

AMY BURKE: We're going to do a great, a great — we're going to do a great task today, guys. Am I selling it? Do you believe me? It's going to be a task that asks you guys to be multimodal, meaning you're going to build something, then you're going to gather your data and organize it in a table, then you're going to use that technology that we've been practicing, the Desmos, to model your data set. And then you're going to interpret your data.

All the while, we are hoping that you guys are having conversations that are sharing your own thinking and pushing the understanding of the other people who you're sitting with. So, to help those conversations we have on your tables, and I know you have these in Miss Grevious's classroom too, some group roles. So, I want you to please pause and to take a look at your own group role and to read the words to yourself about, What are the questions and contributions that I'm expected to make at my table. So I know these are familiar to you. They're not new. So, but I do want to give an opportunity, if there's any questions or anything you're unsure of for your role to help support your group today.

Okay, great. Then I'm going to pose the problem. The problem is this: You're going to be given a rectangular grid that is on centimeter paper. There are, as I've written here, 19 centimeters across the top, 25 centimeters along the side. What you're going to be asked to do is to figure out, How could I use this amount of grid paper to build a box with the largest volume? So, what I'm going to ask actually is for one student to help me pass out some paper. Don't all jump up at once. Thank you so much Stacy. Thank you. Okay.

And right now, you're not going to do any cutting, but you are going to just get one of these pieces of paper and you can draw onto it. You would cut squares. Sorry, I need to be more clear. You can only cut squares out of the side. You cannot cut like a rectangle. You cannot cut something that's a three by two. You need to cut an actual square out, being a three by three or four by four, and you'll cut those out of each side. No one's going to cut right now. I just want you to have the paper so you can look at it to help you visualize what you'll do. Yes, ma'am.

STUDENT: Are we making a top to cover the container?

AMY BURKE: That's such a great question. Thank you for asking. We are not making a lid. No lid. So it's an open-top box.

Okay, so I'm going to ask you individually right now, so this is not yet time to talk to a partner, but I want you to take a look at number one, and it asks you to make a conjecture about how to cut squares from the side of your rectangle so that you would build a box with the largest volume. Build an open-top box with the largest volume. Will you please take a moment on your own to think about it and to write into question one, what you think.