemented."

"I like the CSMP program. The kindergarten had such a variety of learning experiences. The variety that is used to reach the same end makes the lessons interesting. I am very enthusiastic about the program, and am anxious to work with it in 1975-76, after having had this year's experience."

"I enjoyed this math program. It was a further extension of my creative approach. The children enjoyed CSMP and appeared eager and ready to learn. The dots and arrows were fun.

I especially enjoyed the business or management approach that CSMP presented. Logical answers were enjoyed by both the students and myself. Also, negation as well as conjunction provided very rich answers.

I am very glad to see a positive math program started so early."

"The CEMREL program seems to hold a kindergartener's attention because it is fun, it can reach them through "family/friend" situations and it is colorful. The only disadvantage would be that we don't have enough storage space for it and the slower children do find difficulty with some of the activities. Also, some activities need constant repetition."

"This is the first year that mathematics, as such, has been taught in our kindergarten classes. I have been especially pleased with the interest and response of the children. They surprised me with their ability to grasp abstract symbols and concepts. In a class of 35 children only three or four were still too immature to grasp some of the ideas. But these three or four still seemed interested and made some attempt to accomplish the task.

I believe the spiral approach is needed but there should be more time spent on a single concept before it is dropped for a while - and then returned to.

It would help if some sort of simple tests were devised by which students' progress could be evaluated."

"I particularly like the way it can be used informally. I use many of the games whenever I have a "few" extra minutes."

"I think the program is a fine program. There is only one inconsistency which I noticed. Children are taught to write numbers in a certain way (ex. 1, 4, 9) then when they appear on worksheets they are written (1, 4, 9). The numbers should appear on worksheets the way they are taught.

The children really enjoyed the program. I was very pleased with their program throughout the year. I am particularly in favor of the spiral approach to learning the concepts. I would like to see a little more numeral writing and recognition incorporated into the program."

"I like the program very much. It showed me that the children were capable of doing much more than I gave them credit for. My only complaints are the discrepancy between the way the numerals are printed on the worksheets and the way the verses tell the children to make them.

My second and last complaint is the lack of a transitional step between the semi-concreteness of the addition and subtraction lessons and the abstractness of the snake and spiral lessons.

I enjoyed teaching the program and I will feel even more comfortable with it next year after a year's experience."

"Children always enjoy something interesting and colorful to see and use. Illustrating while talking is a good teaching technique because it's a good attention getter. CSMP has many more devices for getting and keeping the student's attention and allowing him to learn in a natural manner such as discovery by experimentation and understanding based on logic. The spiral approach to teaching is especially suited to the younger student.

CSMP does not simply set objectives and then feel its goals are accomplished if the objectives are reached. It does more. It encourages the student and instructor to be creative and adventurous. It appreciates the fact that people learn by group interaction as well as by independent action. Too much emphasis has been put on individual learning recently and not enough on group learning.

CSMP helps children develop better listening and thinking skills. Because many of the activities are group oriented, they can't help but learn and grow socially.

This is a very good program!"

"I like many parts of the program but felt it too repetitious and not gimmicky enough to hold the interest of the children. My children like variety to really learn."

"The best part of CEMREL math is its appeal to both the students and teacher. It used the fun approach instead of drudgery. The children's attention is held better because of the variety of activities. The cuisenaire rods are great and so are the many new ideas. I was really surprised that children of kindergarten age would be able to grasp so many concepts so fully.

The only part I didn't like was the way that some of the worksheets were shipped. (They arrived all mixed up.) It was quite time consuming to straighten them out into an orderly filing system. Also, the large 0-99 charts and number lines are quite flimsy for their rugged use."

"I like the program because it gives sequence to the teaching of math skills in kindergarten and because it develops in the children valuable thinking skills.

I don't like that it provides little opportunity for counting/numeral writing (which I provide extra) and the inability of slow students to learn complicated thinking skills as the spiral lesson."

"Of all the math programs I have ever taught CSMP is my choice from now on. The variety of lessons is pleasing to teacher and students, and I am a believer in creativity which is stimulated in this program.

I like to inform parents of this program so that they can understand the papers that the children take home.

CSMP is a great program."

"I do like some parts of the program in the beginning for introducing numbers and their meaning, but we really need a more structured approach with our children."

"The program has much merit and I have found teaching the program to kindergarten children a pleasure. The goals that were stated in the kindergarten manual seem to have been well formulated.

Although you have indicated that the sequence of lessons need not be followed, I found them to be a fine guide and liked having them arranged by the month. It was much easier for me to have the program thus stated.

The greatest value of all seemed to be cuisenaire rods sheets and other lessons, KA blocks, (free play) and simple mazes. Reading Number Chart and Writing and Counting Numbers. Cat and Mouse story lessons. Puzzles and designs, snake lesson +1 and +2.

The least of value were Robot Walk, Obstacle Walk, Car Tracks, some more difficult permutations, students as Figures, and Guess My Rule.

In all, I repeat it was a very interesting two years and whatever I use in the following years, I'll use many of the fine ideas you have produced."

"Since this was my first year teaching CSMP, I was apprehensive of each new lesson. The teacher's guide was a considerable help in presenting new lessons.

I feel this is an exceptionally good program, the children just love math now, comprehend concepts better, and each lesson is very meaningful. I have been amazed myself at how much the kindergarten children have accomplished this year.

I also hope the program continues since these children are off to such a good start!"

"The program has been well received by my students - they are enthusiastic, and have grasped most concepts quickly.

The quality of the teacher's manual is very poor - it is literally shredded away by this time of the year.

I like being able to pick and choose the worksheets I think are appropriate for my class, rather than following page by page in a book.

The shapes are overemphasized for this group, and became boring - also they were constantly lost."

"I liked the program very much. It was open-ended enough so brighter children could extend a lesson to meet their own potential yet easily adjustable to fit the needs of slower pupils.

The program was most appealing to the children. They enjoyed it and often asked for math lesson. It made teaching of math a much less strenuous task and most enjoyable to teach.

I believe the children gained a greater understanding of number in contrast to the traditional method of teaching."

