

CHAPTER 3

SHOW ME

Show Me: Background and Basics

We created the Show Me formative assessment technique because of the assessment potential of on-the-spot teacher prompts just like the ones above. Show Me was derived as we began to deeply consider, explore, and then implement the observation and interview techniques. What's a Show Me? A **Show Me** is a performance response by a student or group of students that extends and often deepens what was observed and what might have been asked within an interview. Its use is, to some extent, serendipitous and planned. Teachers are often caught off guard by or wonder about a student response and can ask a student to show what he or she did. Similarly, teachers can and should plan for particular elements within a lesson where Show Me may be warranted. The Show Me prompt requires a student or group of students to demonstrate their thinking and orally explain their response. And, like observations and interviews, Show Me is a classroom-based formative assessment technique, number three of the Formative 5, that, when used regularly, has the potential to not only monitor but also improve mathematics teaching and learning. This is particularly true because the use of Show Me supports and encourages differentiation.

Sueltz, Boynton, and Sauble (1946) recognized years ago that “observation, discussion, and interviews serve better than paper-pencil tests in evaluating a pupil’s ability to understand the principles used” (p. 145). We recognized that, not unlike teacher use of observations, many teachers have probably asked their students to show them what they were doing, perhaps without recognizing the assessment value of such performance-based opportunities.

Shavelson, Baxter, and Pine (1992) noted that “a good assessment makes a good teaching activity and a good teaching activity makes a good assessment” (p. 22). Having your students show what they are doing or what you request them to do is such an activity/assessment. Show Me is interactive in that its use can provide an indication as to the extent to which what has been taught has been learned.

The National Council of Teachers of Mathematics’ Assessment Standards (NCTM, 1995) note two important purposes of

Show Me is a performance response by a student or group of students that extends and often deepens what was observed and what might have been asked within an interview.

assessment that relate directly to use of the Show Me technique. These include the use of assessment to both monitor progress and inform instructional decisions. More recently, the National Mathematics Advisory Panel (2008) recommended research regarding “think alouds” in mathematics, which is a strategy typically used in reading and somewhat similar to what we propose in this chapter as Show Me.

Planning for Show Me

As noted above, Show Me is a performance-based response. It's essentially the on-the-spot extension of an observation or interview that deepens your understanding of what a student can do, which then suggests next steps for your planning and teaching. Deciding to ask a student or group of students to show seeks a demonstration of knowledge and understanding. Such responses help to identify or perhaps validate a level of progress in understanding or applying particular curricular standards within any of the mathematical content domains. Additionally, the very nature of a Show Me response will often address a number of Standards for Mathematical Practice (NGA Center & CCSSO, 2010). Show Me is a stop-and-drop, on-the-spot activity that should be relatively brief, less than five minutes. As noted, it's your extension of what you have observed or perhaps heard or saw within an interview. Consider Erin's commentary on the use of Show Me in her classroom.

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SHOW ME

I was moving around and observing how my third-grade class was doing in creating drawings of a set of rectangles with the same perimeter but different areas and another set of rectangles with the same area, but different perimeters. I was watching Bryce work and wasn't at all sure I could understand her thinking, so I asked her to Show Me rectangles with a perimeter of 12. She zipped right through this showing 1 by 5, then 2 by 4, then 3 by 3 rectangles, noting that each had a perimeter of 12. And she talked me through each step of her work. However, when I asked her about the area of her rectangles, she wasn't at all sure about the area of any of her rectangles. I decided she needed a bit more of my time and that we would meet later and I would have her make the same rectangles, all with a perimeter of 12, using grid paper or tiles. That way, I could have her literally see the square units and determine the areas of her rectangles. I was glad I stopped what I was doing and

had Bryce Show Me what she was doing and why. I also think Bryce's response may be somewhat representative of others in my class. I need to think about how my lesson tomorrow can draw the connections between like perimeters and area and like areas and perimeter. ”

Erin's use of Show Me was essentially an extension of what she observed. It revealed that Bryce seemed to understand the creation of rectangles with the same perimeter but was challenged by expressing the area of the rectangles. It also revealed the limitation of drawings and suggested the use of grid paper or tiles to represent the rectangles. Such models would provide the square units Bryce may need to determine the area of the rectangles she created.

