Video Transcript

LINDA FISHER: So I have some questions. We've probably already talked about them, so my first question I think we've talked about, but see if you have anything to add. Did you see evidence of students building or developing their ability to make logical or convincing arguments?

TEACHER 2: I was going to piggyback off of what you were saying, in terms of they were able to use a lot of mathematical reasoning, in terms of ratios and proportions, but I didn't hear a lot of ratio or proportion vocab coming out at all. That was one of my concerns, is how we deliver a problem. These are very fifth-grade friendly, and my fear is, on a standardized test, if they're asked "Solve this ratio or proportion." If they're given that vocab, if they're not exposed to it over and over and over, in the discussion. If they're not exposed to that, they're not going to correctly answer that problem. They're not going to understand what that problem's asking, unless in that discussion those vocab words are encouraged, and really brought out over and over. I thought that that's one thing that could be improved upon, I guess, is really stressing the mathematical vocab so that these kids are exposed to that in terms of standardized testing, and different ways of delivering the problem or the question.

LINDA FISHER: So this is just a thing that you might want to explore as a staff, because I know that a lot of the lesson study teams have been working with that idea. I've heard one person throw out the hypothesis that when you're learning an idea, you need to be able to talk about it in everyday language, because you're busy trying to do the sense-making and the vocabulary comes later. I know some lesson study groups have said, well, we think you have to have a firm grasp of the vocabulary before you can start struggling with the idea. So it would be a good question to pose for yourself, to design a lesson and try that in a couple of different ways.

TEACHER 2: and test how you deliver a lesson and assess their knowledge.

LINDA FISHER: That's something to think about.

TEACHER 5: You were on the wrong side of the room. (laughter) I <u>did</u> hear discussion with students who were using the math vocabulary, which I was surprised at, actually. And I think you said you did too, with Kevin and the other student who was with him, with the cream and the chocolate again, "It's like a ratio!" and I don't think the other students understood at first, but by the time the conversation finished I think he did. He set it up 1 to 2, 2 to 4, 3 to 6, and went on to explain that the student needed to stop there, because 3+6 equaled the 9. But he also had an explanation of why he went on to 4 + 8, I mean 4 to 8, because he was trying to get to 9. But there was no way he could get to 9 making that kind of ratio. So I think the vocabulary is there, maybe not throughout the whole class.

JEAN LIU: We're on that, we just finished that chapter, so it's fresh in their mind.

TEACHER 7: I saw one student, saw the question on the board, he translate the sentence into ratio… first.

CAROLYN DOBSON: I've always been interested in understanding the vocabulary of a question, and that chocolate and cream one, it says he first put in one cup of cream, and then he added two cups of chocolate, and then goes on to say, well, he had nine cups in all, but it doesn't directly say that he's always following a ratio. One other child, that was explaining why one of the other answers didn't make sense, said, "He didn't understand. Look at it. It says for each cup of cream there are two cups of chocolate." He kept repeating that—the question's right in front of him, and yet it doesn't actually say that. He read it into it. There's always hidden assumptions in the language, and he just saw that ratio as something that was really blatant to him. I think that's interesting.

LINDA FISHER: I think that one of the students during the big discussion came up with the idea of serving size, and then he went on to define it as one cup of cream for every two cups of chocolate, which was a really nice way of putting that into formal mathematical language, and then thinking about for every group, or serving size… But just that idea of coming up with your own definition is a very big, you know, "Think like a mathematician", make your definition, "I'm going to define this as a serving size, and I need three serving sizes to get to 9." Good.