

SUZANNE MCSPADDEN: As observers, your job was to focus in on student work and various points in the lesson to see how students were interacting with the task. Brian, what were some observations that you made?

BRIAN: I observed two students, a boy and a girl, that were on the right-hand side of the classroom. The thing that I noticed first when they were given the first prompt was that neither student went strictly procedural. They started to draw models, so it was probably based on previous experience in the class, I don't know. They drew the models but with the prompting, with the posters you guided them right to where you wanted them to go. Because at first neither one of them drew squares in the middle of the poster to talk about the area, they just drew the square and put the numbers. So with your prompting and with the posters they were able to make connections from the procedure using strictly the numbers and the multiplication algorithm to apply it to what area actually is. And they not only showed in their questioning, in their answers, why Robbie was right, but they also explained why his friend was wrong or incorrect. They would explain that he was working on the perimeter rather than the area. One thing that I noticed on both of their posters, they were leaving out the label of the squaring on the inches. And so, I was looking and just wondering if you were going to get to it or if they were going to catch it on their own. And sure enough you went back to it, almost immediately as soon as I noticed it, and talked about why is one label inches and one labeled square inches. Then as soon as you mentioned it, they went back and looked at their work and made the corrections. They were interested in drawing it with the prompting but as soon as they got the cubes they took their drawings and reconstructed what they had drawn with the cubes.

DEBBIE: I was watching four students and two of them that I was watching, were completely opposite to what Brian was just describing, so it shows the differences we have in our classrooms. These two students were drawing the squares without any squares in the inside, without any units on the inside. Actually one of them didn't even consider drawing in the beginning, she just wrote down the sentence that Robbie is correct because you multiply 3 times 3 and you multiply when you do area and you add when you do perimeter. So she did not even consider drawing until she did do the partner talk. Then they did both draw, but they still didn't draw any units on the inside until after there was that discussion of the whole class of how we represent the area. On the next couple of problems they did draw the rectangles as they were posed, and they did draw the squares in, but their explanations on their paper – even though they did do what Brian had said about this is correct, this is not correct – they still were describing it procedurally. So they were not making that connection as you guys were discussing earlier about where is that 3 by 3 in the model or the drawing that they've just created. Something else that was interesting was as the constraints of the problem started to compound, when they got to the part where they had to do the square and figure out what the perimeter would be, so there were multiple steps there, the talk started to be less. So they were doing a lot more thinking and trying to process; they didn't jump right in and start talking like they did previously. When we got to the part when they were given the 36, although these two students had been successful in the previous problem, when they took out the tiles neither one of them built an accurate rectangle. One of them reproduced the 6 by 6, so they didn't acknowledge the constraint of being a different 36. And the other one built a square that was 10 by 10 so he completely lost his sense-making in the process.

PATTY FERRANT: I know in the beginning I sat and talked with him and his partner, and they were successful with showing the area for the 9 square inches and showing it for the 28 square inches. But once they had to make different rectangles for that 36 square inches, he ended up drawing it an 8 by 4 and a 5 by 10. So I'm not sure if he hears different perimeters but did not understand that it still needed to be 36 square units.