Let's consider this Show Me response. Think about how you might be able to use it, if Bryce was your student. Bryce's responses truly advise Erin's planning for her lesson tomorrow. Our thinking is that Show Me truly demonstrates understandings and also reveals potential learning gaps that should inform instructional decisions. Importantly, such opportunities are most helpful in work with individual students or particular student groups. The questions in Figure 3.1 should be helpful to you as you both consider and complete preliminary planning for use of the Show Me technique, noting the brevity of such experiences. Later in the chapter, you'll find a tool (Figure 3.2) for planning and using Show Me as you teach.

Responses to the questions in Figure 3.1 should help you in considering the everyday use of Show Me as, essentially, a more in-depth extension of the observation or interview. Remember that, in most cases, Show Me will be a quick request for a student or perhaps small group of students to demonstrate what they are doing within the day's mathematics lesson. That said, you could also ask your entire class to complete a Show Me activity and do a walkthrough of the responses to get a quick read of their level of success, possible mathematical challenges, or misconceptions related to the activity. You may sample students daily for Show Me opportunities or perhaps target students for Show Me based on particular needs, including as a quick assessment of the prerequisite conceptual and/or procedural knowledge necessary for the lesson of the day. Show Me is *your* opportunity to engage students in showing/demonstrating their conceptual understandings, procedural knowledge, use of particular representations or tools, and their engagement of the Standards for Mathematical Practice (NGA Center & CCSSO, 2010), particularly, but not exclusively, reasoning and modeling with mathematics.

Figure 3.1 • Planning for Show Me

1. Why would you use the Show Me technique?

- As you consider the use of Show Me, what particular aspects of your lesson would be most conducive to having students show or demonstrate their understandings?
- What might you observe or expect to observe your students doing that might prompt you to use the Show Me technique?
- As you interview students in a particular lesson and consider the content and related instructional focus of the lesson, when might an interview transition to the more performance-based Show Me technique?
- Note: As you consider the importance of a full understanding of the progress of your students in mathematics, the differentiation potential of Show Me allows you to address particular student needs through the use of Show Me as well as note different responses to the same Show Me prompt.

2. Where might Show Me opportunities occur within your lesson?

- How might you use Show Me as students are working independently within the day's lesson?
- How might you use small group or whole class opportunities for students to show you how and why they completed a particular activity before releasing them to independent activities?
- Can you think of particular students or groups of students who might benefit from regular opportunities to show you how and why they completed particular elements of a lesson's activities?

3. How will you organize your classroom to implement Show Me each day?

- As you consider your implementation of the Show Me technique, how might you design a particular place in the classroom for Show Me or take advantage of the at-their-seat, in-the-moment spontaneity for implementation of Show Me?
- How might you provide easy access to representation tools as needed for a Show Me response (e.g., drawings, manipulative materials)?
- As with the interview, for particular areas of interest/concern, how might you record Show Me responses using a video or audio recording, or perhaps an interactive whiteboard app (e.g., Explain Everything™, Educreations, or ShowMe interactive whiteboards)?

4. As you implement Show Me, what entrée questions/statements might you use as you seek a deeper understanding of student thinking? Consider the following as possible examples.

- Can you show me how you did/are doing that example and explain your reasoning?
- Show me how to solve that problem using a number line (or any other related representation tool).

- Show and share your solution strategy with me.
- Show and share your solution strategy with your team member, making sure to describe how and why you did what you did.

5. What might you anticipate from students? (Consider understandings, possible mathematical challenges or misconceptions and extensions of the mathematics presented, as well as evidence of student disposition.)

- As you plan the lesson, before engaging students in the Show Me activity, reflect on your class and its progress, and anticipate the types of responses you may receive. Would the Show Me prompts used reflect conceptual or procedural understandings? Would your students be able to recount, orally or in writing, their reasoning?
- How might you consider selecting a sample of your class for Show Me each day, using the responses to monitor and advise your planning as well as identify individual student needs? The sample should be representative of the achievement range within the class, including students who may struggle, high-achieving students, and students whose achievement seems to vary from week to week or even day to day.

6. How might you follow up after a Show Me request?

- What might you ask or do as you consider a Show Me response?
- If additional Show Me follow-up is considered, would it consist of additional examples?
- How might Show Me responses influence your planning for the next day's lesson?