"I have been happy with CSMP. For average and above I believe it is more interesting and exciting. The small muscle development required by the arrow diagrams is not yet present in many of the children I teach and the inability to succeed is frustrating to them. Also putting down and picking up the correct color or block for the diagrams is confusing for less able children."

"I have been very pleased with the math project. I feel very flexible in my teaching and I am overwhelmed at the large area of materials the children are exposed to.

My biggest fear when I began the project was the possibility that I was introducing concepts wrong and also that I wouldn't finish everything.

I was fortunate to take a Directed Study through John Van Beynen of Northern Michigan University. Whenever I felt the need to consult someone, I called him - which was reassuring. I feel a directed study should be a requisite for the first year.

I would recommend this project for any teacher who is tired of teaching math, has resorted to 'page teaching', has lethargic pupils, feels he is lacking motivation in his teaching."

"CEMREL provides the children with a variety of various activities that stimulate and hold their interest. There are many things to manipulate and handle. The worksheets help to reinforce taught concepts. The children enjoy the stories that teach number concepts. The numeral writing lessons are interesting because of the poems for each numeral. The worksheets on numeral writing tend to be

boring because there is little stimulation. Numeral writing worksheets should be more interesting. The stories involving the use of arrows are sometimes confusing to the children after several arrows have been drawn. The program overall introduces kindergarten children to number concepts that they can comprehend. Parents likewise enjoy seeing worksheets on these concepts. Dittoed letters to parents explaining what their children are learning would be helpful."

"This is my second year of teaching kindergarten, my first year teaching the math, and it is the best program I have yet found. I like the way it brings to focus so many areas of math in such a way that the children can easily grasp. Math, to me, has always been hard to apply (Geometry, advanced math) and this gives a very firm foundation for the math that will follow!"

"Best challenge to the children - interest it created.

I did not find any part that I did not like.

The KA blocks were too easily mutilated by 5 year olds. Track cards slide around too much."

"Having used this program for the first time in kindergarten and not having had any previous training, I found the guide well written and easy to understand. I think I looked forward to each new lesson as eagerly as the children. I liked the spiral approach because it did not stress mastery of a specific area, rather a general introduction into the math world, which is as it should be in kindergarten. My biggest problem, however, in connection with the spiral approach was to assure children who got "upset" when they didn't understand the process (especially working with worksheets) that perhaps they would understand it better when we worked at the process again - maybe in a few weeks.

The main problem with the CSMP program is that it is geared to the above-average kindergarten child and the slow and low-average learner lost out on many concepts. That is why, in my program, I had to use concrete objects and manipulatory devices, film strips, etc. to consider the needs of the slower child. They probably would have benefitted from a less formal program than even the CSMP."

First Grade Responses

"I like it. The children are much more interested in math and get a broader knowledge of mathematics.

The program is a good program - a thinking type program. Too much material to cover!!

Some of the concepts seem too abstract and detailed for the average to low student. Some of the visuals excellent - rods - minicomputer.

Hard to say I know my children got the whole course according to your work-sheets and workbooks they did an excellent job.

1. Record keeping system needed.
2. Measurements lessons needed.
3. Time telling needed.
4. Placement Test and Diagnostic Test needed.

I was never enthused about teaching math until CSMP came along and my enthusiasm is rubbing off on the children."

"I thoroughly enjoyed teaching the CEMREL math and feel it is a good program. I believe the best way to evaluate the CSMP is to echo the thoughts of the parents as --

--'impressed'--
--'favorable'--
--'approve of emphasis on discovery'--
--'motivated my daughter'--
--'love it'--(computer)
--'delighted with the ease J. feels when approaching these problems'--
--'eager to apply math to everyday situations he encounters'--
--'really takes an interest in his math'--
--'the way it was presented was very interesting and made her excited about learning'--
--'comprehension of math concepts growing'--
--'spiral approach which allows for plenty of drill'--
--'personally I'm sold on the CEMREL program. Never once have I heard any complaint from M. about math'--
--'We would like to see more variety in the type of problems and think that verbal problems are very important and hope that CEMREL introduces them soon'--
--'Maybe more pure drilling would help. The most important consideration should be - do they (students) know their number facts without hesitation?'
--'I feel the CEMREL math series is a very effective means of learning. It appears to be an interesting approach for the young child. ---has motivated my daughter and she now enjoys learning about math more.'

As shown the comments did not indicate any direct negative responses. As expressed some parents differ on opinions concerning degree of drill, etc."

I enjoyed teaching CSMP.

The variety of lessons was good. Some children who did poorly in some areas did well in others.

The children felt a sense of accomplishment in multiplication, arrow diagrams and Venn diagrams.

The minicomputer allowed them to work out answers to larger numerals than first graders had been able to do previously. The students liked the workbooks.

The minicomputers were much too abstract for low ability students.

Subtraction could only be done by them with lots of teacher help.

The low ability students had difficulty with the larger numerals.

The levels in the workbooks were good but the levels of worksheets for low and high ability students could have been more diversified."

"Best about the program is the thinking skills taught with this material. It involves the student much more than a "one page at a time" involvement. It teaches a kind of "think numbers" approach which carries the student further in skills than usual book taught math. The material also challenges the teacher and (at least 2) the teacher finds (her-himself) more involved in the teaching material.

Weak points - this was my first year and my material came in in February. I began teaching arrow talk much earlier and found I sometimes became confused.

The teacher manual is a little confusing in its physical make-up. Complicated numbering system.

The material for first grade goes much too far. I had many very bright kids but I doubt if they were ready for at least 1/3 of this material. Teachers tend to feel threatened if a manual suggests they can do when actually the age group is not ready."

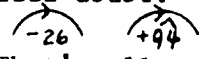
"I think CEMREL I is an excellent program. I was impressed with the organization of sheets, workbooks, and prepared materials which co-ordinated with the teacher's manual.

The teacher's manual was an excellent tool to work with. In my 10 years of teaching first grade, I have never worked with a more interesting program nor have I ever seen such satisfying results in children.

One thing I thought difficult even in the first few lessons was the confusion of numbers in the worksheets as well as in the boardwork lessons - example:
12-21
47-74
14-41

I feel instead of teaching the concept, it hindered the children's understanding of the action of the arrows because they did not know how to decipher the numerals.

