MELISSA NIX: Leila, you came to me at break and said you wanted to do something. What would you like to do?

STUDENT: Uh, I'd like to fix the picture.

MELISSA NIX: Oh, okay. So, you revised your thinking. Go on up.

STUDENT: Yes. I did.

MELISSA NIX: Want to go on over to the whiteboard? Or to the back of the camera. Would you be so kind as you revise your thinking, to tell me what you're doing and why you're doing it.

STUDENT: Well, my picture shows actually only 8 here. When it should be 8 times 2, which is 16. So, I need to add about four more lines, I think. To fix it, so it shows 16. So, now it's actually turned to the equation.

MELISSA NIX: So, now the top -- this unknown dimension's value here is how much, everybody?

STUDENTS: *Z*.

MELISSA NIX: *Z*. And, this is equal to ... count with me.

STUDENTS: 1, 2, 3, 4, 5, 6, 7, 8.

MELISSA NIX: 8.

STUDENT: Yes.

MELISSA NIX: And, this one is equal to ... how much here?

STUDENTS: *Z*.

MELISSA NIX: And, how much here?

STUDENTS: *Z*.

MELISSA NIX: So, all together?

STUDENTS: *Z* squared.

MELISSA NIX: Oh.

STUDENTS: 2*z*.

MELISSA NIX: Interesting. I heard different answers there.

STUDENT: 2*z*.

MELISSA NIX: So, tell me what you think it is and why you think it's that?

STUDENT: I think it's 2*z* because if you -- wait -- if you divided that by half, it will be *z* and *z*. And, that will give you two squares. So, both the squares is *z* squared because *z* times *z* is *z* squared.

MELISSA NIX: So, *z* times *z* gets me *z* squared. And, so this length is just *z* and *z*, which is what again?

STUDENT: 2*z*.

MELISSA NIX: So, *z* and a *z* is how much everybody?

STUDENTS: 2*z*.

MELISSA NIX: So, 2*z*, *z*, and eight. And, all together you have down here -- Leila, tell me what was your equation simplified?

STUDENT: Um, 2*z* squared plus 16*z*.

MELISSA NIX: Give me a thumbs up if you agree with what she came up with. Thank you very much. I appreciate the gift and the modification, the edit of that. You may take your whiteboard back, yeah.

All right, you may clear off your whiteboards, please. I have another problem for you.

STUDENT: We just did one.

MELISSA NIX: You are going to draw a figure with the dimensions that I show you. And I'm going to start by asking, what do you know about this figure? What do you know about this figure? Y'all know something about this figure just by looking at it. So, I feel pretty comfortable pulling a stick and saying what is something you know about this, Scarlett. What is something you know about that figure?

STUDENT: Um, it's *a* squared *a*, so there's probably two 3*a*'s.

MELISSA NIX: Ah. Okay. Probably two 3*a*. It's 3*a* squared. Something else you know about this figure, Adonay.

STUDENT: It's got variables.

MELISSA NIX: It does have variables. And, the last one. Ella, what do you think? Oh, Ella is not here anymore, sorry. I'm going to change the letter at the end and call you, Ellie.

STUDENT: [laughs]

STUDENT: Um, I think that three *a* squared is the same as 3*a* squared.

MELISSA NIX: You think that three *a* squared units is the same as 3*a* squared. What do you think I'm going to ask you about this figure, which by the way is a rectangle? I was going to wait for that one, but no one said that one. Amanda was like, “Obvi.”

STUDENT: [laughs]

MELISSA NIX: All right. What do you think I'm going to ask you about this? Turn to your partner. What do you think I'm going to ask?

STUDENT: It's bigger.

STUDENT: It's bigger.

STUDENT: Yeah, what's the figure.

STUDENT: The figure.

MELISSA NIX: Think I'm going to ask what the area is?

STUDENTS: [crosstalk]

MELISSA NIX: Can you draw this figure instead?

STUDENT: Yeah.

STUDENT: If you -- like had a …

MELISSA NIX: If you haven't done so already, go ahead and draw this figure.

STUDENT: Make a square.

STUDENTS: [crosstalk]

MELISSA NIX: And, what do you think I'm going to ask you ... Come back to me in three ... two ... one.

STUDENT: And, then you would split it up into three parts.

MELISSA NIX: Makenna, what do you think I'm going to ask you about this question?

STUDENT: Um, maybe what the area is.

MELISSA NIX: Maybe what the area is. Well, let's think for a sec. Is area going to be ... What is area of a figure?

I asked you to solve for the ...

STUDENTS: Area.

MELISSA NIX: Area. And, when you solve for the area, as Leila showed us. She said it was 2*z* squared and 16*z*. Where in the figure does that area get recorded? Where in the figure does that area get recorded? Where do I write the area? What part of the figure did I write it in? Or on? Or into? Qwentin, where did I put that area? Where did I record it?

STUDENT: Uh, on the inside.

MELISSA NIX: On the inside. So, Makenna, do you think I'm going to ask you what the area is of this figure?

STUDENT: Probably not.

MELISSA NIX: Why not?

STUDENT: Because, um, it's like, lopsided figure. It's, um, lopsided.

MELISSA NIX: Yeah. Heaven, what are you thinking?

STUDENT: You already gave us the area.

MELISSA NIX: Right. I'm giving you the area right now. But, writing it on the inside of the figure, I'm trying to communicate a convention that says we tell you the area by telling you on the inside of the figure. Area is on the inside and what's on the outside?

STUDENTS: Perimeter.

MELISSA NIX: The perimeter or the dimensions of the figure. So, Heaven, if I'm telling you the area, what do you think I'm going to ask you about on this problem?

STUDENT: What are the dimensions of this figure?

MELISSA NIX: All right. Did you hear the question?

STUDENTS: Yes.

MELISSA NIX: What are the dimensions of the figure? That's your challenge.