

Math Observation Tool

Observer ID _____ Observation/Teacher ID _____ Date _____ Obs. start time _____ Obs. end time _____

Length of observation, in minutes: _____

Course (secondary) or Grade Level (elementary):

Part of Class Observed:

- Beginning of class
- Middle of class
- End of class

Minutes of observed time used for math instruction:¹ _____

Seating arrangement. (select all that apply):

- Rows
- Pairs
- Groups
- Horseshoe
- Sitting on floor
- Other

Review of homework took:

- less than 5 minutes
- 5 - 10 minutes
- 10 - 15 minutes
- greater than 15 minutes
- Not observed

Lesson Objective Posted (select all that apply):

- Teacher or students state the objective verbally
- Objective is written
- No clearly posted objectives

Lesson Objective Aligned to Curriculum:

- The objective is aligned with the curriculum.
- Objectives have no connection to the curriculum –there are objectives for the class but they are not related to the curriculum.
- Unsure

	Exemplary	Acceptable	Inadequate	Nonexistent
1. New learning was connected to previous learning.	<input type="radio"/> Students demonstrated prior knowledge independently and successfully.	<input type="radio"/> Students demonstrated prior knowledge with teacher support.	<input type="radio"/> Students needed significant teacher support to connect prior knowledge.	<input type="radio"/> There was not evidence of connections to previously learned material.
2. The mathematical content presented by the teacher was accurate.	<input type="radio"/> The portion of the observed lesson was mathematically accurate.	<input type="radio"/> Few content errors occurred, but most, if not all, were corrected.	<input type="radio"/> Some content errors occurred, and few were corrected.	<input type="radio"/> Inaccurate content formed the basis of the lesson.
3. Teacher used precise and accurate mathematical language and vocabulary appropriate to the grade level	<input type="radio"/> Teacher consistently used grade-level appropriate mathematical language and vocabulary.	<input type="radio"/> Teacher sometimes used grade-level appropriate mathematical language and vocabulary.	<input type="radio"/> Teacher rarely used grade-level appropriate mathematical language and vocabulary.	<input type="radio"/> There was no evidence that teachers used mathematical language and vocabulary.

¹ Examples of activities not to be counted as math instruction: social studies instruction, snack, conversation about general school events

Math Observation Tool

	Exemplary	Acceptable	Inadequate	Nonexistent
4. Students used precise and accurate mathematical language and vocabulary appropriate to the grade level to explain their thinking.	<input type="radio"/> Students used grade-level appropriate mathematical language and vocabulary extensively to explain their thinking.	<input type="radio"/> Students used grade-level appropriate mathematical language and vocabulary sometimes to explain their thinking.	<input type="radio"/> Students used grade-level appropriate mathematical language and vocabulary occasionally to explain their thinking.	<input type="radio"/> There was no evidence that students used mathematical language and vocabulary to explain their thinking.
5. Teacher uses questioning strategies.	<input type="radio"/> Teacher uses mostly open-ended and probing questions	<input type="radio"/> Teacher uses some open-ended and probing questions and recall questions with context	<input type="radio"/> Teachers use mostly recall questions without context	<input type="radio"/> Teacher does not use questioning.
6. Teacher provides wait time	<input type="radio"/> Teacher provides wait time so that most students have time to process	<input type="radio"/> Teacher provides wait time so that some students have time to process	<input type="radio"/> Teacher provides wait time so that few students have time to process	<input type="radio"/> Teacher does not provide wait time

7. **Instructional Structure.** The lesson included (Select all that apply):