Tools for Using Show Me in the Classroom

As you plan the daily use of the Formative 5, it will be important to consider how the trio of assessment techniques—observations, interviews, Show Me—can be used to not only monitor your instruction but also provide you with feedback as to the relative success of your planning as well as student progress. As you think about what you will observe, and when you might interview your students, you will also consider particular opportunities for using the Show Me technique.

Consider the following classroom-based examples as merely a sampling, with actual classroom vignettes provided, of why you might ask students to show what they are doing or have done within a particular mathematics lesson:

1. **As you observe a written or hear an oral student response, use Show Me to understand what was done and why.**

Classroom-Based Example: Paige, a fifth grader, was saying to her math partner that if you just doubled the numerator and denominator of any fraction (e.g., $\frac{2}{3}$) the fraction would still be the same. What would you ask Paige to show you to indicate her understanding of her statement?

2. Use a sampling of Show Me requests, individual student and/or small group, to determine how students complete an activity integral to the day's lesson.

Classroom-Based Example: In Laura's class, her sixth-grade students did their math seat work in groups. In today's lesson, she was having them use ratio tables to help them determine and extend the unit rate for purchasing soft drinks. As she observed her students completing this activity, Laura noted that Chase and his partner were discussing this problem, orally stating that if the unit rate was one bottle for twenty-five cents, that meant the cost for two bottles was fifty cents, four bottles was one dollar, and eight bottles was two dollars. However, they did not indicate the cost of three, five, six, or seven bottles, nor were they using the ratio table to represent their findings. Laura asked them to use the ratio table below and show her how to determine the other amounts.

1	2	3	4	5	6	7	8
25 cents	50 cents		\$1.00				\$2.00

3. Use Show Me to monitor the progress of particular students who may lack mathematics prerequisite knowledge or have missed instructional time on a topic.

Classroom-Based Example: Jenni strategically used Show Me to monitor the progress of two of her fourth-grade students. Todd has missed more than a week of school due to illness. Jenni was using Show Me each day with him to help determine his progress from day to day. She found it particularly helpful to ask him to show how to divide problems like $187 \div 5$ using base ten materials. She then had him create and solve word problems to provide a context for his division examples, making sure that Todd discussed his reasoning when solving the problem. She felt that Todd was growing in his understanding of how to use the manipulative tools to represent division problems and their solution as well

as connecting division to real-life contexts that made sense to him.

Jenni was also concerned about Monique's progress with division and also asked her to show how she would use the base ten materials to solve $187 \div 5$. This was helpful since she noted that Monique seemed quite facile in her use of the materials to solve the problem, but seemed challenged when asked to create a word problem to show a context for this and other division situations. Jenni decided to regularly use a word problem context for all additional lessons involving division, making sure to engage her students in both representing the problem's solution and asking them to discuss their reasoning.

4. **Use Show Me to challenge.** As students successfully demonstrate progress/understanding of the day's lesson focus, be prepared to use Show Me to challenge those students by extending the mathematical focus of the lesson.

Classroom-Based Example: Jeff observed two of his sixth graders, Amina and Rasheed, as they were summarizing data by reporting the mean and median height of trees the school planted four years ago. He noted that all responses were correct and wanted to challenge Amina and Rasheed. He asked them to show him how they would determine the median and mean if ten additional trees, each four feet tall, were found. Jeff regularly planned for and included such extensions as possible Show Me's for his more advanced students.

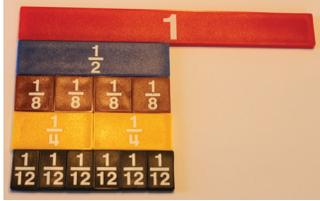
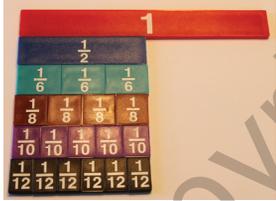
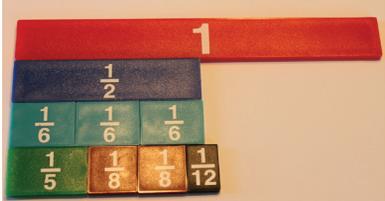
5. **Identify understandings and use a sampling of Show Me responses to advise planning for the next day's lesson and the identification of possible small group needs.**

Classroom-Based Example: Melissa sampled at least five students every day with a Show Me request. She then used the range of these responses to help her guide her planning for the next day with possible implications for content, pace of the next day's lesson, and use of Show Me to help define small group activities.

