

MICHELLE MAKINSON: Well, what I saw was that most students felt that the set or area models were the easiest to comprehend. I think those are ones that they're most used to seeing as ways of representing fractions. Um, and so they were comfortable with that, um, particularly when it was, you know, the numerator was smaller than the denominator. They got that. That made sense to them. And the leap from that card to the verbal representation was fairly easy.

And the one that had the...was the most difficult, I think, clearly was the number lines. They're just not used to doing that. I know what Common Core number lines are being introduced in third grade when they didn't even look at them at all. And fourth, we did not do as much as we should have in the past with that. So I think it's the newest thing and the most novel thing, and they're not making the leap between dividing, partitioning, cutting into equal pieces in a set or a region the way that they should to the number lines, so it's going to take some more work to solidify that.

There were two things that I was particularly excited about. One was, certain people were going beyond the original fraction and were recognizing equivalent fractions and dividing things into smaller but equal pieces. Um, and then another exciting thing was the variety that they chose. I made the assumption that they would choose the easiest one every time. And some people really did extend themselves into ones that were harder to do, and so I was happy about that — to see the variety, the depth, um, was better than I anticipated.

SALLY KEYES: For the representation?

MICHELLE MAKINSON: For the represen...for the one they got to choose themselves.

SALLY KEYES: Okay.

MICHELLE MAKINSON: Well, I think dividing into fifths is really hard to do visually. I mean, you can't just go half and then half the halves, um, which would have been easier for them to do. So it was more challenging. Um, so I did see that, um, I think it depended on how they were trying to get at that size piece. Like, a number line, it would be harder for them to do but they could do out of sets or something like that would be easier, so that's what I saw about it. That one was a little more difficult.

Right. And their notion of what a whole is within a number line — that there's multiple wholes is kind of blowing their mind at this point. But we're about to land on mixed numbers and improper fractions, and see more than one whole being involved in a number, and I think that will come together. We've done a lot of folding of papers, and cutting things into pieces, and putting things together, taking them apart, and I just think it hasn't solidified yet, and we're about to land somewhere good.

Again, needing that depth of explanation. If you said you picked it because it was the easiest one, why was it the easiest? What was it about it that made it easier for you? Um, so that...people got stuck on that. Um, and people are at totally different places. Some, you know, just wanted to say it was easy and now they're done. Some could go into lots of language, lots of depth about why they pick that one.

And, you know, I could see people, you know, one child had picked the one half strip, which I thought was perfect for that person, but could not explain why he picked it. But I know him and I know why he picked it, because he understands what one out of two is, you know. And...but he just couldn't get the words out for it.

And, you know, I have kids where their writing output does not match their thinking, and they're not able to articulate things in that way, or even verbally, you know. So they would need a lot of coaching, a lot of coaxing, a lot of one-on-one work to actually get their ideas out on paper, and it's just part of who they are.

And you don't ever grow that skill unless you practice, so the fact that it didn't go as well as I would like it to, doesn't mean that it's not a success. It just means it's one place on a road towards it, you know? We might have a long journey ahead but, but we made some progress. I mean, even just attempting it. Even...there are people in this room that ... so much from even having talked to anybody. Even if they're asking me to go to the bathroom that this was huge leaps for them just to even participate in the process.

Well, um, I think we've got the first type of representation areas and sets pretty solid. And I think we understand "parts of," and that they're supposed to be equal whether or not we draw them that way free hand because that's also some hand-eye coordination issues that are in this room. Um, but we clearly would need...and we've been working on writing story problems in other contexts, so I think that one is pretty solid.

Number lines are where it's really breaking down for us, and we just need to take the skills we developed on other representations and transfer to where they see that parallel. Because that's when they're going to be able to justify the matching, is go "Oh, this number line is divided into four pieces the way there are four circles over here. And the place where they stop — three fourths — is three jumps over the way we shaded in three out of these four circles."

And make that connection and see that it's actually three equal pieces is just another way of having a whole, and we're going to see that. And then I've created lessons that have to do with social studies that are going to re-engage us with practical applications for a number line in terms of, like, a time line and seeing that happen, and really think about the spacing and being able to cut that number line — partition it properly, and how do you go about doing that, because that's a whole skill set of how you're going to approach cutting it, you know. And how that relates to the denominators that they're supposed to be used to working with.

Well, I think it gave a lot of the kids an opportunity to work collaboratively and find out where they either have that skill or don't have that skill. Um, there are some people in here that need to work on speaking nicely to each other and not becoming frustrated at having to explain their thinking, or slow down a little bit to help somebody else. Kind of getting that idea that we're all working together and that we're not really going to be successful as a group if we don't keep everybody moving with us. And there's some people that that happens naturally for them.

They are interested in other people's development. And some people are a little more self-centered; they're still the center of their own universe. They have not yet evolved and so we kind of have that mixed bag of people that are going, "Oh, people don't like it when I'm yelling at them. People don't find it productive when I withhold information." And those are like growth moments for them. It's not an ideal situation but it's what I have this year.

I think that they will start to see equivalence more clearly. I think I'm going to see more people that are going to be able to see the relationship between one third and two sixths, and where they couldn't see it before — the whole idea of there's different ways to group the same amount of stuff.

And I think that's going to become clear to them because they've had to match things up more. Like, they might make that leap to matching to an equivalent and why it is. Um, and maybe just spend more time analyzing things, drawing pictures, finding a way to represent it themselves that make sense.

So pushing those practices to represent things in a way that make sense — to make sense of the problem. I think they might go further and trying to understand what it's asking them and therefore be more successful. So I am expecting to see growth. I mean, some people were already there so there's not going to be growth there, but maybe their explanations will become more elaborate — drawing on more detailed pieces of information about what they're analyzing.