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Please enjoy this complimentary excerpt from *Answers to Your Biggest Questions About Teaching Elementary Math*, by John J. SanGiovanni, Susie Katt, Latrenda D. Knighten and Georgina Rivera.

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# What Should I Look for as Students Work?



To learn what students know, you must observe them as they work on tasks, complete centers, or play games. Be aware that observing does not mean circulating around the room making sure the students are on task. Instead, you want to understand what they are doing and thinking. That means you are watching and asking questions. You are taking notes. You are actively listening. You are identifying strategies or planning what you want to highlight during a debriefing discussion. And while observing, you can also assess student performance and determine what you need to do next.

## WHAT SHOULD YOU LOOK AND LISTEN FOR?

Obviously, you want to see if students are acquiring, applying, and retaining the skills and concepts you are teaching. While in many cases you are looking at the accuracy of the work, you are also looking for much more than correct and incorrect answers.

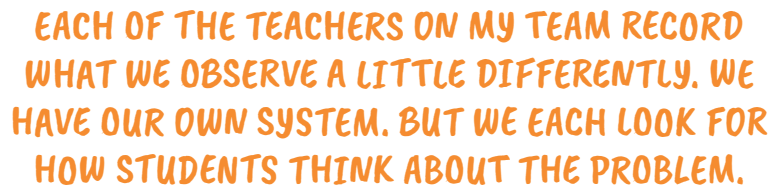
These are some of the questions to ask yourself as you observe the students:

Content knowledge	Mathematical behaviors
<ul style="list-style-type: none"><li>• Do they apply understanding accurately?</li><li>• Are there signs of misconceptions?</li><li>• Do they repeat a flawed process?</li><li>• Do they repeat an inefficient approach (e.g., counting on by ones when adding two- or three-digit numbers)?</li></ul>	<ul style="list-style-type: none"><li>• Do they attempt to make sense of the task and show perseverance?</li><li>• Do they manipulate numbers?</li><li>• Do they explain their thinking to partners or when asked?</li></ul>

Strategies	Dispositions
<ul style="list-style-type: none"><li>• Do they use a reasonable strategy?</li><li>• Do they rely on the same strategy each time?</li><li>• Do they change strategies when a preferred strategy is inefficient?</li><li>• Do they attempt a strategy and adjust when they recognize their work is leading them in the wrong direction?</li></ul>	<ul style="list-style-type: none"><li>• Do they show interest in the topic?</li><li>• Do they show interest in the activity?</li><li>• Do they show frustration when encountering a challenge or obstacle?</li><li>• How do they engage with their partners?</li></ul>

## RECORDING INFORMATION DURING OBSERVATION

You want to record what you observe in the moment because as the lesson and the rest of your day unfold, you can easily forget what happened in math class. These notes are valuable tools for assessing, determining your next instructional steps, making grouping decisions, and even communicating with families. Don't feel pressure to collect notes about every student, in every class. Instead, work to gather information over time. Target the individuals you want to observe during a given lesson. Try to get multiple measures of each student over longer periods of time.



**EACH OF THE TEACHERS ON MY TEAM RECORD WHAT WE OBSERVE A LITTLE DIFFERENTLY. WE HAVE OUR OWN SYSTEM. BUT WE EACH LOOK FOR HOW STUDENTS THINK ABOUT THE PROBLEM.**

—FIFTH-GRADE TEACHER

## INDEX CARDS OR STICKY NOTES

A simple, low-tech way to record notes is to make use of index cards or sticky notes. There is no single tried-and-true method for using these. Fiddle with your approach to find one that works best for you. Record the strategies students use, the insights they have, the misconceptions they show, or confirmation that they understand. You can also record evidence of learning behaviors. Another way to use sticky notes is to record the student's name on the top and write down what you noticed about the student's thinking and work on the sticky note. Then after the lesson, you can organize the sticky notes to make decisions about instructional next steps and how you might potentially group students.



### *Flexible Learning*

You can use Google Forms or something similar to create a recording sheet on your phone or tablet. Simply create a rubric (see *Assess Student Thinking*, p. 177) or recording sheet on the Google form. Save the link to the form on the home page of your phone or tablet. Then, simply click on the home page button to go straight to the form during class observations.

Here are some examples of the notes you might take:

- While students work on a problem, you might note if they draw a picture, use manipulatives, write an equation, or don't know how to get started.
- While students are working to solve a multidigit addition problem, you might note who counts on by ones, who counts on by chunks, who uses partial sums, and who uses an algorithm.
- While students are working on a problem, you might note who is unsure how to get started, who changes strategies as they work, or who has ideas on what to do when they are stuck.

## TAKE A PHOTO

Snapping a photo with your smartphone or tablet is a great way to capture the moment. It also serves as an artifact to support your determination of student progress. You can take a picture of written work, representations, or how the student uses manipulatives. Once you have a digital file, you can create folders for each student or folders arranged by math concept. The great thing about using photos is that you have a record of student work but don't have to sift through a stack of papers when it's time to analyze it! Photos are also very helpful for communicating progress to families.

## CLIPBOARD NOTES

Jot down quick anecdotal notes on a clipboard while you are observing. The way you organize these notes is up to you. You might have a clipboard with an individual paper for each student where you record evidence of their understanding. Or you might make a table that has a list of student names, followed by the activity and date. Here you can record quick notes regarding the student's work and have a page full of notes for the lesson.

## CLASS OBSERVATION SHEET

A class observation sheet is another way to record notes or assess student progress. Again, there are a variety of ways to do this. A good observation sheet includes student names, the date, and a title or note about the task or activity. It can feel daunting to have to record information about every student. But there are ways to overcome this. For example, if you are recording performance with a 3 (*got it*), 2 (*making progress*), or 1 (*not yet*), you can record only the 2s and 1s, making comments only about what they do. You can choose to collect data only for those students you need information about. You can rotate through students collecting evidence about a smaller set of students each day. Or you can target a specific strategy you want to look for, such as using make tens. Then as students work, take note only of those students who use that strategy (see *Fluency Strategies for Operations*, p. 138).

## WHAT SHOULD YOU ASK AS YOU OBSERVE?

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Observation is not a passive teaching move. You are thinking about what they are doing, why they are doing it, and how you will respond. It should also be an interaction that can potentially give you even more information. There is no set of questions you have to ask as you observe. But in general, you want to ask questions like the following:

- 👉 Can you tell me more about your thinking?
- 👉 Can you describe your strategy out loud?
- 👉 How is \_\_\_\_\_ like \_\_\_\_\_?
- 👉 What would happen if \_\_\_\_\_?
- 👉 Is there another strategy you might use to \_\_\_\_\_?

These questions are examples of how you probe student thinking and reasoning. More important, they give you direct, specific information as to what students are doing and why. They enable you to draw better conclusions because you don't have to guess what they did or why they did it. And there is yet another added benefit in asking questions as you observe. These questions model those you want students to ask themselves while they work. Your questioning helps develop the metacognitive skills of the student you're talking with and the students who are watching the exchange.