

## Chapter 6

# Collecting and Documenting Student Learning: Observation Notes

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Working with students daily throughout the year, a teacher will frequently observe a student who appears to make a significant step in his or her mathematical learning or seems to have an insight about a particular mathematical idea. These incidences, which may be quite brief, provide the teacher with important information about the student’s understanding of mathematics or the student’s disposition toward mathematics. Brief records documenting what the teacher observed, along with any related copies of the student’s written work, become an important part of the evidence showing a student’s progress, and can be recorded under Observation Notes on page 2 of the Learning Record Data Collection Form.

Opportunities for observing students’ learning will arise in a variety of settings. They may occur, for example, during a class discussion, when a teacher is observing a small group of students, when a teacher is interacting individually with a student, or when a teacher is reviewing the student’s written work. A student may be engaged in a variety of behaviors, such as, expressing his or her thoughts about how and why an approach/solution makes sense, responding to ideas/thoughts of other students, making choices of tasks to work on or materials to use, or using manipulatives or other math tools to solve a problem. At times, evidence of a significant learning incident may become apparent while a teacher is reviewing a student’s written work. The incidences recorded in the Observation Notes may be concerned with fairly important mathematical ideas, or they may seemingly be less consequential, but, for that student, indicate a significant step in the student’s mathematics learning.

Observation notes should be brief, but, as much as possible, they should provide the teacher (and outside readers) a complete description of the incident or behavior that the teacher considered significant. The notes should describe what happened, and, generally not include the teacher's opinion or conclusions about the learning. For example, a note stating that "B. did a good job on an assignment converting basketball free throws to percentages," is not nearly as informative as a comment stating, "B. said, 'I knew I forgot how to find a percent when, for making 5 throws out of 17 tries, I divided 17 by 5 and the answer of 85 didn't make sense. The answer has to be less than .5 or 50% since 5 is less than half of 17.'"

Any written work done by the student related to the Observation Note should also be included in the student's LR. All students' written work should include the date to facilitate matching the work with the commentary on the LR recording form. A check should be placed in the "W" column on the form to indicate that written work accompanies the note.

A series of Observation Notes collected throughout the year are like links in a chain—they provide the teacher pieces of evidence that, when taken as a whole, help provide a picture of a student's progress in learning mathematics throughout the year. Teachers find that Observation Notes give them so much information about their students and what they are learning, that doing this regularly is well worth the effort.

## **Ways to Take Observation Notes**

Keeping observation notes on students in the entire class (or multiple classes) can be a very daunting task. (Teachers who are beginning to use the Learning Record will want to start off by keeping records for just a few students the first year—maybe three to five.) Different teachers have multiple ways of deciding how or when to make observation notes. Among the methods different teachers have found to be useful include the following.

- One teacher carries a clip board with a page of address labels, each with a student's name. When he observes something about a student, he writes it

down on the label, and later sticks the label directly onto the recording form for that student. He feels that having a class list helps him to look at all students, and, although he may not have observations for every student in his class before he starts a new page of labels, he knows which students he wants to watch more closely for data.

- Another teacher also carries a class list on a clip board. However she prefers to keep the students records on the computer, so about once a week she transfers her notes to the records stored on her computer. She uses the electronic version of the LR Data Collection Form.
- One teacher carries a pad of sticky notes around, and writes the student's name and the date at the top, along with the observation note. These are stuck directly onto the recording form. This teacher periodically reviews her class's records to see which students to monitor more closely.
- Another teacher finds it distracting to carry a pen and paper around and to write notes while she is teaching. Therefore she tries to make mental notes of who and what she wants to make an observation note about. As soon as possible, after class is over, she makes a note of these.

## The Matrix

	SOCIAL CONTEXTS					
AREAS OF MATHEMATICS	individual	pair	small group	student with adult	small/large group with adult	
Number Sense						
Patterns, Functions and Algebra						
Geometry and Measurement						
Statistics and Probability						

The matrix at the top of the Observation Notes recording page is to keep track of the areas of mathematics and the social contexts of the observations. For each observation note included, the date of the note is written in the appropriate cell in the matrix.