Also, I was very distressed by the size of the numbers used in the last one hundred lessons for minicomputer tasks. It scared the children and made them feel doubt. The large numbers also occured in the arrow sheets - example:



That's all - except — Thanks."

"I think it's fantastic! The kids loved it and so did I. However, my kids mastered so many skills early that it became necessary to create more difficult problems than those on many worksheets -

For example: the kids could subtract 36-23 easily without a minicomputer when the subtraction was first introduced. They didn't need the minicomputer. However, I knew they wouldn't be able to do 63-48 because it involved borrowing. With the examples given in the book, they didn't attempt to learn how to use the minicomputer method of subtraction. I knew they would eventually have to learn how for more difficult worksheets. Therefore, I had to "make up" problems they couldn't do "in their heads" in order to teach the subtraction mechanics!"

"I really enjoyed the short opportunity I had to use the CSMP. It was colorful and easy to use after I figured it out. Even with the large number we had (36 students) the lessons went rather well. The kids really enjoyed the stories, the colored pencils, the rods, the worksheets -- but their achievement was little and unstable (an achievement on one day was forgotten the next!). The "spiral" approach helped here but not enough. Of course, this class is not typical -- thank god! -- and I spent most of my day on really just two subject areas -- reading and language. Math was really a treat to them! I can see where with an average group or even a heterogeneous mixture of slow and average this would be really terrific. As it was they sat on the edge of their seats, mouths hanging anxious to learn but it just never got low enough (no matter how I tried to break it up into pieces and even "chew" it for them) for the great majority of them."

"I like the program because:

1. There are new ideas for presentation daily.
2. The children respond well.
3. Children learn to think and speak large numbers early.
4. All children can accomplish something.
5. Students who normally have difficulty with math concepts have accomplished more than they have in any other program I've taught in 23 years.
6. Students learn to follow directions - read directions - and be independent.
7. Parents responded well.

Some weaknesses may be

1. Very time consuming organizing materials at beginning of the year.
2. Several pages toward the end - too difficult for all students."

"I do appreciate the concern of the organizers of CSMP as to its validity to the students learning of math processes and concepts as they are capable of. I realize there is a concern to have the program funded and printed, yet I don't feel this is the driving concern.

I love teaching this program as I feel it's a challenge to any student in their own level of acceptance. The wide variety of lessons and variety of concepts keeps it from becoming mundane. It correlates many of our readiness concepts so important in the first several weeks of first grade. This was so easily integrated with our reading readiness program.

Also, the many Venn diagrams taught some elementary logic and this is not easily found in any traditional program.

This program provided materials and worksheets used by the students in their 'free' time. This helps any first grade teacher.

Also, program lends interaction between students at a high level of meaningfulness.

Cheers for CSMP!"

"On the whole I think CSMP is an excellent math program. I do feel, however, that there should be some basic adding and subtracting problems along with the arrows and dots. I say this because at the end of the school year I gave my students some problems like: $\begin{array}{r} 16 \\ +\ 2 \end{array}$ $\begin{array}{r} 25 \\ -\ 5 \end{array}$ $(10+4)+5=$ and found that they had difficulty in performing the operation at first (because of the way it was written). However, it did not take them long to catch on. Now with the minicomputer they would not have had any difficulty whatsoever. I especially like the idea of the stories and the funny characters for first graders. That idea proved to be very effective in my class. I also do not think that so many different ideas and concepts should have been introduced to the children as often as they were. I think that one concept should be taught for about three lessons before another was introduced. I feel that constant reinforcement would have brought about quicker mastery."

"I rate CSMP as an excellent program in every way. The only drawback is the amount of time it takes to organize material in the fall."

"I like working with CEMREL very much, however, I would like to use it as a supplementary program along with a basal. Many of the lessons were too difficult for some children and I had to go back to number readiness work in September before even using CSMP. I think children should be grouped for CSMP. letting one teacher work with only slow children, and another the high ability. I think it would have much more meaning to both groups.

I like the way each lesson is approached with a game and story. This is much more meaningful to first grade pupils). Pupils remember these and apply these to other learning situations. I like the worksheet and the workbook but I have had a terrible time keeping them in order.

Overall CSMP has been a good learning and teaching experience for me."

"I really enjoyed using this program this year. I was much more enthusiastic about teaching math than I had been in the past. I found myself really getting involved in many lessons. Children could really relate to the stories provided.

I would like to see some improvements in the materials and activities for the slower student. I felt the program was excellent for the higher students.

I felt the teacher training session should have spent more time letting the teachers actually see and use the material their students would be using.

I was frustrated that more time was not allowed. It would have been helpful to know how other teachers stored and managed (techniques) their rooms."

"Having used it only one year, I don't feel I can truly evaluate it. I would like the second grade teacher's reaction next year. I like the daily lesson set-up but finding the materials is a problem. The quality of the paper is very poor and easily torn."

"Please note previous extra comments. The program is excellent. I would like to see more workshqets for daily reinforcement, between periods when there are no workbooks. I would also like to have more durable student materials - like C-rods."

"Upon hearing that our math program was not funded for the next year, my spirits dropped completely. This math program has been the bright spot of my day - and my 12 years of teaching.

The children come alive with this program. Their enthusiasm is something that has to be seen to be believed. The children grasp more, understand more, question more and learn more than I had ever thought possible. I'm very impressed by their mastery of large numbers and understanding of abstract ideas.

I am worried about this program for the low child. Sometimes the slow children can not do even the RI workbooks."

"Very enthusiastic to CSMP. Feel child challenged more and able to go at own ability.

Child introduced to many more math skills.

Concern for slow child."

"I did not get started with the lessons until very late fall because our school system was late getting the materials. It would have been possible to get more done had we gotten them earlier.

The manual in its present form is awkward. Also, I found it impossible to teach the two lessons suggested on the same day.

Also, there should be a greater variety of very simple workbooks - for children who are beyond writing numerals and doing simple counting - but concentration on numbers 10-25 and more simple addition and subtraction.

The idea of the small, individual workbooks is excellent."