6. **Be prepared with a Show Me request that would extend a student's knowledge beyond the focus of the day's lesson.**

Classroom-Based Example: Robert liked to use Show Me with particular students to get a glimpse of what he might do in tomorrow's lesson. Today, his third-grade students were creating their own multiplication tables using graph paper.

Figure 3.2 • Small Group: Show Me Record

SHOW ME: Mathematics Content: <i>Grade 5: Number and Operations—Fractions</i>	
<p>Lesson Focus/Standard: <i>Recognize and generate equivalent fractions. Explain why the fractions are equivalent (e.g., by using a visual fraction model).</i></p>	<p>Anticipated Student Show Me Responses: I wanted the students to show me how they used fraction strips to find multiple equivalent representations for $\frac{1}{2}$, $\frac{1}{4}$, $\frac{2}{3}$, $\frac{3}{4}$.</p>
<p>Student: Liam</p>  <p>"Look! I made four ways! These are the only ones I can see. I think there are more, but I don't know if there could be more ways to make $\frac{1}{2}$."</p>	<p>Student: Roberto</p>  <p>"$\frac{1}{3}$ and $\frac{1}{6}$ equal $\frac{1}{2}$, but I don't get how I write it. How can we say these two fractions are equivalent or the same?"</p>
<p>Student: Marcy</p>  <p>"I found five ways to make $\frac{1}{2}$. I decided to organize them by size of the parts. So, I noticed something! The smaller parts mean that there are more—so like $\frac{6}{12} = \frac{1}{2}$. A $\frac{1}{12}$ is much smaller than a $\frac{1}{4}$ so $\frac{2}{4} = \frac{1}{2}$."</p>	<p>Student: Casey</p>  <p>"I found $\frac{3}{6} = \frac{1}{2}$, but then I found this other way, but I am not sure it works. I can't get this $\frac{1}{12}$ to line up here."</p>



A blank template version of this figure is available for download at <http://resources.corwin.com/Formative5>

Tomorrow, he hoped to have them use the completed tables to discuss patterns, factors, and products, and perhaps begin work connecting division to multiplication. He gathered Toby, Anna, and Marisha and asked them to show him how many of their factors had 24 as the product (e.g., 3, 8; 4, 6), then asked them to explain the different ways to use the factors to determine the product 24. He was hoping they would remember the commutative property here and how the table demonstrates its use. He also asked the students how they might use the table and the product 24 to think about 24 divided by 3. Robert felt that these preplanning Show Me responses always helped him jump-start his next-day planning.

The tools and student responses to the following Show Me prompts will be helpful to you as you consider the everyday use of Show Me in your classroom. The Small Group: Show Me Record (Figure 3.2) provides a recording of Show Me responses from a sampling of students based on any of the needs/uses discussed earlier. This tool helps in organizing and providing an actual record of student responses, which you can then consider as you plan for the next day's lesson. Given the performance nature of Show Me, we have found that pictures along with a brief, accompanying notation are a quick way to document student Show Me responses. Access the tool in Figure 3.2 for your use at <http://resources.corwin.com/Formative5>. It should also be noted that this tool could easily be adapted as an individual student Show Me.

The classroom-based examples that follow both involved use of the Explain Everything™ interactive whiteboard app as a Show Me tool. The responses to particular tasks and the teacher suggestions as to how the Show Me responses were both interpreted and used for planning are included.

* * *

Students in Mr. Cardoza's fourth-grade class provided responses to the following problem:

Beth's family decided to drive to Ski Round Top, which was about 680 miles from their home. Jon had a much shorter drive, which was about $\frac{1}{2}$ the distance that Beth's family drove. How much farther did Beth's family have to drive?

As Mr. Cardoza observed students, he selected Annika and Chayse to show their representations using the Explain Everything™



Annika's Work

<http://resources.corwin.com/Formative5>

whiteboard app. Annika's response, involving a mental math approach, is provided in Figure 3.3. She decomposed 680 into 600 and 80, and then broke 600 into two groups of 300, and 80 into two groups of 40, arriving at 340 miles. Mr. Cardoza made note of her representation and Annika explained, "Half of the distance that Beth's family drove is Jon's amount. And Beth's family drove 680 miles, and half of that is 340 miles."

