MELISSA NIX: How did you know that *z* and *z* got me 2*z*? Does that look like anything we've already done before?

I heard some people talking about it. Like, I heard this group talking about it. So I'm gonna call on Mason from this group and say, "Mason, does that look like anything we've done before?"

STUDENT: Yeah, like the, um, 15 times 4 problem?

MELISSA NIX: Oh, so when we did the area model of multiplication, and we did 15 times 12.

STUDENT: Or whatever two-digit ...

MELISSA NIX: Or whatever two-digit ... Like, it -- we did 15 times 12 I think, um, if not today then a couple days ago. But when we did 15 times 12, what did we break that down into?

STUDENT: Well, some people ... It was different from how we broke it up. Everybody did different, but, you can do 12 times 10 and 12 times 5 ...

MELISSA NIX: 12 times 10, and 12 times 5 ...

STUDENT: Yeah.

MELISSA NIX: Or if we did it the box method, it would be 10 and 5 and, 10 and ...

STUDENT: 2.

MELISSA NIX: 2. So, this quantity of my length is the 12, and what math am I doing to these two values here?

STUDENT: Adding them.

MELISSA NIX: So, who can write -- say that for me in a full sentence as to how I knew that that was ... 2*z* was *z* and *z*?

MELISSA NIX: [inaudible] ... picking up what I'm putting down?

STUDENT: Mm-hmm. [affirmative]

MELISSA NIX: Brave soul. Who thinks they can explain to me why that's 2*z* there? Maybe using this as an example?

Talk to your partners. See if you can come up with some bravery.

STUDENT: It's two *z*'s.

STUDENT: Two *z*'s.

STUDENT: It's not *z* times *z*, because that's *z* squared, since you multiply those.

STUDENT: Because 10 plus 2 is the 12 parts, and then if it was *z* plus *z* it would be 2*z*.

MELISSA NIX: Did you and your partner come up with anyway that you could explain--

STUDENT: If you add the sidelines of the square it come up to 2*z*.

MELISSA NIX: So that added the sidelines of my square or the dimensions of this figure, it would come up to 2*z*. Great thinking! Check this one out ... On your whiteboard, can you write an expression for the area of this figure? Once you write an expression for the area of the figure, see if you can prove that it is correct by maybe drawing the picture like we just did on the slide before.

For the area of this figure ... is my expression as simplified as it can be?

There's a couple ideas that I want to show you just to kind of review a little bit while we're here. So on to what we just looked at, this person took this and split it into how many pieces?

STUDENT: Two.

MELISSA NIX: Two pieces. And why two pieces?

STUDENT: Because there's two ...

MELISSA NIX: Because there's two *z*'s. Now I'm going to ask real quick, though: Now that we've combined these two rectangles, are the two *z*'s only for this two -- this first shape?

STUDENT: No.

MELISSA NIX: Then how can I see that in your picture? Go ahead and keep trying.

Before we go to break, I'll show you one more. Let's all look up here for a second, at somebody else's thinking. See if we can understand what they're thinking. I stole this paper from Leila. Would be willing to help tell me sort of what you're thinking?

STUDENT: So the first, the smaller rectangle works better. It's two so you'd have to select it earlier, which is *z* squared and ... *z* squared. And the other rectangle would be, uh, just 8 more.

MELISSA NIX: Be 8 more. Now, up here, I see the length should be how much?

STUDENT: 8.

MELISSA NIX: 8. Is that where we're at here? What is the length up here?

STUDENT: 4.

MELISSA NIX: 4. So I'm going to excuse you to break, and I want you thinking, "If this is a gift, how can we modify it to make it express what we want it to when we come back in?" I'll see you in a few minutes.