

MICHELLE MAKINSON: And you're going to be thinking back to what we've been working on for quite a while now. *Whole* could be expressed in multiple ways using various representations. How many representations did we put on our chart? How many card sets did we have?

STUDENTS: Four.

MICHELLE MAKINSON: Four? I think there were...

STUDENTS: Five.

MICHELLE MAKINSON: Five. But we're going to talk about four. So the green cards were set or area models, right? You might think of it as a picture, right? And the white cards were verbal representations that use that language "parts of" and the dark blue were contextual, or another way of thinking about that would be, they were word problems. Nod your head if this is making sense to you, you're recollecting this. And the light blue cards were number lines. Okay? So that's four different ways to represent the same information, right? So what the prompt is and what you're going to be writing, because this is a quick write — multiple sentences, organizing your thoughts, showing me what you're thinking. Please put your book away, Bob. Which representations made the most sense to you? Why? Notice it has "S" in the parentheses. So if you only have one representation that makes sense to you, is that okay? Yup. If you have more than one, is that okay? Absolutely, so which ever ones of those four made sense to you, write about that in the first part. Yes? No, what's the meat of it? The...

STUDENTS: Explanation.

MICHELLE MAKINSON: Explanation. And what word captures that? What question word is that? What question word is used? Say it.

STUDENTS: Why.

MICHELLE MAKINSON: Why. So you need to answer why you think this is one that made sense to you, and why you think this one doesn't make sense to you. And what would you do if all of them made sense to you? Will you have anything to say about ones that don't make sense?

STUDENTS: No.

MICHELLE MAKINSON: If none of them made sense to you, would you have anything to say about ones that do make sense?

STUDENTS: No.

MICHELLE MAKINSON: No. So hopefully we're not that extreme, but if we are, you've got to tell me where you're at, okay? If you have any questions this is the time to ask. Okay, I want to see writers writing.

MICHELLE MAKINSON: Mariana, are you stuck, honey? So the green cards made sense to you? So tell me why. They made sense because... More Fletch, I want more. Because remember there's two parts and lots of stuff to say.

MICHELLE MAKINSON: So we're going to create some representations of certain fractional parts of a whole. And we're going to do either...who can remember what kind of green card was? It was...

STUDENT: Picture.

MICHELLE MAKINSON: A picture. And specifically, does anybody remember the math words for it? Lily?

STUDENT: Sets and area models.

MICHELLE MAKINSON: Set or area model. Okay, so that's what you're trying to create. So I'm making a blank space. You don't have to do that. I'm just giving you an idea because I'm making this like a white board. So on one part you're going to put a representation as an area or a set model of a fraction that I haven't told you yet. Okay? So that's the first kind that I'd like to do. Does that make sense? An area or a set model. And I would like you to do it for this fraction. Let's all say the fraction together.

STUDENTS: Two out of three.

MICHELLE MAKINSON: Is there another way to say that?

STUDENTS: Two out of three.

MICHELLE MAKINSON: Two out of three?

STUDENTS: Or two thirds.

MICHELLE MAKINSON: Or two thirds. Okay. Are there any questions about what I'm asking you to do? White boards need to be on the table and you're drawing an area or a set model for two thirds. And then what you're going to do is you're going to do this individually, right? And then you're going to share, when both you and your partner are done, share your representation and see do you agree with the choices your partner made. Why or why not? Just briefly. Okay? Shark-fin when you're ready to talk to your partner. And when two sharks are next to each other, they should start having a whisper conversation about each of their representations. Your partner is over here. Shark-fin until you have two sharks that...two partner sharks are (inaudible).

STUDENT: I did a square for rectangles and then there were three, and then two already shaded. So there's three...three are there and then two are shaded.

STUDENT: I did the same thing. I drew a rectangle and I tried to (inaudible) three parts that's shaded. I divided into three parts and shaded two of the parts.

STUDENT: So it's the same because...

STUDENT: It's equivalent. It's the same.