Figure 3.3 • Annika's Work

$$680 \div 2 = 340$$

\swarrow \searrow \swarrow \searrow
300 300 40 40

340 miles

Mr. Cardoza then observed Chayse's work. Chayse had also translated the problem into dividing 680 by 2 and used the long division algorithm (see Figure 3.4). When Chayse discussed his Show Me response, it revealed his ability to decontextualize, using numbers and symbols to explain the steps in the procedure for dividing 680 by 2.

Figure 3.4 • Chayse's Initial Work

$$\begin{array}{r}
 340 \\
 2 \overline{) 680} \\
 \underline{-6} \\
 08 \\
 \underline{-8} \\
 00 \\
 \underline{-0} \\
 0
 \end{array}$$

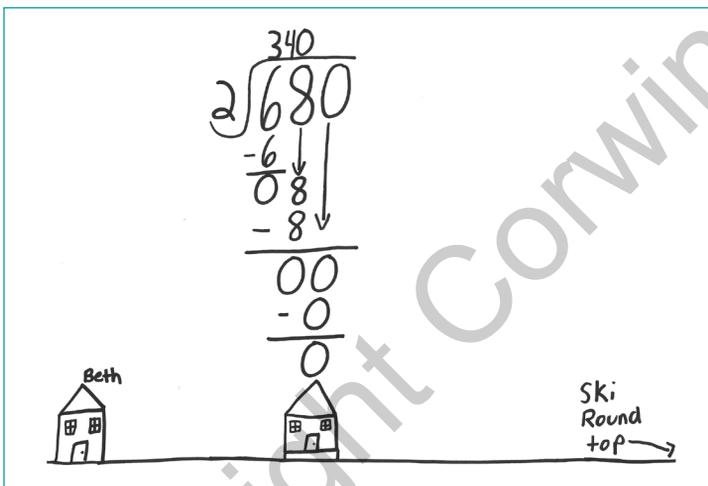
Mr. Cardoza wondered if there was any evidence that Chayse could contextualize—or make sense of—the quantities and relate them to the problem involving distance. Mr. Cardoza asked Chayse if he could show his reasoning using a picture or diagram. Chayse’s diagram is provided in Figure 3.5. He explained, “Okay, you have to have this house on the left . . . and [Beth’s] going to Ski Round Top—say that’s all the way over here [draws a horizontal line]. Jon’s house would be half of that, which is right here [draws a house at the halfway point on the line]. This would be [and labels] Ski Round Top.” This model could work, but does Chayse realize that Jon’s house might not be directly between Beth’s and Ski Round Top?



Chayse’s Initial Work

<http://resources.corwin.com/Formative5>

Figure 3.5 • Chayse’s Show Me



Mr. Cardoza observed other students as they worked and collected each student representation for that problem. He realized that most students solved using methods and representations similar to Annika’s and Chayse’s (using mental math or the long division algorithm). Mr. Cardoza reflected on the effectiveness of using a Show Me prompt with his students as a technique to help get a real sense of whether or not they can contextualize, understanding that 340 miles represents both the halfway point (got it) as well as how much farther Beth had to drive than Jon (maybe, but not completely sure). He planned to follow up with a full-class discussion involving an examination of student representations such as Annika’s and Chayse’s, followed by questions designed to get a sense of whether or not students understood “340 miles” as the value of how much farther away Beth’s house was from Ski Round Top than Jon’s.

* * *

Mrs. Hu's seventh graders worked on the following task:

Cam took 15 shots and made 9 of them, scoring 18 points. He had the same shooting percentage in his next game; how many shots could Cam have made in that game?



Alanna's Work

<http://resources.corwin.com/Formative5>

Alanna, Jordan, and Kyra also shared their reasoning using the Explain Everything™ app. Figure 3.6 shows how Alanna divided $\frac{9}{15}$ the greatest common factor of 3, and used $\frac{3}{5}$ to generate an equivalent fraction ($\frac{6}{10}$) to find Cam's shooting percentage (60%).