<input type="checkbox"/> Inquiry-based or discovery learning	<input type="checkbox"/> Number sense routines	<input type="checkbox"/> Reflection
<input type="checkbox"/> Lecture	<input type="checkbox"/> Learning stations	<input type="checkbox"/> Independent Seatwork (worksheets, textbook readings, etc.)
<input type="checkbox"/> Guided Practice	<input type="checkbox"/> Cooperative Learning	<input type="checkbox"/> Summarizing
<input type="checkbox"/> Guided Discussion	<input type="checkbox"/> Hands on/Experiments/Labs	<input type="checkbox"/> Formative assessment such as exit tickets, quick checks, observation
<input type="checkbox"/> Pair or Group Work	<input type="checkbox"/> Providing Directions/Instructions	<input type="checkbox"/> Problems in context
<input type="checkbox"/> Mini lesson	<input type="checkbox"/> Self-Evaluation	<input type="checkbox"/> Closure
<input type="checkbox"/> Independent Practice (related to mini lesson)		

8. What is the cognitive complexity of the **task(s) or assignment(s)**? Select all that apply.

- Remember
- Understand
- Apply
- Analyze
- Evaluate
- Create

9. What is the cognitive complexity **demonstrated by students**? Select all that apply.

- Remember
- Understand
- Apply
- Analyze
- Evaluate
- Create

Math Observation Tool

10. Students engage in the following **problem-solving behaviors** (select all that apply):

- Collaborate with others
- Use varied/appropriate strategies
- Construct and discover ideas
- Make multiple attempts, if needed
- None

12. Students utilize various **representations** to demonstrate their thinking (select all that apply):

- Numbers and/or symbols
- Drawing or picture
- Concrete material (manipulatives)
- Digital manipulatives
- Table, chart, and/or graph
- None

14. Is there another teacher or an assistant in the classroom?

- No
- Yes: Teacher
- Yes: Teaching Assistant
- Yes: Unsure

11. Students engage in the following **mathematics communication behaviors** (select all that apply):

- Turn and Talk
- Explain their thinking
- Repeat/Rephrase another student
- Ask for clarification
- Add on to others
- Agree/Disagree and state why
- Share/Discuss approaches or ways to solve problem
- None

13. Mathematics communication is:

- Primarily teacher-to-student
- Primarily student-to-student
- A balanced mix of teacher-to-student and student-to-student

15. **If there is another teacher or assistant**, identify the co-teaching model(s) observed (Select all that apply):

- N/A – “No” is selected in question 14
- Alternative teaching
- One teach, one assist
- One teach, one observe
- Parallel teaching
- Station teaching
- Team teaching
- No observable model

Math Observation Tool

Type of technology used by:	Students	Teacher
None		
iPad		
Calculator/graphing calculator		
Laptop		

Type of technology used by:	Students	Teacher
Interactive projection device (Smartboard, Apple TV, Promethean)		
Non-interactive projection device (document camera, Smartboard used non-interactively, etc.)		
Other (Please specify:)		

16. If Technology is Used by the Student :	Yes	No	Unable to Observe	N/A – Technology is not used by students
Technology is clearly connected to the lesson’s objectives.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Technology provides teachers with record of students’ performance.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Students are on task while using technology.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

17. If technology is used by the **student**, the technology used serves to²:

- Substitute:** Computer technology is used to perform the same task as was done before the use of computers. (Example: Students print out worksheet, finish it, pass it in.)
- Augment:** Computer technology offers an effective tool to perform common tasks. (Example: Students take a quiz using a Google form instead of using pencil and paper.) (Teacher-student communication)
- Modify:** Common classroom tasks are being accomplished through the use of computer technology. (Example: Students are asked to write an essay around the theme "And This I Believe...". An audio recording of the essay is made along with an original musical soundtrack. The recording will be played in front of an authentic audience such as parents, or college admission counselors.) (Shared or collaborative student-to-audience)
- Redefine:** Technology allows learning to take place that would not be possible with other media. (Example: A classroom is asked to create a documentary video answering an essential question related to important concepts. Teams of students take on different subtopics and collaborate to create one final product. Teams are expected to contact outside sources for information.)
- Unable to observe
- N/A** – Technology is not used by students.

Overall Comments (Optional):

² Source: <https://sites.google.com/a/msad60.org/technology-is-learning/samr-model>