"I feel that my math program this year was the best I have ever used. Therefore, I have nothing but good things to say about the overall program. I did have a problem with students coming in late in the year. But they were all low ability students."

"I am pleased with the CSMP math program thus far. Until something proves to be a better approach, I would not want to return to a more traditional program.

This being my second year, I am looking forward to a third year, hoping to arrive at a better evaluation for my students were not as good academically as last year. I found this true in each subject area.

I like the spiral approach because the children are pleased when you mention that you are returning to something for another lesson and never feel that we are just having 'drill'."

"Overall I think that CEMREL is a very good program. The approach is fresh and interesting to the children. My concern is for low ability children:

- the spiral approach is good - but if the children have difficulty and the concepts are not simple enough for them, what is the benefit to them
- there were many times that I had difficulty justifying the use of some lessons in CEMREL-knowing that my children were not proficient in numeration (for example)

  The level of ability of so many lessons seemed to increase so quickly that the low ability child seemed not to be considered. Example - working with addition in the teens/or numbers in the hundreds.

This is the area in which CEMREL needs improvement."

"I feel that CSMP math is the most outstanding math program I've ever seen. Never have I enjoyed teaching math as much. More importantly my class is always anxious for math. I can see a much deeper insight on the student's parts as to the 'whys' of the mathematical processes.

Parents are overly concerned about the minimal number of worksheets and the lack of testing so for the past three months I occasionally make up a 'test' for the class.

My only suggestion for improvement is to have the minicomputers of a more sturdy nature. They are easily ripped and detached by the perforations.

I LOVE CSMP!!!"

"CEMREL is excellent for the more advanced child. They have accomplished much more academically than in the traditional programs.

For the lower ability child it was more difficult due to short attention span in regard to the stories and mental problems.

Leveling would give more time for children working at a slower pace and the more advanced child would become less bored."

"I felt the progress my bright students made was beautiful. Their understanding of math - fantastic. I felt my average students did well and certainly gained more than they would have in a standard math program. (I did check four teacher's manuals to see what the standard math presented.)

I did have an extreme amount of difficulty with some slow students with arrows and the minicomputer. Although I believe these students were more interested in math than they would have been in a standard program. I feel they were not tuning me out which will certainly help them to gain more later on in school."

"I liked the program it was a little hard at first but another year would be better. I feel the children understand math better. There is not enough practice work."

"I think this is an excellent program. I believe that it reflects the aim of most teachers, which is to guide the child in thinking skills; i.e. teaching him how to think rather than what to think. The students have a healthy and happy approach to math and it is intriguing and stimulating their curiosity and keeps their intellect active. It is unfortunate that most of these students are tested according to set norms established and valued by those institutions yet unaware of the fast and growing changes in our culture and the needs of the students and citizens of the future.

I do feel that there should be a great deal more computation drill work as it would help these students to have more number facts at an easy access when the approach unknowns thus a strong foundation to jump from and a wider range."

"Participating in the CEMREL program has been an exciting adventure for my 34 Primary One (First Grade) children and me. We have been able to do mathematical things that are such incredible achievements for first graders that I can't believe my eyes when I see their accomplishments. I've been teaching in the primary grades in Detroit since 1959 and in all of those years this is the only truly fantastic thing to happen for my children. For the first time we have the means to compete with children of much better means because their parents are wealthy and provide excellent home training and educational facilities. My children come primarily from poor families with limited means and interest in education. CEMREL is one of very limited marvelous happenings for my deprived children and I am most appreciative and grateful to the CEMREL people."

"Math is fun! I enjoy new programs because they challenge me, and help me continue to search out better ways and techniques to reach children.

I believe this particular program does provide some good exercises for the child with learning disabilities. I found the tangrams especially good. The section dealing with shapes, colors, and textures was excellent - any detail exercise lends itself to the total first grade program.

The minicomputer is fun and interesting, but what will the child do next year when no minicomputer is available? This was one of my real concerns about the program.

The program needs to allow more directed plans for number formation - I had additional plans for this as I had many reversals and poorly written numbers.

I found the lesson plans as time designated went much better if I followed them closely."

"CSMP is by far the most comprehensive and exciting math I've taught in my 22 years of teaching first grade. My graduate work was in reading and to be honest, I disliked teaching math. This is no longer true! Even though I do not have a math background, I feel my students are excited and are learning many concepts my classes have missed before.

I have no criticism of the program, only praise. If anything falls short, it has been in my presentation - not in the materials.

Thank you for 'opening my eyes' to math."

"This has been my first year teaching this program. I have been very much impressed with the results thus far achieved. I have enjoyed teaching the lessons. The activities and follow-ups have been varied, thus eliminating boredom. The children have responded enthusiastically and find that math can be fun."

"I think the CSMP math program is one of the best and most interesting programs that I have had the pleasure of teaching and I have just completed my thirty-first year of teaching. People who have observed in my classroom were amazed at the activities and large numbers used by the pupils while working with arrows and the minicomputer. They were also impressed with their work with fractions and negative numbers. All of these, I consider to be strong points.

The only improvement that I would like to see made is the provision of some means of teaching the numerals 1-20 to the low ability pupils before progressing to some of the more difficult lessons which assume that they already know these numerals.

I had a good year, and am looking forward to the coming year with CSMP.

Oh! I would also like to see some type of 'End of-Year' evaluation for the pupils in order to compare our progress with pupils in the 'traditional' and 'new' math programs."

"I enjoyed teaching the program. My children were enthusiastic with the materials and stories. I do wish, however, that there had been more work with sets and number lines. My slower children needed more concrete ideas such as these."

"On the whole, CEMREL is a very good, interesting math program as far as teaching and learning are concerned. The variety of activities keeps the children interested.

I am concerned with the lack of remedial work. I teach a readiness class and feel much of the work is just too hard. It definitely should contain easier material.

There is no way I can have two math lessons a day. Too much is expected to be covered in one year."

"I feel that the overall CSMP program is very, very good. The children respond very favorably to the game and fun like presentation and they seem to really grow in thinking skills.

I especially like the spiral approach and the quick pace that is presented.

The program has been rewarding for the children and enjoyable to teach. I am looking forward to continuing it next year!