Figure 3.6 • Alanna's Work

Handwritten work showing the simplification of $\frac{9}{15}$ to $\frac{3}{5}$ and the generation of equivalent fractions:

$$\frac{9}{15} \div 3 = \frac{3}{5}$$

$$\frac{6}{10} \times 2 = \frac{12}{20} \quad \frac{3}{5} \times 2 = \frac{6}{10} = 60\%$$

$$\frac{6}{10} \quad \frac{12}{20} \quad \frac{3}{5} \quad \frac{18}{30}$$

She used common factors to find other equivalent fractions and stated, “He could have gone 6 for 10, 12 for 20, 3 for 5, or 18 for 30. Basically, just anything that equaled 60%.” It’s worth noting that having the animated, audio version of Alanna’s solution provided Mrs. Hu with a well-articulated learning artifact that helped her get a true sense of Alanna’s procedural and conceptual understanding—one that could not have been gathered as easily without asking Alanna to record her Show Me using the digital app.

Mrs. Hu observed Jordan’s initial solution, 60% (Figure 3.7). When asked to explain, he stated, “Nine divided by 15, that equals 60%.” She agreed and asked Jordan if he could show how many shots Cam could have made using other fractions equivalent to 60%. Jordan found that $\frac{3}{5}$ and $\frac{6}{10}$ were both equivalent to 60%, and although



Jordan's Work

<http://resources.corwin.com/Formative5>

concisely stated, he provided Mrs. Hu with evidence indicating his understanding.

Figure 3.7 • Jordan's Work

$$9 \div 15$$

$$\frac{9}{15} = \frac{3}{5}$$

$$3 \div 5 = 60\%$$

$$15 \overline{) 9.0} \begin{array}{r} .60 \\ -9.0 \\ \hline 0 \end{array} \quad 60\%$$

$$\frac{6}{10} = 60\%$$

Kyra's approach (Figure 3.8) focused around trying to find a proportion using the cross-multiplication algorithm. She determined that Cam's shooting percentage was 60% and concluded that he "would have made 6 shots if he shot 10 times."

Figure 3.8 • Kyra's Work

$$\frac{60}{100} = \frac{9}{15}$$

$$15 \overline{) 900} \begin{array}{r} 60 \\ -90 \\ \hline 00 \end{array}$$

Mrs. Hu decided that a follow-up interview would be her next step with Kyra as she wanted to dig a little deeper into the meaning behind the procedure Kyra used to find Cam's shooting



Kyra's Work

<http://resources.corwin.com/Formative5>

percentage. How were those fractions related? Why does the cross-multiplication algorithm work? Can Kyra come up with other possible solutions (the actual shots made to be equivalent to 60%)?

The Show Me responses by Mr. Cardoza's and Mrs. Hu's students demonstrate the valuable contributions such opportunities provide for impacting planning and monitoring and guiding mathematics teaching and learning.

Technology Tips and Tools for Recording Show Me Responses

There are some digital tools that provide teachers with the means to capture student Show Me responses, each of which has specific advantages. As with any digital tool that is used to collect student data, be sure to investigate and follow school district data privacy policies and practices and communicate the privacy plan and purpose of your recordings with parents/guardians and students.

1. As with other techniques, the previously mentioned interactive whiteboard apps and digital still/video recording devices and apps can be used to capture the observation of students engaged in a Show Me performance. These recordings allow teachers and students to document and review student engagement in problem solving and help inform planning for next steps.
2. A more comprehensive tool designed to improve critical thinking and communications skills, while also serving to capture and share student representations, models, and solutions is titled CueThink (<http://cuethink.com>). Teachers select or create their own problems, posing them to students inside the application. Students use the oft-mentioned four-step problem-solving model—Understand, Plan, Solve, Review—and have the opportunity to consider what they notice and wonder about the problem, generate an estimate, and choose an initial strategy or plan for solving the problem. Students create “thinklets” or video representations containing drawings, images, and audio using the intuitive drawing and writing tools provided within the application. Students encounter quality checks and reminders to consider as they prepare to submit their

solutions. The true power of CueThink comes into play when classmates are able to view, comment on, critique, and add annotations to one another's thinklets. These Show Me student artifacts can serve as portfolios of student reasoning and problem solving.

There are a few important considerations related to using digital tools to capture a Show Me. Careful thought should be given to the

1. Intended purpose (Is the goal to capture and archive or distribute digitally to classmates and/or the teacher?)
2. Function and ease of use of the digital tool or application (Does the tool provide an opportunity to capture information about student thinking in a way that significantly enhances what could be done without it? Can students access the tool efficiently and generate flexible representations that provide the teacher with feedback related to student understanding?)
3. Method(s) for gathering Show Me responses and providing students with feedback

Students who have one-to-one access to devices (e.g., laptops, tablets) have a considerable advantage in terms of being able to generate and share their ideas electronically. However, a teacher with only one (or a few) digital device(s) (e.g., iPads or laptops) can, during an observation, make a Show Me request to an individual student or small group of students. The digital file can easily be saved, shared, analyzed, and discussed as a classroom learning artifact, serving as a resource to help improve learning for all students.

