MELISSA NIX: I'm gonna move on to another number problem, to see how you're doing with that. You shared all this good thinking. Here's another one for you. Again, chest -- finger on your chest when you come up with an answer. And then push yourself to see if you can come up with a solution another way.

There are many ways to solve a problem. And I value your creative thinking.

Honestly, do you find this one a little bit more challenging? Yeah. It's okay. Challenging's good. Right? It's making our -- it's making our brains grow. It's okay to push yourself a little bit. Now, let's move these around and see what we come up with!

Do you wanna suggest what answers you think it is? So, on the count of three -- one, two, three -- what do you think it might be? One, two, three?

STUDENTS: 6.

MELISSA NIX: Okay. So we think it's 6. Anybody thought maybe it was not 6? Okay. Does anyone wanna share? Anyone! Whole room's welcome. Anyone wanna share? Somebody came up with 6 somehow. Ellie, you wanna be first again?

STUDENT: Um. First I ... Times 0.5 is the same as divided by 2. So I did 16 divided by 2 is 8.

MELISSA NIX: So you said, 0.5 is the same thing as one half, which is the same thing as dividing by 2. So, knowing that information, you said, "I'm gonna do 16 divided by 2," and you got 8. And then you took 8, and then what next?

STUDENT: Um, to, to multiply by three-fourths, first I divided by 4, which is 2.

MELISSA NIX: Mm-hmm. [affirmative]

STUDENT: And then I multiplied by 3, which is 6.

MELISSA NIX: You could have written that out a little bit differently. If I had written it, such as this ... Is that the same thing? How do we know that's the same thing? Who can tell me why that's the same thing?

These are equivalent expressions? I got nods, but no one's willing to tell me why? Itzel, tell me why that's the same thing.

STUDENT: Well, because, 8 divided by 1 is 8, so it's the same as 8.

MELISSA NIX: Okay. So, it's 8 divided by 1 is the same thing as 8. So I am allowed to write it like that. And then am I allowed to write it where I multiply my numerator, and I multiply my denominator? Does that still feel like the same thing as this one above it?

And so then what Ellie's doing is moving these in the different directions, so she's then dividing by 4. Does that feel legal? Is there a property that allows us to move the numbers like that?

STUDENT: [inaudible]

MELISSA NIX: Say it to me again, Miranda?

STUDENT: Commutative?

MELISSA NIX: Yeah, you're right. Everyone, say that -- what's the property that allows us to move those numbers if it's multiplication or addition? It's the ...

STUDENTS: Commutative.

MELISSA NIX: Commutative property. So she commuted those numbers to make the math easier to envision.

Anyone else do it similar to the way Ellie did it? Awesome, that means somebody else did it differently.

STUDENT: [Laughs]

MELISSA NIX: Do tell! Now it's crickets ... No one? You know, I heard more than one person scream out 6.

Okay, let's try it together then. What happens if ... I didn't take one half of 16 first? Could I take three-fourths of 16?

STUDENT: [inaudible]

MELISSA NIX: So using what Ellie did here, is there something I could do to make the math easier, if I wanted to take three-fourths of 16? Or what do you think you would do if you were to take three-fourths of 16?

What are you thinking, Nicky?

STUDENT: Um, you can do 4 times 4 to get 16. And so ...

MELISSA NIX: So ... So 16's the same thing as 4 times 4?

STUDENT: Mm-hmm. [affirmative] Then, if you do, um, three-fourths of that, it would be 12.

MELISSA NIX: So three-fourths of 16 would be 12. And now I have, five-tenths times 12 or 50% of 12.

STUDENT: 6.

MELISSA NIX: You get 6!

MELISSA NIX: Okay, your brains feeling okay? A little bit stretched? They're gonna get a little bit more stretched. So stretch your arms, you're gonna need a little bit of exercise here,

because we're gonna do some math-aerobics. Um. Not quite! You're gonna be totally skilled at doing what we're doing, and you're gonna push yourself to known how to do this.

I intentionally add in some fractions and decimals, because you're gonna see them again in a few minutes. And I just don't want you to feel blindsided by them. I want you to think about the knowledge you already have, about how to move these things around to apply to what we're doing today. That sound okay?

All right!