"During my thirty-one years of teaching I have taught many math programs. After teaching CSMP I can truthfully say this is the best program yet. It is exciting and meaningful. Never before have I had students to say, 'This is fun' during a math class.

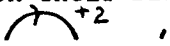
Four or five students who are considered slow learners are so excited because they can do many things on their own.

I would like a better way of displaying the minicomputer. When I hang it, it falls. When I stand it, it bends."

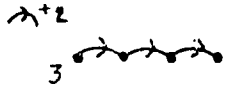
"I feel these things should be added to the program.
1. Placement and diagnostic test,
2. Better method of record keeping,
3. Telling time and measuring (metrics)
4. Two-place addition without minicomputer.

The children have trouble doing two-place addition without the use of the minicomputer."

"I think the best thing CSMP has going for it is the student appeal of the program. I feel it is an excellent program for average and above average students and provides them with a chance to develop their mathematical thinking and gives them as much challenge as they can handle.

The lower average on down, however, often seem to become lost shortly after the beginning of the program. These children struggle for every new skill they acquire. For them, adding two numbers on their fingers is a challenge, and they never quite get the idea behind a  diagram, for example.

For these, especially, I sigh when I think of all the time and effort spent on learning to use the minicomputer, or working out an arrow diagram, which could have been used in getting a good grip on the + and − tables or some other traditional skill which will be with us long after the last minicomputer has been laid to rest.

CSMP has the finest intentions and I realize they try to present 'drill' in interesting ways, but few of my students associate and make the transfer between  and $\begin{array}{r} 2 \\ 3 \\ \hline \end{array}$ $\begin{array}{r} 5 \\ 2 \\ \hline \end{array}$ $\begin{array}{r} 7 \\ 2 \\ \hline \end{array}$, etc.

This is why I have supplemented the program so much. But at least they're trying to provide a fresh approach with a high quality mathematical content, which teachers and students alike appreciate."

"I like the program very much. The children seemed much more interested in this program than in the traditional one. I liked the way the teacher's book had been planned. The teacher is not required to spend so much time planning her lesson.

The quality of the paper that is used in printing is very poor. The charts and number lines will not last."

"C-rods and minicomputers were favorites of the children.

To introduce ¼ I brought six apples and a knife to class. I had 22 children. Problem: how many pieces for each person to have an equal amount to eat?

6X4=24 - one for the teacher and one for the principal. Neatly solved by three-fourths of the class before we cut the apples."

"The CSMP program helped to show me that better students are capable of much more than I expected. Their minds really do grasp the concepts of math. The story lessons were really interesting to the students much more than just presenting material and telling the child to work a page in the math workbook.

I think CSMP gives the child a chance to figure out things with manipulatives and discover answers on his own and understand his answers.

I feel that the program needs to have worksheets and workbooks of a lower level for some students. The program progressed too fast for the slower students.

Some of my children have just now began to use the minicomputer on their own to add and subtract,,and then there are about three students who still have trouble with the ones board.

All in all I really think the program has more good points than bad ones and I have really enjoyed teaching it. I am looking forward to teaching only one class next year so I will have more time for individual help."

"I enjoyed using this material. The manual was very complete. I have never felt I was very good at teaching math. I feel my students have a better understanding than I've ever been able to give them before."

"I have enjoyed teaching the CSMP program. I especially liked the story approach, the minicomputer, the variety of materials and lessons, and the individual workbooks. I also approved of using large numbers with the first grade and the mental arithmetic sessions.

More work could be done in the areas of money, time, and measurement. I also feel the students should be given word problems to figure out independently - the problems should be printed on paper.

I have not had as much success with the program with low ability students as with the average or above groups. Some of the lessons seemed too abstract for them."

"I like the program and for the most part enjoyed teaching it. The children loved hearing the stories. Most of the material was grasped by the students.

The minicomputer is good but I believe the lower ability children need more concrete experiences. I had some who knew where to put 40 or 80 or that 10+10=20 but they didn't really know how many 40 is.

The arrow diagrams get a bit confusing when there's so many arrows drawn in."

"I have really enjoyed this program. I feel the children were able to learn quicker and understand better the concepts presented and enjoyed doing it.

The stories were very imaginative and intriquing to first graders.

I would like a little more help for the lower ability group as they would forget before they got back to a particular subject and they had trouble with the worksheets.

The time element also bothered me - I took longer than the recommendations and thus didn't progress as fast. Also with the length of lessons, if you want to divide the class into groups and present different, there isn't time."

"I do think there should be some sort of tests available!

I like the program very much. I came into it brand new in November and had to teach myself along with the workshops.

I find it hard to always finish the lessons called on in one day.

My children have been of high ability and have achieved easily. However, I know some children have difficulty with the program. They cannot grasp the 'minicomputer' idea. These I do feel should be in a more traditional math program."

"CSMP program is a fantastic program. I enjoy teaching it. It is geared more to the higher achievers. They can progress far beyond a regular first grade math program. They are exposed to so much and in such an interesting way that it is more like fun and games than typical math workbooks.

But for lower achievers by the second time around they have forgotten."

"The students in my primary I classroom have been very successful in CSMP. I have enjoyed my first year of teaching CSMP. Even though my CSMP materials were late, I still feel that the students in my class showed more progress in math than a regular traditional program.

I evaluated the growth and progress of my students through individual conferences with each pupil and through simple teacher-made games where I was able to get a percentage of students who showed mastery and a percentage of students who would need reinforcement.

I feel that CSMP gives the students a chance to think, reason and act and I feel that students show mastery in objectives in other areas of school subjects with a CSMP background."

"The best thing about it is that the children and I both love to do math with this program.

The worst thing is that the low ability students tend to stay behind because there is not enough time for me to spend with them individually or in a small group during the time we have for math.

Suggestions:

Have a number line or chart to use at the beginning of the year which has raised numbers or some kind that the children can touch and feel the shapes. Also maybe dot cards like this."

"The worst thing about the program is student working on some concrete material every day or more often than is used by the program. Students could do well orally, but could not carry over. I think this is because the teacher did too much directed teaching and the students didn't have enough concrete worksheets, etc. to do on their own after the directed teaching lesson. Also I think the spiral was too far apart for slower students. Too many lessons lapsed before you went back. By this time, with no worksheets to keep up the review students had already forgotten what was taught."