Using Show Me in YOUR Classroom

When planning for the use of Show Me, remember that this is a “stop-and-drop” activity where you will ask a student, pair of students, small group, or perhaps the entire class to show you how they did what they did, how a problem was solved, how a particular manipulative material or related representation was used, and so on. As the examples and Small Group: Show Me Record tool (Figure 3.3) provided in the previous section of this chapter indicated, you can use Show Me to not only validate what you have observed but also provide responses that will help in considering

Based on previous observations and interviews, you can anticipate the “lesson bumps” where Show Me might be useful.

how you might redirect your instruction within the day's lesson or the planning for tomorrow's lesson.

Based on previous observations and interviews, you can anticipate the “lesson bumps” where Show Me might be useful. While it can be paired regularly with student or class observations, and serve as a prerequisite or supplement to an interview, the actual use of Show Me will be related to the content focus and student expectations of your lesson. Think about the following question: “As my students become engaged in this mathematics, what do I expect them to be able to do?” As just one example, consider having the students show how they use particular representation tools within the day's lesson (e.g., “Show me how you used the fractions bars for comparing these two fractions. What did you find out?”).

Popular considerations for your use of Show Me include showing how particular procedures or representation tools are used. However, and as noted earlier in this chapter, Show Me is also useful for having students describe their reasoning and demonstrate how they solved a problem. Considering the intent and products of what's to be shown is important as you plan. Kacey, a second-/third-grade combination class teacher, noted the following:

“ I use Show Me every day. One of the reasons, not the only reason, I use it is that the student responses provide me with a record of what my kids are doing. I keep copies of their work and use them during parent conferences or, as needed, for chats I might have with my principal about particular students. My Show Me responses provide me with not only a record of what my students have done, but I can actually see the growth of students within particular topics across the curriculum. ”

Larry, a middle school teacher, noted that he uses Show Me a lot because many of his students just need to have the lesson's focus extended to make the math a bit more challenging. He is convinced that his students have grown from providing a quick representation and short oral response to more thoughtful presentations of both solutions and the reasoning that led to the solutions. He noted that he can do this, challenge his students, without thinking he has to plan and implement an entirely different lesson to challenge them.

An important classroom consideration when using Show Me is to be prepared with regard to particular student responses. Our experience has been that, on occasion, some students could not or

would not respond to Show Me or copied the responses of others. While such responses are often unexpected, think about how you might address and monitor these students (e.g., for those unwilling to respond to a Show Me request, consider having the student partner with someone and have them show their response together, or consider an interview for such students).

Finally, as you regularly consider particular components of lessons where you would want students to show what they are doing or have done, recognize the value of the performance-based documentation that Show Me provides. But also recognize how particular Show Me responses, not unlike observations, are helpful to you in guiding the pace of your lesson. A Show Me response may suggest a whole class discussion or review of a lesson topic, but it may also suggest that you quicken the pace of the day's lesson. Perhaps most importantly, Show Me responses identify areas of instructional concern in the future—for tomorrow's lesson or when you plan to teach similar concepts and skills in future years.

Summing Up

Not unlike the use of the interview, daily use of the Show Me technique extends what you observe in the classroom. As you plan, you will consider what you might observe and how such observations may become viable as interviews and Show Me's. These three techniques—observations, interviews, and Show Me—are all closely connected. They all monitor your lesson's progress and help you consider student and class readiness as you plan for tomorrow's lesson. What's more, they provide anecdotal and performance-based documentation of what your students do mathematically each day. As you plan for observing, interviewing, and Show Me, recognize that you will first monitor your students via observing as they become engaged in the day's lesson. What you observe may prompt an interview or on-the-spot use of Show Me. Your observations will dictate the frequency and flow of both the interview as well as the extent to which you use both planned or spontaneous Show Me opportunities. Together, observations, interviews, and Show Me serve as that critical filter for differentiation, which is so important to you as you plan and teach mathematics.