

the “what for” subdimension in that teachers must always ask how their teaching point will help students transfer knowledge and skill in order to meet a rigorous and college-going standard over time.

**Subdimension: Standards** The white board in the classroom states that the purpose of the lesson is “using toothpicks to find the perimeter of rectangles, pages 15–18, lesson five.” The students’ district-adopted textbooks, opened to page 15, state “Lesson Five, Calculating Perimeter.” *Note that the principal starts by stating what she sees. She uses two sources to identify the stated purpose. At this point there is no judgment on the part of the principal. She is simply jotting down what she notices.*

In relation to mathematics standards, this purpose statement confuses me. It seems the mathematical concept at play here is “calculating perimeter of rectangles.” This purpose is reflected in the third-grade standards, though, it is articulated as “finding the perimeter of quadrilaterals.” Jacob’s substitution of “rectangles” for “quadrilaterals” might reflect his choice to simplify the lesson by focusing on one quadrilateral. The textbook designers made a similar decision. I know that subsequent lessons in the book include finding the perimeter of other four-sided shapes. Jacob might be scaffolding to support student understanding of what a quadrilateral is. I wonder why he made this decision, however. Does he know the students need this level of scaffolding? It seems it could limit student ability to generalize their definitions of four-sided shapes and the meaning of *perimeter*. They might walk away thinking that perimeter means different things with different shapes or that the process varies. *Note the principal’s awareness of the district expectations, the standards, and the textbook. Note also that she is trying to figure out why Jacob made the decisions he made. She is moving from her noticing to now wondering about the teacher’s teaching decision.*

In order to fully comment on the standards in this lesson, I need to know what Jacob has already taught the students about quadrilaterals and perimeter. At the end of the lesson, John seemed to be applying his knowledge of rectangles (two parallel sides the same length) to advise Hillary’s measurement of the sides (“It’s the same!!! You don’t have to measure the top.”) but it is unclear how the other students understood this concept. Furthermore, based on student comments, it seems that Jacob preceded this lesson with others that addressed perimeter. At least some students knew that perimeter had to do with the lengths of sides of a shape. I would predict that Jacob would

follow up this lesson with lessons on finding the perimeter of other shapes, including ones with more than four sides and shapes with sides of all different lengths. *The principal is knowledgeable about the pacing guide and the order of lessons it recommends. She is also looking for evidence of the logical pacing of lessons and is seeking reasons for teacher decision making. She is making some inferences based on student comments.*

Additionally, I have some questions about the standards in the arithmetic portion of the lesson. When Jacob set the students loose to add up the lengths of the sides of the rectangle, they worked, to various degrees of success, for ten minutes. Some students completed this task quite rapidly; one started reading his chapter book. The adding of four one-digit numbers is actually a second-grade mathematics standard. By third grade, students should be able to mentally compute this sum, at least of two numbers at a time. In this case, because the figure is a rectangle, students only needed to add two numbers (length and height) and then add the sums together. The numbers were simple enough that I would expect this to be an easy calculation for third-grade students. I would like to talk with Jacob about this portion of the lesson. After he set them up with very clear expectations, “go ahead and practice your adding . . .,” he made the choice to give students total independence (they were to calculate on their own) and he circulated around to see how they were doing. Did he think they needed this amount of scaffolding to know which numbers to add? Was he assessing their computation? Did he believe that the mathematical work of the lesson was more about measuring the sides and that this part was just practice? What does he know about his students that contributed to his choice? What did he learn about them during this time? Why did he give them this amount of time? *The principal has lots of questions about this part of the lesson. She is trying to figure out the teacher’s beliefs about mathematics learning in general and his students in particular. The principal’s questions are rooted in her math content understanding, knowing for example that “the adding of four one-digit numbers is actually a second-grade mathematics standard.” The principal’s ability to notice a lack of alignment with grade-level-appropriate standards prompts her question about whether the teacher was trying to scaffold student learning based on his assessment of students’ prior knowledge or if something else was at play.*

**Subdimension: Teaching Point** It is difficult to figure out Jacob’s intended teaching point. The purpose statement reads, “using toothpicks to find the