Since the LR considers all areas of mathematics (Number Sense; Patterns, Functions, and Algebra; Geometry and Measurement; and Statistics and Probability) to be important, some teachers want to make sure they have made at least one observation in each of the four areas. Other teachers are less concerned with this. Knowing the social context of the observation can also be informative, and noting it in the matrix may save writing down this information in the note. Some teachers have decided to call the last box under Social Context “Written Work” to indicate that the observation came primarily from reviewing the student’s turned-in work.

### ***To Do: Examples of Observation Notes***

Two examples of Observation Notes from actual students’ Learning Records are included in this Handbook: Tessa, Grade 1, (pages 4-8); and Tim, Grade 5 (pages 9-13.) Review the Observation Notes from Glen’s record (grade 4), if your coach has them available. When reviewing each example, it is suggested that the pages of the example be removed from the Handbook to facilitate their examination. Follow the suggestions for “Reviewing Work Learning Records from Other Teachers’ Students” on pages 3-4 of Chapter 5.

**Tessa, Grade 1.** Tessa’s observation notes and work samples are on pages 5-6. All the Observation Notes for Tessa are brief and describe several incidents the teacher saw as significant. Reading them, one gets a picture of each event. One of the four observation notes included Tessa’s written work, which is included following the recording form on pages 7-8. There are a number of comments and possible inferences an outside reviewer might make about these notes. However, it is important to remember that these are just “pieces” of evidence, and to realize that any interpretations should be narrow and open to further data.

Review and discuss Tessa’s work and the teacher’s observation notes before looking at comments about them on pages 7-8.

Read and discuss these comments about Tessa's Observation Notes.

- 10/30—It appears that this observation occurred during a whole class or small group instructional period and the teacher observed Tessa asking another student a question. *Possible inference:* Tessa knows that 400 is a large number, and seems to know that hundreds have zeros. Like most first graders, she probably has little understanding of place value, at least this early in the year. She seems to be comfortable asking another student for help.
- 12/2—It appears that Tessa is working in a small group with two other girls. They are making a colored chain with unifix cubes. *Possible inference:* This activity is one of a number of activities the girls have done related to linear repeating patterns. Since Tessa (apparently) spontaneously and orally states the color sequence of the cube pattern, but responds, “I don't know,” when the teacher asks for another way to say the pattern, she may not understand the teacher's question or have not assimilated the term “pattern.” The teacher's prompt about using letters appears to have jogged Tessa's memory, and Tessa's response shows that she knows at least one other way of representing the pattern the girls have constructed.
- 2/11—This note includes Tessa's written work (two pages). It appears that the teacher's comments were made by looking at Tessa's work in her journal, rather than by directly observing her. *Possible inference:* Tessa apparently now knows how to write numbers in the hundreds, and that she can write a series of numbers by skip-counting by 8s, 9s, and 7s. It seems that the students have had some experience looking for a repeating pattern in the ones' column for multiples of a given number. Tessa identifies the repeating pattern for 8s and 9s, but not for multiples of 7.
- 3/5—This appears to be oral interaction between Tessa and the teacher following the reading of a letter from Lucky the Leprechaun. *Possible inference:* Tessa is seeing a mathematical way, making a chart, for

keeping track of data. Since the chart is not included in the LR, we have no idea of her ability to construct a reasonable chart.

- 3/25—Tessa is playing a game that is intended to help students get ready to understand regrouping in subtraction. *Possible inference:* Tessa seems to know automatically that she will need to trade in a dime for pennies in order to take 7 pennies away when she has only 2. Since the teacher said that she didn't physically count the 7 dimes and 5 pennies she had left (after taking away 7 pennies), it seems that Tessa knows that the dimes and pennies can be represented by the number 75.

**Tim, Grade 5.** Teachers using this Handbook may now want to examine the Observation Notes and accompanying work samples for Tim. Follow the suggestions for “Reviewing Work Learning Records from Other Teachers’ Students” on pages 3-4 of Chapter 5.