"CSMP is the most exciting way to present math that I have ever experienced. I spent a year as a remedial math teacher in grades 2-6 before I taught this first grade program - I'd love to use CSMP in remedial situations to see if it would make a difference.

I have always valued math as a reasoning relationship process and CSMP is a dream come true!

An exciting and effective way to teach children to enjoy thinking."

"In many years of teaching first grade math I have never enjoyed a year as much as this one using CSMP. Day after day I was astonished at the response from the children to the approach made by CSMP. I find the children further ahead than previous years in skills and concepts and their attitude towards math is fantastic. When it's 'math time' they are delighted. I did find I needed to spend more time on some lessons than the lesson plans called for."

"The best thing about the program is:

1) Excellent teacher's manual
2) High student interest
3) Flexibility of lessons to meet individual class needs
4) variety of methods used to present lessons keeping out monatony

The worst thing is the expense of the program. Also perhaps more worksheets are needed on level of slower children.

If minicomputer boards could be laminated (both teacher and student) they would last for years. Also F-blocks and the numeral and dot cards could be laminated. Some of the supplementary 6 and 7 workbook series could be eliminated."

"If I were teaching first grade next year I would use the program again and hopefully cover more lessons. Experience would allow adjusting the program to my own needs - leaving out some lessons, emphasizing others. I have no objection to the spiral approach, but I did feel that there was too much bouncing around - that two or three follow-up lessons on a topic would help before dropping it for a while. (Being more familiar with materials would allow for this adjustment.)"

Off hand I think it's a great 'supplementary' program for any math series. It's fun. The children like it. I enjoy it. After becoming thoroughly familiar with materials may see it as the basic program.

When is mastery of various topics expected to occur for average child? In past programs I knew what most first graders I worked with could be expected to do by specific times of the year. What criteria do you use for CSMP? A periodic test to indicate achievement until a teacher uses the program a while would help. It's easy to overestimate achievement based on group situation with feedback and clues from group and teacher. Perhaps I could have used workbooks differently to obtain this information - need more time to adjust to program and to adjust program to individual situation to be able to make more accurate comparison."

"I was very pleased with the math program. I really feel that it gives the better students an excellent chance to excel.

A few improvements, that I see, which could be made are:

1) Another form of marble shaker
2) An easier tangram book with block pieces outlines for slower students
3) Some math readiness for new first graders who have not had kindergarten

Overall - I think the program is GREAT!"

"Cut down on the volume to be covered. It's entirely too much. With all the subject areas to be taught and the locking in to scheduling it is totally unrealistic to think that I would have two or three time slots a day for math."

"The majority of lessons beyond about #150 seemed geared for extremely intelligent 'brain children'. I had to slow down after Christmas because the majority of the class was getting lost. I talked to other CEMREL teachers who did likewise. The parents do not understand or like the 'spiral-approach'. It sounds so great in theory but doesn't always work so well in application. They want to see basics taught at the beginning and I agree.

The minicomputer was great in the beginning. It was so exciting, however, after the new approach wore off only the smartest children or those highly motivated towards math materials were successful with the minicomputer. There is such a heavy reliance on it and no continuity except within the CEMREL program.

There was too much 'helter-skelter' jumping around. Example: the children would just begin to understand addition on the spiral and there would be a vast difference in the size, i.e., 1+2=3, 3+1=4, 4+1=5 and 64+1=65, 65+1=66, etc.). Many of the children could not make that big jump. They were still trying to read and write numbers to 20.

I felt that the writers of this program were trying to expand on the abilities of the bright young child but were not fully cognizant of the lack of ability or perhaps background and also most importantly the readiness factor involved in teaching young children.

My class might enjoy math more due to a CEMREL approach, but if it weren't for teacher-made materials and parents working at home they surely wouldn't know any more."

"Best features of the program are the interest level and the spiral approach. Also the thought processes (mental arithmetic) elicited from the children. Worst features of the program are: 1) not enough review and remedial number work for the slower children, 2) too many lessons in the program -- material used on these higher numbered lessons is wasted, 3) too many loose parts to organize, 4) picture posters are not referred to in the lessons. This results in finding out too late that there was one for a particular lesson.

Improvements: Provide A worksheets bound together for each child. S& R papers could be loose. Provide more review lessons on addition and subtraction of small numbers - not on minicomputer. 'Magic Peanuts, negative numbers' - is that really necessary in a first grade program? We didn't get that far. Understanding of addition and subtraction was not complete in all children, so I skipped introduction of new math ideas and continued concepts lessons already introduced."

Second and Third Grade Responses

"Advantages - Fun to teach. Lessons are different every day so we don't get bored. Very well laid out program with clear instructions for the teacher. I like the different levels of mastery approach in the series (everyone can achieve some of it all the time).

Disadvantages - Grading and handling of so many papers and booklets. Not enough subtraction emphasis. We need time of day taught in second grade program - at least hour and half hour.

Improvement - Series should be taught system wide through all levels and the program should be continued for years. We lack continuity in our curriculum program in (district) and this can give teachers some of their biggest problems. (Of course you can do nothing about this except to keep selling your program.)"

"I think it is a very good math program. An understanding of operations is much greater than I have seen in other programs. I feel the CSMP program is lacking in methods of evaluation."

"I think the program is especially good and challenging for the high achiever. The child of lower capabilities seems to get lost in the mass of materials presented. When this happens he tends to stay lost or have a very hard time in getting on an even keel with the rest of the class. I think one of the weaknesses of the program is the mass of materials, worksheets, and workbooks that some of the pupils don't get to use.

Some sort of testing material, during the year, to give teacher some idea of child's progress in comparison to other children would help.

I enjoyed doing the program this year, and if possible, would look forward to another year."

"I enjoyed teaching the program and felt the kids enjoyed it more than a traditional program. At times I felt the slow kids had a difficult time with certain operations, but on the other hand they did well with other arithmetical concepts presented here but not in a traditional program, such as probability, combinatorics, etc. The program seemed to help stimulate thinking on the students' part, more so than a traditional one. Sometimes I felt certain concepts were 'forgotten' by students in the spiral approach, and therefore it took longer to 'catch on' to the second lesson on the same concept - longer than suggested in the manual."

