

LINDA FISHER: ...by debriefing today's lesson on re-engagement on the candy problem, and we're going to first hear from the member of the team who taught the lesson, so, Hillary?

HILLARY LEWIS-WOLFSEN: I was really pleased with how engaged the kids were in the lesson. It was interesting, when they first walked in the room, we had the first problem already on the board, and the very first comment I heard was, "Uh, we already did this." So I thought, "Okay, this will be interesting!" But they did seem to be engaged. They were raising their hands, and wanting to participate, and it was a variety of kids. In my own class, I have the same six kids wanting to respond every time, but I was able to call on a variety of kids. Not everyone, but I didn't expect everyone to want to talk out. I was really pleased with how engaged so many of the students were in the lesson, both in talking out to the whole group, and in their pairs and paper. I was really pleased with that.

LINDA FISHER: So can you talk about some aspects of the mathematics that sort of intrigued you as you were moving through the lesson?

HILLARY LEWIS-WOLFSEN: Yeah—it was the, I think the third problem that we did, which I think was the last problem with the cream and the chocolate, that took so long to process, to get through all of the different problems that the kids were doing. I could tell that some of them saw where the numbers – combining a 3 and a 2, and multiplying that to get the answer – but their logic wasn't quite there, and it wasn't until we were able to circle the 2 and the 1 with the cream and the chocolate, and the 2 and the 1 to make sense – okay, now we see those 6 chocolates. They kept saying, "Six chocolates" but their reasoning, I wasn't really clear on the logic of the reasoning for those six until we got that. But they had it! But it took some time, and because it took so long for them to do that, we ran a little later and made the last problems a little shorter. But I think they were engaged and involved.

CAROLYN DOBSON: Yeah. One of the things that we were wondering about was in those ones with the chocolate, one of the children would discuss a little bit where they could come up with the answer, on those ones where they'd come up with an incorrect answer, and that did come out of the discussion. We were going to go back if it didn't come out from the kids' discussion, but it *did* come out from the kids' discussion. That was a really fun thing to have happen. The other thing I thought was very interesting is we'd discussed whether to go ahead and use the manipulatives and the tiles, and we decided to go ahead. I was interested that they used them in different ways. They had different ways of using these tiles, and they were quite... Almost everybody chose to use them, even though it was very open-ended about whether to use them or not. It made me think, there are so many different models, and when we just teach straight algorithms, we're taking away our exploration of the different ways of looking at a problem. We take out the richness. And I think that's very fun to watch it come back in.

LINDA FISHER: Could you give us one specific example of how they used the manipulatives that was interesting to you?

CAROLYN DOBSON: One way that was interesting that I hadn't seen before was using the two different colors to stand for the cream and the chocolate, but you use it once, and you say what its' value is. So this stands for three, what was it, three fruit centers? And the other one stands for two caramel centers. I think that was it.

HILLARY LEWIS-WOLFSEN: Yes.

CAROLYN DOBSON: So you have a 3 and a 2. You get the next green one, that's another 3, so now you have 6 here. Then you get another one of the red ones, and now it's 4 down here. You're just seeing two a time, but they have different values. Then, what you end up is two rows of 6. And it was just very interesting that it was  $6 * 5$ , because one row they each were 3 and one row they each were 2, to make the 30.

HILLARY LEWIS-WOLFSEN: I saw one like that, and face value it looked like the child didn't know what they were doing. It wasn't until the explanation that I understood that they understood—what the child was doing.

CAROLYN DOBSON: That's very different from an array model!

LINDA FISHER: You think, how often, in your classroom when you're just going around in a hurry, you see that and it's not what you expect. So you go over and you try to change it without taking that extra step of asking for an explanation first. Because you have a set idea in your head.

HILLARY LEWIS-WOLFSEN: Yes.

LINDA FISHER: Okay, anything else?

CAROLYN DOBSON: I also want to say, I thought it was very interesting, just that first one when we were looking at the candies shared between Valerie and Cindy. That one child who came back and said he thought it was much clearer to see it if you're counting vertically.

HILLARY LEWIS-WOLFSEN: Yes.

CAROLYN DOBSON: And I could see that even after we discussed both of them, that was much stronger for him.

HILLARY LEWIS-WOLFSEN: Mm hm.

LINDA FISHER: Thank you. I just want to thank your whole school for letting us come in and do this piece of research, and to the classroom teacher to open up your classroom, that's such a gift for us all to have that opportunity to observe students in action.