

ERIKA ISOMURA: So we did this one with calculators. So this one I threw in there right afterwards with a calculator.

MIA BULJAN: This is on the same day?

ERIKA ISOMURA: Same day.

MIA BULJAN: Okay, so you fixed that one with calculators and said, "Let's try this one with calculators." Got it.

ERIKA ISOMURA: Right. For this one they did a predict, check, we wrote the right answers. They were starting to get it and they were talking about, "Oh yeah, because this is called five-tenths" and that -- they did see that it was more than the .05 that we started with. We talked a little bit on this date about the notation.

MIA BULJAN: Oh yeah.

ERIKA ISOMURA: About ...

MIA BULJAN: Those 3 zeroes, that thousandths.

ERIKA ISOMURA: Those three places are the thousandths and -- because they were saying "How do you know..."

MIA BULJAN: But that last zero is a five, in this case.

ERIKA ISOMURA: Right. But we were talking about how those zeroes in the thousandths don't necessarily -- for what we were talking about, they were naming a place. They weren't naming an amount.

MIA BULJAN: So this is the first time they're really saying *place*.

ERIKA ISOMURA: Right.

MIA BULJAN: Yeah, okay.

ERIKA ISOMURA: So this was the first time they really thought about how do decimals get written, and how does that relate to the names.

MIA BULJAN: It's significantly different than how they were operating with whole numbers and thinking about the zero with whole numbers.

ERIKA ISOMURA: Right.

MIA BULJAN: And instead of -- so, did you anticipate that coming or did you just, were you just sort of going with this each day?

ERIKA ISOMURA: I wasn't sure when they would bring up the language, but they got really agitated about naming it and how it's written and how the names relate. Because this looks

different from that, and they couldn't see a connection between them, so I told them, "Here's one way people sometimes think about the connection. In the tenths, some people think that that one zero is the one place here." That's one way, just a little mnemonic, a little cheat sheet to remember how many places you go over.

MIA BULJAN: Did that feel good to them to have a response, an answer?

ERIKA ISOMURA: Yeah.

MIA BULJAN: That happens sometimes.

ERIKA ISOMURA: Yeah, they just wanted *something*.

MIA BULJAN: Really, make the world make sense again. Oh Lord.

ERIKA ISOMURA: So this one ...

MIA BULJAN: Next day?

ERIKA ISOMURA: Was the next day.

MIA BULJAN: Oh, so you did it with fives here on the calculators. And you went back to the threes.

ERIKA ISOMURA: Mm-hmm [affirmative].

MIA BULJAN: How come?

ERIKA ISOMURA: Just because the threes they were comfortable with.

MIA BULJAN: Okay, so you wanted them -- were you going to give them calculators for this, or did you think ...

ERIKA ISOMURA: No.

MIA BULJAN: Okay, so you wanted them to do something that they'd already patterned out.

ERIKA ISOMURA: Yeah, and this one, because I knew they were in crazy places in their brains, we went back to the fraction.

MIA BULJAN: Nice, okay.

ERIKA ISOMURA: And I wanted to see if the decimal work had completely blown their fraction brains. And it did. So when we did it, they got an answer of 3 times 10 is three-tenths, written either of those ways. Or maybe it's three wholes, or maybe it's thirty-tenths. We really don't know where we are at this point.

MIA BULJAN: You know, Erika, you know -- sometimes this happens where people ask me sometimes, "Aren't you afraid you're going to confuse them?" And I think what you've done here is you've forced confusion. And I tell myself when this happens, because this happens all the

time when you think, “Oh my gosh, I broke them.” But I tell myself when this happens, then they didn't know it very well in the first place.

ERIKA ISOMURA: Yeah.

MIA BULJAN: You know what I mean? If it's so fragile that one new idea totally breaks it, then they needed to be confused because it's not working the way they thought it was anyways. And so I really appreciate -- as a teacher, I really appreciate seeing this because it's that moment when you're like, “Ugh, we're starting all over.” You're not starting all over. The confusion clears faster every time.

ERIKA ISOMURA: Right.

MIA BULJAN: I just really appreciate seeing this and this and the sort of crazy ...

ERIKA ISOMURA: Yeah, and they're over here, and so we did 30 because I thought it's not, you know, that different. I just changed it around so instead of the 3 part getting bigger, now the 10 part gets bigger. And, same thing, they got 30 times 1 and then times one-tenth, and then we think it maybe is still 30, or maybe it should be smaller, maybe it's 3.

MIA BULJAN: There's no way to know.

ERIKA ISOMURA: Right. So we just kind of left those and we left them as we're not sure. We need to do some more thinking.

MIA BULJAN: So, they know that this is -- sort of like, our current thinking, and that's fine.

ERIKA ISOMURA: Yeah.

MIA BULJAN: Okay.

ERIKA ISOMURA: Yeah, they're all, at this -- again, at this point in the year, they're all good with -- we're a little bit in a place of we're not sure, we're going to go mess around some more and come back.

MIA BULJAN: They accept that disequilibrium?

ERIKA ISOMURA: Yeah.