"I rate the CSMP program above the usual book approach to mathematics. I am teaching both CSMP and non CSMP classes this year and the gains in CSMP have greatly surpassed the other class. The CSMP class had more enthusiasm and interest; therefore, providing a longer attention span where more learning could take place. The slow learner also shared the above feelings and felt very successful! I'm all for the program."

"CSMP has been a good program for most of the students in the high ability group. I am excited to think that these children are able to add huge numbers, do multiplication and division to a good degree and work with negative numbers. They have been exposed to logic, geometry, and probability. All of this is very exciting to see young minds grasping things that are not usually introduced until their later school years.

I do feel a little uneasy in their understanding of subtraction. It comes much farther along (in more detail) in lessons that we did not reach. So we have just scratched in the surface on learning about subtraction. Also I feel like the children will be weak on other topics such as telling time and working with money. Many of the games had to be omitted because in this open classroom the noise disturbed other classes. It's not that the children were noisy but that the articles to be handled were noisy (marbles, rods, etc.).

Also, on many occasions I did not have enough worksheets for my class. These packages are available in packs of 30. I was wondering if there were enough teachers with my problem to warrant some packages of 35 sheets each. I did have over 30 children and it was difficult at times to find extra sheets because most of us have 30 or more children in our classes."

"They understand math concepts much better. It makes them think. They enjoy the program."

"The most difficult part of the program for me has been the log. It should not have been a burden since it takes so little time and is so necessary for your evaluation. Nevertheless, it was. I've done one horrible job. Will try to do better next time."

"I enjoyed using the program and found it an excellent and challenging program for average and high ability students. There should be more activities for low ability children. The workbooks were well done and the students eagerly waited for the math periods that we used them. I would have liked to have eliminated the minicomputer in second grade as my students hated using it."

"I attended workshops because I wanted to return to first level.

The program is fantastic from what I have observed and used in my classroom. At this point I wish I were involved in the program. The children learn the basic skills much faster with manipulative materials such as your program provides."

"The materials are interesting to the students -- never a dull moment. Best program I have seen to develop thinking abilities. Evaluation of students by means of a pretest and post test is needed."

"We entered into the program in November with children that had had no previous training in this type of math. I feel the program has been an experience that was unfair to the children, teachers, as well as to the program. I think it will be better next year. (I hope.)"

"I enjoyed teaching CSMP this year. I regret not having it next year.

I particularly like the way regrouping (add and sub.), place value and fractions are taught. In addition, the brighter student is challenged in all areas as compared to past years when I felt I neglected him.

I have mixed feelings concerning the minicomputer. I don't know if it was because of this year's large class and/or the fact that about half had never seen a minicomputer before, but to master the method would have been impossible, so in the fourth quarter we didn't stress the minicomputer."

"Under normal conditions - where pupils had been in it for their first two years, I think it will be interesting for them and very satisfactory.

Since I used it such a short time - I really can't answer."

"In the first place I like to teach math, but never find enough time. To me it's easy to understand but we haven't had enough time to crowd so many new ideas in one year, and teach other subjects too.

The children were delighted with the minicomputer and math games. Given time I believe they could all do well, but many need individual help.

The road building with whole and negative numbers was enjoyed by most of the children. 'Solution sets' confused the students somewhat, but given more time I'm sure they would understand.

It's a good program but should be compiled in a book for each child to study in. Good luck with your program. I've enjoyed teaching CSMP."

"I must admit I had many misgivings in September as to the value of this program, but they've all been dispelled one by one. Throughout the year I have had many observers from Northern Michigan University, and all were completely amazed at what these children were capable of doing. I have always enjoyed teaching math, but this was the best year ever.

The children never tired of doing the workbooks, and rarely did they need to ask for individual help. If it hasn't done anything else, it definitely has taught these children to think, and to be able to calculate in their little heads without having to run for a pencil and paper.

My only objection would be that the program is extremely time-consuming, both in preparation and in checking workbooks. However, I made a point to check each page of the workbook carefully and then go over any problem areas as they arose. I'm sure a parent with a family could never devote as much time to the program as I was able to do, but for me, it was sheer delight to note the interest and advancement of the children.

Please provide a positive and negative number line for future teachers.

Thank you for a beautiful and exciting experience in this, my last year of teaching."

"I must say when I started out with CSMP I had a negative attitude toward the whole program probably because we had not had proper training at the beginning of the pre-planning days. It was thrown at us so to speak. I did enjoy teaching and watching the children develop and grow with this program. My class did a good job and I was proud of their progress."

"CSMP is the greatest! We four third grades at (school) have enjoyed the program so very much this year. We found it very interesting to teach and, also was exciting to the students. I've taught math nine years and this program generated more enthusiasm than any textbook I've taught. We think the children have accomplished more in math this year. The slow learners were more interested and accomplished more, whereas the brighter students were taught to think and reason. They never complained about workbooks and really loved to work and work in them. It was easier to group them with the workbooks and allow them to work at their own speed and ability.

Our third graders had the math for the first time this year. I'm sure more could be accomplished if these students could have started out in the first."

"Since I did teach third grade, the program is hard to evaluate, because we used second grade materials. I think I would be better qualified after next year to evaluate. I think it does do a good job teaching intuitive thinking. The children love it and therefore are interested in each lesson."

"Best: The material is interesting, sophisticated, and yet, much of it is not too difficult for most second grade students. Since I did not (for lack of time) cover nearly all of the work. I cannot comment on material beyond lesson 126. The program is inviting and challenging for children (and teachers).

Worst: I became filled with anxiety toward the middle of the year because I could not cover as much material as I had thought. I think the contributing factors were - lack of training and knowledge of the program (I need more instruction) and too much second grade material. I could use at least 12 more hours of instruction to be fully oriented to the work. (I never saw a CEMREL math class taught - never observed or was observed!) I began to have nightmares about the amount of correcting that I had to do in the workbooks. I never really caught up! It was too much of a work load for a primary teacher (we do not have aides or more than a 30 minute break in a day).

