MIA BULJAN: So you were talking about this as a formative assessment …

ERIKA ISOMURA: Right.

MIA BULJAN: ... and you were talking about, like, some of the stuff you thought really was like, where are they in terms of mastery on things that you thought they should nail …

ERIKA ISOMURA: Mm-hmm. [affirmative]

MIA BULJAN: ... and then where are they in terms of strategies for things that maybe are less apparent, and then some things that you really did not expect them to be able to do at all.

ERIKA ISOMURA: Right.

MIA BULJAN: And just to see, like …

ERIKA ISOMURA: Where are they?

MIA BULJAN: ... what's happening.

ERIKA ISOMURA: Yeah.

MIA BULJAN: So let's give some examples.

ERIKA ISOMURA: So I expected them to hopefully be able to order most of these, with probably the exception of the .25 and .75. But the rest I thought would be relatively obvious. So I was curious what they'd do with those two. And …

MIA BULJAN: So this really should be in front here.

ERIKA ISOMURA: Yep.

MIA BULJAN: Okay.

ERIKA ISOMURA: And inside of these.

MIA BULJAN: Just checking my math.

ERIKA ISOMURA: Yeah. So this one has a lot of stuff with that …

MIA BULJAN: Sorry.

ERIKA ISOMURA: ... ordering. I wanted to know …

MIA BULJAN: I'll look closer next time.

ERIKA ISOMURA: ... if they really were getting the fraction-decimal connection. Some of them seemed like they should be fairly obvious and some of them would be a little trickier.

MIA BULJAN: And some you left off.

ERIKA ISOMURA: And some I left off.

MIA BULJAN: And then like you said, maybe here you would have …

ERIKA ISOMURA: Yeah. And I was …

MIA BULJAN: ... done that differently.

ERIKA ISOMURA: ... curious if they would actually go turn these into fractions in order to work with these fractions, as well as to order. So ... fractions on a bunch of these to help them with some of the ordering. They didn't do them all. Day two, they did do them all so that they could match their fractions.

MIA BULJAN: So did they -- which -- they wrote this on day one?

ERIKA ISOMURA: They wrote some …

MIA BULJAN: Or all on day two?

ERIKA ISOMURA: ... of them.

MIA BULJAN: Okay, so it just depended.

ERIKA ISOMURA: Some of them. Yeah. And then, as they got some of the fractions, they said we went back and we reduced the fractions so that, you know, if I saw .25 and I didn't see a gold card, we reduced it to see if maybe there was a gold card. And we found one.

MIA BULJAN: They said reduced or simplified?

ERIKA ISOMURA: They said reduced.

MIA BULJAN: Mm-hmm. [affirmative]

ERIKA ISOMURA: And then these are their thoughts of where they're going to be matching the blue cards next. So they started writing out some ideas.

MIA BULJAN: That’s interesting. 80 divided by 100.

ERIKA ISOMURA: Mm-hmm. [affirmative]

MIA BULJAN: That's really so problematic for them. You nailed it with that one.

ERIKA ISOMURA: Right. So that group I feel like, okay good, they're really starting to understand that if I'm not sure, I can always go back to fractions. And that was one of the big things I was hoping they'd see, that, you know …

MIA BULJAN: But this is the only group that really did it here.

ERIKA ISOMURA: Right.

MIA BULJAN: And so that might be a strategy that you would want to roll out to everybody.

ERIKA ISOMURA: Mm-hmm. So we're going to come back and talk about what this group did and why that would be valuable. You saw the poster, I think, with Ruchita and Federico who said, I can -- not only can I do that, I can use these fractions with common denominators, and compare and order.

MIA BULJAN: Right.

ERIKA ISOMURA: So that one we already did come back and talk about, which is I think why some of them started …

MIA BULJAN: Yeah.

ERIKA ISOMURA: ... to use this a little bit more, because they said, "Oh, oh yeah."

MIA BULJAN: Yeah.

ERIKA ISOMURA: So that was something that -- and that's a really -- that's one of the top things that I want to push as far as a strategy. Decimals never have to just be decimals. You can always work back into a fraction and deal with the fraction if you're happier as a fraction.

MIA BULJAN: Yeah.

ERIKA ISOMURA: So ...

MIA BULJAN: It's so interesting because, you know, I think traditionally, fractions are like scary and hard, and we sort of avoid fractions.

ERIKA ISOMURA: Mm-hmm. [affirmative]

MIA BULJAN: I mean we, as collectively …

ERIKA ISOMURA: Right.

MIA BULJAN: ... sort of avoid fractions. It's sort of nice to have fractions be your fallback, instead of the …

ERIKA ISOMURA: Yeah. Some of that is my background. So as a -- you know, I studied science in college and we were hugely anti-decimals.

MIA BULJAN: Right.

ERIKA ISOMURA: Decimals, bad. Decimals bring too much uncertainty. If you have to do any rounding, you just messed up all kinds of stuff. So keep as a fraction as long as you can, and then at the end, go ahead …

MIA BULJAN: In that final analysis.

ERIKA ISOMURA: ... find that decimal. But if you do the decimals too early, you're going to bring way too much uncertainty into your work. And so I was trained, decimals are bad.

MIA BULJAN: Yeah.

ERIKA ISOMURA: Kind of that, fractions are your friend. You do fractions until you have no choice.

MIA BULJAN: Yeah.

ERIKA ISOMURA: And …

MIA BULJAN: Well, you know what's really lovely though is even like -- you know, sometimes it's like, well, fractions and fraction operations, and decimals and decimal operations, and I think in the sort of -- the quest to cover the units, I think, you know, the most important thing about decimals is that they are fractions.

ERIKA ISOMURA: Yeah.

MIA BULJAN: Right? I mean, besides the place value structure, of course. But I mean, being able to go between decimals and fractions is one of the most important skills that they can have. And it sort of gets lost …

ERIKA ISOMURA: Mm-hmm. [affirmative]

MIA BULJAN: ... in favor of operating on both of them.

ERIKA ISOMURA: Right.

MIA BULJAN: And so, this idea here of using these cards to really keep it, you know -- even with the operations in, keep it embedded in this idea that these are equivalencies, is really helpful.

ERIKA ISOMURA: Yeah, so that's one of the big things we're going to keep diving back into is as we move more fully into decimal work, it's not. It's not decimal work.

MIA BULJAN: Ahhh. Nice.

ERIKA ISOMURA: So we talk a lot about, is there another name? Is there something else? Is there a different way we can see it that means the same but maybe on paper or in number form looks different that's easier for me to think about?

MIA BULJAN: Yeah.

ERIKA ISOMURA: And I feel like -- I'm hoping at this point, that they do feel like fractions are their home base, so they can always step back to that.

MIA BULJAN: Yeah, and for the sense-making piece of it.

ERIKA ISOMURA: Right. And then, go back and check your work with, you know, however you're going to check it. Check it back to the fraction, check it back with a calculator.

MIA BULJAN: Well, you talked about estimation, like even thinking fractions when you see decimals, some of those big ideas that you're having them work on, things like, when I divide a fraction by a whole number, my number should be getting "mm." You know, my result would be bigger or smaller or whatever it is. Like those kinds of ideas, if they see those interchangeably, can help them, you know, just pay attention to their answers.

ERIKA ISOMURA: Yeah.

MIA BULJAN: Or you know, that's the dream, right? That your kids will see an answer and be like, "That doesn't make sense."

ERIKA ISOMURA: Right.

MIA BULJAN: But it never happens because they don't necessarily have that relationship.

ERIKA ISOMURA: Right.