

APPENDIX E

Classroom Observation Protocol (Curriculum Specific: Math Expressions)

ROUTINE 1 - specify:

Time: Begin : AM PM

End : AM PM

A. Teacher Initiated Instructional Behaviors

Frequency of Instructional Behaviors (tally frequency for instructional behaviors, not directions or class management)
(enter total of "21" for 21 or more tallies)

Total		Tally
1 <input type="text"/>	Asks close-ended questions (teacher accepts only one answer)	<input type="text"/>
2 <input type="text"/>	Poses open-ended questions (tally number of different responses)	<input type="text"/>
3 <input type="text"/>	Tells information, models procedures, or shows students how to represent concepts	<input type="text"/>
4 <input type="text"/>	Guides practice on problems (tally number of problems)	<input type="text"/>
5 <input type="text"/>	Elicits multiple strategies /solutions (tally number of problems)	<input type="text"/>
6 <input type="text"/>	Uses representations (tally number of types of representations)	<input type="text"/>

B. Teacher Feedback

How did the teacher provide feedback to students?

Teacher Response to student answers:

1 <input type="text"/>	States if correct or not without elaborating or repeats what child said with indication of right or wrong	<input type="text"/>
2 <input type="text"/>	Calls on other students until the "correct" answer is given	<input type="text"/>
3 <input type="text"/>	Provides correct answer right away (no probing for thinking or hinting)	<input type="text"/>
4 <input type="text"/>	Asks class if they agree or disagree with student's response	<input type="text"/>
5 <input type="text"/>	Takes student through step-by-step procedure	<input type="text"/>
6 <input type="text"/>	Tells student strategy to use	<input type="text"/>
7 <input type="text"/>	Elicits other students' questions about the student's response	<input type="text"/>
8 <input type="text"/>	Labels math strategy, problem, or concept	<input type="text"/>
9 <input type="text"/>	Repeats student answer in a neutral way (no indication of right or wrong)	<input type="text"/>

Teacher Guidance and follow up questions:

10 <input type="text"/>	Probes for reasoning or justification of solution	<input type="text"/>
11 <input type="text"/>	Provides hint to students	<input type="text"/>
12 <input type="text"/>	Clarifies what student says or does	<input type="text"/>
13 <input type="text"/>	Extends what student says or does	<input type="text"/>

Teacher Praise:

14 <input type="text"/>	Uses praise or makes positive comments focused on content	<input type="text"/>
15 <input type="text"/>	Highlights student work or <i>solution</i> to class	<input type="text"/>
16 <input type="text"/>	Praises effort or behavior	<input type="text"/>

C. Evidence of Instructional Behaviors

- 1 Yes No Connects lesson to **prior knowledge**/instruction
- 2 Yes No Guides children in **acting out a problem**
- 3 Yes No Leads children in a rap, **song**, or fingerplay to illustrate math concept or practice
- 4 Yes No Uses children's **book** to make connections to math concept
- 5 Yes No Connects math to **real life** problems or situations
- 6 Yes No Directs or encourages students to **help one another** with math
- 7 Yes No Prompts child to guide practice or **lead class** in a routine
- 8 Yes No **Counting** By: One Two Five Ten One Hundred
 Three Ordinal Other:
 Backwards

NOTES

ROUTINE 2 - specify:

Time: Begin :

AM
 PM

End :

AM
 PM

A. Teacher Initiated Instructional Behaviors

Frequency of Instructional Behaviors (tally frequency for instructional behaviors, not directions or class management)
(enter total of "21" for 21 or more tallies)

Total		Tally
1 <input type="text"/>	Asks close-ended questions (teacher accepts only one answer)	<input type="text"/>
2 <input type="text"/>	Poses open-ended questions (tally number of different responses)	<input type="text"/>
3 <input type="text"/>	Tells information, models procedures, or shows students how to represent concepts	<input type="text"/>
4 <input type="text"/>	Guides practice on problems (tally number of problems)	<input type="text"/>
5 <input type="text"/>	Elicits multiple strategies /solutions (tally number of problems)	<input type="text"/>
6 <input type="text"/>	Uses representations (tally number of types of representations)	<input type="text"/>

B. Teacher Feedback

How did the teacher provide feedback to students?
Teacher Response to student answers:

1 <input type="text"/>	States if correct or not without elaborating or repeats what child said with indication of right or wrong	<input type="text"/>
2 <input type="text"/>	Calls on other students until the "correct" answer is given	<input type="text"/>
3 <input type="text"/>	Provides correct answer right away (no probing for thinking or hinting)	<input type="text"/>
4 <input type="text"/>	Asks class if they agree or disagree with student's response	<input type="text"/>
5 <input type="text"/>	Takes student through step-by-step procedure	<input type="text"/>
6 <input type="text"/>	Tells student strategy to use	<input type="text"/>
7 <input type="text"/>	Elicits other students' questions about the student's response	<input type="text"/>
8 <input type="text"/>	Labels math strategy, problem, or concept	<input type="text"/>
9 <input type="text"/>	Repeats student answer in a neutral way (no indication of right or wrong)	<input type="text"/>

Teacher Guidance and follow up questions:

10 <input type="text"/>	Probes for reasoning or justification of solution	<input type="text"/>
11 <input type="text"/>	Provides hint to students	<input type="text"/>
12 <input type="text"/>	Clarifies what student says or does	<input type="text"/>
13 <input type="text"/>	Extends what student says or does	<input type="text"/>

Teacher Praise:

14 <input type="text"/>	Uses praise or makes positive comments focused on content	<input type="text"/>
15 <input type="text"/>	Highlights student work or <i>solution</i> to class	<input type="text"/>
16 <input type="text"/>	Praises effort or behavior	<input type="text"/>

C. Evidence of Instructional Behaviors

1	<input type="checkbox"/> Yes <input type="checkbox"/> No	Connects lesson to prior knowledge /instruction
2	<input type="checkbox"/> Yes <input type="checkbox"/> No	Guides children in acting out a problem
3	<input type="checkbox"/> Yes <input type="checkbox"/> No	Leads children in a rap, song , or fingerplay to illustrate math concept or practice
4	<input type="checkbox"/> Yes <input type="checkbox"/> No	Uses children's book to make connections to math concept
5	<input type="checkbox"/> Yes <input type="checkbox"/> No	Connects math to real life problems or situations
6	<input type="checkbox"/> Yes <input type="checkbox"/> No	Directs or encourages students to help one another with math
7	<input type="checkbox"/> Yes <input type="checkbox"/> No	Prompts child to guide practice or lead class in a routine
8	<input type="checkbox"/> Yes <input type="checkbox"/> No	Counting By: <input type="checkbox"/> One <input type="checkbox"/> Two <input type="checkbox"/> Five <input type="checkbox"/> Ten <input type="checkbox"/> One Hundred <input type="checkbox"/> Three <input type="checkbox"/> Ordinal <input type="checkbox"/> Other: <input type="text"/> <input type="checkbox"/> Backwards

NOTES

MATH EXPRESSIONS

A.

- | | | |
|---|--|--|
| 1 | Daily routine(s) for the unit are used. | <input type="checkbox"/> None <input type="checkbox"/> Some <input type="checkbox"/> Most <input type="checkbox"/> All |
| 2 | Teaching the Lesson activities completed. | <input type="checkbox"/> None <input type="checkbox"/> Some <input type="checkbox"/> Most <input type="checkbox"/> All |
| 3 | Teacher follows recommended grouping for the activities in the lesson. | <input type="checkbox"/> None <input type="checkbox"/> Some <input type="checkbox"/> Most <input type="checkbox"/> All |
| 4 | Students worked on a math writing prompt. | <input type="checkbox"/> None <input type="checkbox"/> Some <input type="checkbox"/> Most <input type="checkbox"/> All |
| 5 | Teacher assigned homework. | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| 6 | Teacher used the "Extending the lesson activity". | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| 7 | Teacher used the Remembering Activities | <input type="checkbox"/> Yes <input type="checkbox"/> No |

B. Rate how characteristic the statement is of the class that you observed (check one box for each statement)

- 1 = **Not at All** (almost never)
- 2 = **Minimally** Characteristic (sometimes evident)
- 3 = **Strongly** Characteristic (frequently evident)
- 4 = **Extremely** Characteristic (almost always evident)

- | | | |
|----|--|--|
| 1 | Teacher fosters peer discussion of mathematical thinking by directing students to ask each other questions or to talk about a concept together. | <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 |
| 2 | Teacher used hints and questions to guide children in solving problems. | <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 |
| 3 | Teacher used the solve, explain, ask questions, justify model of instruction. | <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 |
| 4 | Teacher used student pairs. | <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 |
| 5 | Teacher used scenarios to demonstrate mathematical relationships. | <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 |
| 6 | Teacher used 'step-by-step' at the board. | <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 |
| 7 | Teacher used whole class practice with student leaders. | <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 |
| 8 | Students worked together in small groups. | <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 |
| 9 | Teacher clarified and/or extended student thinking by rephrasing what the student said or labeling a strategy or pointing out part of the solution or asking a question. | <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 |
| 10 | Teacher prompted and encouraged children to share strategies/thinking. | <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 |
| 11 | Teacher used errors as opportunities for learning. | <input type="checkbox"/> N/A <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 |
| 12 | Students lead the designated daily routines for the day independently. | <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 |
| 13 | Students questioned one another about math solutions, representations, or ideas. | <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 |

Draft



B. Rate how characteristic the statement is of the class that you observed (continued)

- 1 = **Not at All** (almost never)
- 2 = **Minimally** Characteristic (sometimes evident)
- 3 = **Strongly** Characteristic (frequently evident)
- 4 = **Extremely** Characteristic (almost always evident)

14	Students built on one another's ideas trying out what another student did.		<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
15	Students used proof drawings to represent mathematical ideas.		<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
16	Students used visual representations, finger, or manipulative to show conceptual understanding.		<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
17	Students wrote equations to represent mathematical ideas.		<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
18	Students explained math concepts or solutions to one another.		<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
19	Students participated in Quick Practice using group responses (choral or hand signals) or individual boards.	N/A <input type="checkbox"/>	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
20	Students wrote about math concepts .		<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
21	Teacher used student ideas as the basis of mini-lessons		<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
22	Teacher uses real world situations to illustrate math ideas.		<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
23	Teacher differentiates instruction for different kinds of students.		<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4

NOTES

