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: _______ 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

<table>
<thead>
<tr>
<th>Exemplary</th>
<th>Acceptable</th>
<th>Inadequate</th>
<th>Nonexistent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. New learning was connected to previous learning.</td>
<td>Students demonstrated prior knowledge independently and successfully.</td>
<td>Students demonstrated prior knowledge with teacher support.</td>
<td>Students needed significant teacher support to connect prior knowledge.</td>
</tr>
<tr>
<td>2. The mathematical content presented by the teacher was accurate.</td>
<td>The portion of the observed lesson was mathematically accurate.</td>
<td>Few content errors occurred, but most, if not all, were corrected.</td>
<td>Some content errors occurred, and few were corrected.</td>
</tr>
<tr>
<td>3. Teacher used precise and accurate mathematical language and vocabulary appropriate to the grade level.</td>
<td>Teacher consistently used grade-level appropriate mathematical language and vocabulary.</td>
<td>Teacher sometimes used grade-level appropriate mathematical language and vocabulary.</td>
<td>Teacher rarely used grade-level appropriate mathematical language and vocabulary.</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>4. Students used</th>
<th>Exemplary</th>
<th>Acceptable</th>
<th>Inadequate</th>
<th>Nonexistent</th>
</tr>
</thead>
<tbody>
<tr>
<td>precise and accurate mathematical language and vocabulary appropriate to the grade level to explain their thinking.</td>
<td>O Students used grade-level appropriate mathematical language and vocabulary extensively to explain their thinking.</td>
<td>O Students used grade-level appropriate mathematical language and vocabulary sometimes to explain their thinking.</td>
<td>O Students used grade-level appropriate mathematical language and vocabulary occasionally to explain their thinking.</td>
<td>O There was no evidence that students used mathematical language and vocabulary to explain their thinking.</td>
</tr>
</tbody>
</table>

| 5. Teacher uses questioning strategies. | O Teacher uses mostly open-ended and probing questions | O Teacher uses some open-ended and probing questions and recall questions with context | O Teachers use mostly recall questions without context | O Teacher does not use questioning. |

| 6. Teacher provides wait time | O Teacher provides wait time so that most students have time to process | O Teacher provides wait time so that some students have time to process | O Teacher provides wait time so that few students have time to process | O Teacher does not provide wait time |

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

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

**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
- O None

### 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
- O 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
- O None

### 13. Mathematics communication is:
- O Primarily teacher-to-student
- O Primarily student-to-student
- O A balanced mix of teacher-to-student and student-to-student

### 14. Is there another teacher or an assistant in the classroom?
- O No
- O Yes: Teacher
- O Yes: Teaching Assistant
- O Yes: Unsure

### 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
- O No observable model
## Math Observation Tool

<table>
<thead>
<tr>
<th>Technology Used by:</th>
<th>Students</th>
<th>Teacher</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td></td>
<td></td>
</tr>
<tr>
<td>iPad</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calculator/Graphing Calculator</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Laptop</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 16. If Technology is Used by the **Student**:  

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
<th>Unable to Observe</th>
<th>N/A – Technology is not used by students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology is clearly connected to the lesson’s objectives.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>0</td>
</tr>
<tr>
<td>Technology provides teachers with record of students’ performance.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>0</td>
</tr>
<tr>
<td>Students are on task while using technology.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>0</td>
</tr>
</tbody>
</table>

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

- **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):**

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2 Source: [https://sites.google.com/a/msad60.org/technology-is-learning/samr-model](https://sites.google.com/a/msad60.org/technology-is-learning/samr-model)