MICHELLE MAKINSON: Share your representation. Explain why you drew what you drew.

STUDENT: Of course we have the exact same eyes.

MICHELLE MAKINSON: You guys have similar thinking. Hm. How are your two drawings the same, Corrina?

STUDENT: Um, no. I just think I did the circle and I didn't (inaudible).

MICHELLE MAKINSON: You made how many pieces?

STUDENT: Three.

MICHELLE MAKINSON: Three pieces.

STUDENT: Okay...

MICHELLE MAKINSON: She's speaking.

STUDENT: And I did it with markers.

MICHELLE MAKINSON: So how many did you fill in? You shaded...?

STUDENT: Two...

MICHELLE MAKINSON: Two out of the three? Is that what Denis did?

STUDENT: Yes.

MICHELLE MAKINSON: Yeah. What's different between your two?

STUDENT: Same two doors are shaded but the same two doors are shaded into two different points.

MICHELLE MAKINSON: Ahh, yeah! So it's like yours is turned a little bit or hers is turned. Interesting.

MICHELLE MAKINSON: Okay, so that was the green card. So now I would like to do a verbal representation. And what words did we see over and over again on the white cards? What language did we see repeated?

STUDENTS: Out of.

MICHELLE MAKINSON: Out of. Parts of. Okay.

STUDENT: (Inaudible)

MICHELLE MAKINSON: Okay, those are important, right? Because you can't have different size pieces, right? Okay. So the fraction you're going to do now...let's say this together.

STUDENTS: Four fifths.

MICHELLE MAKINSON: What's another way of saying it?

STUDENTS: Four out of five.

MICHELLE MAKINSON: Four out of five, okay? So you're going to write a verbal representation just like we saw in the white cards for that fraction. And then when both partners are finished, compare your answers and discuss it. And if you disagree, work towards an agreement. Okay, hold up your board and show it to the room. Looking around, do you have something very similar if not the same thing? Yeah?

STUDENTS: Yeah.

MICHELLE MAKINSON: Okay. So we've done a set, an area model. We've done a verbal representation and now I would like you to write a word problem, but for this fraction. What fraction is this?

STUDENTS: Three fourths.

MICHELLE MAKINSON: Three fourths. So you need to write a word problem, a contextualized representation that speaks about a situation involving three fourths. So you can erase your boards from before and now write this new type of representation. We're going to do a double share on this one. Fletch, this is not an appropriate time for that. Okay? Turn your body. When your partner is done you're going to share with your partner, and then when everybody is done we're going to get up and mingle, mingle, mingle, and find a new person to share and see if we can explain our choices again. And see if you can get better at explaining it because with this you're going to have to show how it relates to three fourths, aren't you? How...and everybody's word problem will be different. If you've shared with your partner, I want you to push in your chair and start mingling around the room silently. Silently. Push in your chair and mingle if you're done. You're not done!

STUDENT: There are four pieces of pizza. Three of them are eaten. What is this fraction? So it's three fourths because three of them are eaten.

STUDENT: Cool! I'd say...three out of four equal parts and maybe I can do it, like, three hamburgers for people and four french fries for a lot of people. They need to share like...

STUDENT: It's like, let's say four hamburgers. Three of them were eaten. Then it's three fourths.

STUDENT: Yeah.

STUDENT: A toy store sold three balls out of four balls in total. What fraction problem would it be?

STUDENT: I disagree with you because first you said three out of...oh, yeah! I agree with you. Three fourths. So mine is: There are four candles in a cake. Three candles are already blown. How many candles are there? Yeah.

STUDENT: Panda baked brownies. He sliced the brownies into four pieces. He invited some friends over to eat the brownies. But he grew impatient and ate three of the brownies. What fraction is that?

STUDENT: Okay. This guy, they had three out of four swords he had for his pirate party. How much is that? And if more friends came, how much would be...would that also be?

STUDENT: That would be three fourths.

STUDENT: The second one, it would be...I think it would be four sixths.