

MIA BULJAN: We talked about this at this card sort idea, as, like, a way of a formative assessment lesson, like an FAL idea. There's many of these for the middle school and the high school, but creating your own, first of all, is lovely. I love the way that you're reflective about which ones worked and which didn't work. We went over it many, many times and changed some and pulled ...

ERIKA ISOMURA: But it's when you see it with ...

MIA BULJAN: ... trying to think about the misconceptions.

ERIKA ISOMURA: ... them. You're not going to pull as many things out. So, yeah, now I have some new ideas.

MIA BULJAN: So there's two things I actually want you to talk about. And you can talk about them in whatever order because they're related. One is, what are the misconceptions you were trying to surface? And then, the second part is, what strategies did you see them using that you wanted to capture and maybe push out to the whole class either in number talks or in debriefing of this particular lesson?

ERIKA ISOMURA: So one of the things was, I really wanted to find out if they understood just quantity in decimal form. Like understood that hundredths are smaller than tenths because they kind of sort of look the same so maybe they're kind of sort of the same.

MIA BULJAN: That's a real thing, man. This, this, like the -- 80 divided by 100 here -- this is a real -- a lot of your kids were really ... You picked these two numbers similarly on purpose.

ERIKA ISOMURA: Right, and tried to write something that was not going to be obviously either of them by putting the 80 over the 100. Yeah. So that was one thing. I really wanted to get a better understanding of their understanding of just magnitude, size.

MIA BULJAN: That is mean. So really this one would have to go here as an equivalent.

ERIKA ISOMURA: Right.

MIA BULJAN: What?

ERIKA ISOMURA: Yeah.

MIA BULJAN: Do you have one that matches this?

ERIKA ISOMURA: Yes.

MIA BULJAN: Is there an eight -- is there a blue card for it?

ERIKA ISOMURA: There is.

MIA BULJAN: They just don't have it on here, okay.

ERIKA ISOMURA: I think. Oh no. No, there isn't. I'm wrong.

MIA BULJAN: You are the meanest person on the planet.

ERIKA ISOMURA: Yeah. It was interesting watching what they did with it. So that was one thing. I also wanted to see if they were -- they understood money. So I wanted to know -- I, like, wanted to push that understanding of decimals and money have a super huge connection. If you understand coins, you've got a lot of knowledge about decimals.

MIA BULJAN: Except that ... So what was one of the things that happened? With Ruchita and her coins?

ERIKA ISOMURA: Oh, yeah. Except that Ruchita's group saw the .25 and the .75 as coins. But then when it came to the one-fourth of four, they also thought in terms of four quarters, so one fourth of four quarters is one quarter, therefore it's .25.

MIA BULJAN: That's the best thing ever because it kind of makes sense.

ERIKA ISOMURA: It totally make sense, it's -- but we need to have a discussion about if that's true, what is your whole, and you know, that idea of what -- because we talk in our class a lot about parts versus wholes. A lot of times we don't talk numbers so much as we talk about is this going to be a whole, is this going to be a part, are we on the right side of the decimal, are we on the left side. So we're going to have to have a discussion. Dylan, on the other hand, saw this was I have four things and one-fourth of them means I have one of those things, so I have one whole thing.

MIA BULJAN: So he really, he really approached -- he is this kid. He's probably in every 5th-grade class. He approaches everything very operationally.

ERIKA ISOMURA: Right.

MIA BULJAN: Multiplies across, and he says four-fourths is one. And he's sort of like done with it.

ERIKA ISOMURA: Until you ask him and make him talk.

MIA BULJAN: Well, and I love in that discussion he was able to say, like, her explanation makes sense, but operationally, I know this is -- this is true too. I really think he's come a long ways in terms of not just being very dogmatic about his operations and really being open to, like, listening to somebody else. Her explanation does make sense for her context.

ERIKA ISOMURA: For him, because, as you said, if you can operate on it, there's no question, there's no discussion, it's done. And that's, again, not how I typically do math in my classroom.

MIA BULJAN: So can we look at Diego, who had the same one. You asked him about it.

ERIKA ISOMURA: Yes, Mr. Speedy there.

MIA BULJAN: There was so many cute things where like ...

ERIKA ISOMURA: Yeah, so one-fourth he said was two-tenths because one-fourth times four -- he knew that one-fourth times four is two. That's when I went, "How do you know?" "Because one-fourth times four is two." Then I asked him to show me.

MIA BULJAN: To show it. But, so -- he immediately also wrote it as -- I don't know if you can get it, Mark -- but he immediately also wrote it as four times a fourth. So interpreting the "of" as -- which is funny because the other lesson that we did, right, with the bar models. And his proof was to write out one-fourth plus one-fourth plus one-fourth plus one-fourth. And I was like, "Here we're going to go into crazy town, right? He's going to get like four-sixteenths or something." And instead, he circled and said, "If this is a half and this is a half, a half plus a half equals one." He did this in like a blink of an eye and said, "Oh just kidding. I just totally convinced myself it's one."

ERIKA ISOMURA: Right.

MIA BULJAN: And I think -- when I look at the value of these different strategies, like you said -- I said, "Are you ever going to talk about this particular, like, one-fourth of four?" You said, "Not -- not yet."

ERIKA ISOMURA: I wanted everybody to mess with it first because there's going to be three different groups. There's going to be Ruchita's group with the quarters, because -- and I think, really, they're the only people who are going to do that because they ...

MIA BULJAN: But it makes so much sense the way they describe it.

ERIKA ISOMURA: Right. There's going to be a cluster of them that get the one. They did -- Jonathan's group did that also. So they talked about there's four people and one-fourth of the four people is that one person, so it's one. Then, yeah, the operations people. Then there's going to be the who-knows-what group of everybody else.

MIA BULJAN: Who probably is thinking operationally, but can't manage the operations.

ERIKA ISOMURA: Right.