Improve: Quantity of material to be taught should be reduced. Quantity of written work (workbooks, primarily) should also be reduced. More time allowed for some lessons and some repetition of lessons deleted."

"This is about the most rewarding program for students and teachers I have encountered. In this program every child is able to attack some task successfully. This is a very rewarding thing for children.

The spiral effect is quite wonderful because those not accomplishing or grasping the lesson the first two times are able to do so in later lessons. This program was really fantastic teaching multiplication facts.

The one thing I object to is the checking of workbooks is very time consuming. Another problem is that teaching children in third grade this program, using the minicomputer, was undesirable on the children's part. The children had learned subtraction and addition in another math program and it was difficult to try and learn on the minicomputer."

"I've really enjoyed teaching CSMP math. The children have been enthusiastic about it except for those few who have been influenced by their parent's negative attitudes.

I'm glad I had the opportunity to teach this math. I think it's a good program."

"The best thing about the program was the enjoyment and interest of the children for math. The program helped the students to do more in their head without writing it down on paper. The program teaches place value very effectively.

The problem for my particular situation - was that third graders already could do some of the materials and then in the third grade we went into this program. It would have been better to begin this program in the first grade."

"The CSMP program is excellent. The spiral is the success of the program. There is a certain amount of anticipation each day.

In our Weekly Reader, bicentennial bike travelers were mentioned. The children were asked what of historical importance such as monuments or sights the bikers may find. One little girl felt the math program would be a good historical sight. The children readily agreed and we proceeded to map out our lessons that we would present. The minicomputer and arrow diagrams headed the list.

It is the best math program I have ever taught."

"The materials were easily damaged. The magnetic checkers covers came off. Marble shakers collapsed. Marbles came out of holes.

I liked plenty of worksheets without having to run off on ditto. We have no secretarial help for this purpose.

The advantages far outweighed the disadvantages of the program. We were told it was a pilot program, therefore we were aware of some possibility of problems and areas that needed corrections.

The printers or proofreaders did a lousy job. Again I realize it is partly a money situation. We get what we are able to pay for.

I have thoroughly enjoyed the program and am certain I can do a much better job with it in the future years. I was learning new teaching techniques and procedures.

I liked all being on same worksheets and not being required to do all. Just do what they could. It made it readily visible who was having difficulties either with concentration, sticking to job, or concept.

I would like a 'spelled out' evaluation system as our school requires grade cards."

"The CSMP program provided me with my first real opportunity to actually teach math. In a true teaching situation the teacher learns along with her students and never takes anything for granted. Sometimes I felt a little uneasy or a little unsure but this was good because it kept me alert.

The best thing about this program is that it gives the students the opportunity to think. I love the arrow diagrams and roads, combinatorics, the permutation lessons involving shapes, and the probability games because the students are given the opportunity to speculate and formulate an answer that they believe could be correct. I was amazed by the well-developed thinking processes that my students used.

The CSMP program allows the students to manipulate the materials and this is essential in order to establish a good math background. Use of the translator, minicomputer, spinner, marble shakers and the white and orange rod rulers, etc., have given my students something concrete to manipulate and match with the mental learning process.

The complaint I have has to do with the workbooks. Some workbooks contain too many pages and scheduling is a problem. Because of my large class size, I used two days for every one scheduled. Otherwise conditions would have been so chaotic that nothing productive would have resulted. The decision to schedule workbooks for two days instead of one day allowed me to circulate among smaller groups of children and give assistance to anyone who needed my help. However, this situation also slowed down our progression through the lessons.

I enjoyed teaching CSMP math. I am convinced it is a good program. The Iowa Test of Basic Skills test scores prove this. Twenty-six (26) of my forty (40) students received composite scores of 2.0 (second grade) and above on the math portion of the test. Nine (9) students received composite scores of 3.0 (third grade) and above. The highest composite or average score was 3.8 (third grade, eighth month)."

"Teaching CSMP has been one of the most satisfying and rewarding experiences in my teaching career. Not only does CSMP offer a great deal of student involvement in the program but also the program accommodates for students of high ability as well as low ability. Consequently, student interest is high and the enthusiasm in CSMP is unmatched in a traditional program."

"A more sophisticated procedure for evaluation of individual progress would enhance the program."

"The CSMP program is an interesting and fun way for children to learn math. More were 'turned on' by the stories and games than would have been by a traditional approach. However, I think that sometime during second grade they should convert from the minicomputer to non-use of the minicomputer for addition and subtraction and possibly multiplication (2x39) etc. too They find it fun to be able to do the math eventually without their comput The computer helps them to understand what they do in the shorter method th gh; so I feel it needs to be used for a while. For slower students it seems to be more trouble to learn with than just teaching them the traditional way. Perhaps this would not have seemed to be true had these second grade students had the program in first grade."

"I have not minded offering time to your evaluation program throughout the year. I strongly agree that it is essential to the further development of the program BUT I find this questionnaire a bit annoying. Why was I interviewed on tape and asked for my opinion in writing on another set of questions when the same materials were going to be presented in this questionnaire. At the end of the year, teachers are rather swamped with other responsibilities and repetition of questions, that have already been responded to, is unnecessary. No wonder you have such a massive amount of material to plow through!"

"For the most part I like it. I would prefer mastery in one area before going to a second. Help in grading workbooks is needed."

"My overall evaluation of CSMP is that it is good. It is a combination of the old with the new and has an approach that is geared to the today's children and their frame of mind.

Since I didn't teach all the lessons, I didn't run into anything I would change. On a day to day basis my low class seemed to learn more, especially those that were capable of learning."

"The high point of this program was the ability to attract the attention of the students. They loved working with the various materials and made learning fun.

I felt a need to evaluate these students and there was no means available."

"I think the CSMP program is one of the best I have worked with in my six years of teaching. The children actually enjoy doing math. Of course not all children succeed at the same level but I have found that there is an area of competence for each child.

The children of higher abilities really perform well in this program. The program provides many challenging opportunities for them to excel.

I have found very little difficulty with manipulation of materials.

I have enjoyed the CSMP program and am looking forward to another successful year."
