

JACOB DISSTON: You're good with expressions. So we have different ways of sorting expressions right?

STUDENT: Yes.

JACOB DISSTON: So now I want you to put your expressions away.

STUDENT: So that could be an unknown group, the  $y=2$ ?

JACOB DISSTON: For now yes, which I love. I love that we have an unknown group right here.

STUDENT: I don't know why some put it an answer. It looks like an answer from part of a problem, not a...

STUDENT: I think it's just an answer. I guess it could be an equation because you can't really solve it.

JACOB DISSTON: So I want you to put all the equations out.

STUDENT: What if you don't have any more paper.

JACOB DISSTON: I'll give you another piece of paper. We're going to spend about eight more minutes so I want you with these equations to sort them into different types of equations just like you did with expressions. You guys are moved onto what?

STUDENT: Multiplications.

JACOB DISSTON: Are you about to?

STUDENT: Multiplication, addition, properties...

STUDENT: No, we didn't know numbers. I mean just variables and then we separated into addition, multiplication and properties.

JACOB DISSTON: Okay, so we have properties, which you are calling properties. What is property?

STUDENT: Commutative property and associative property.

JACOB DISSTON: What is it?

STUDENT: To help group numbers.

JACOB DISSTON: Okay, help group numbers. What type of equations are these?

STUDENT: Those are addition.

JACOB DISSTON: Addition equation...

STUDENT: Addition and multiplication

JACOB DISSTON: What are these equations?

STUDENT: Those are multiplications.

JACOB DISSTON: Same question I asked you guys...and then there's this one.

STUDENT: Answer.

JACOB DISSTON: So, same question I asked you guys before, why do you think...because different groups sorted them in different ways. They didn't say "I've got addition equations and multiplication equations," you guys did. So I want to know why we think that's important. Why is that something important to pay attention to, addition equations versus multiplication equalities? What do you think Maya?

STUDENT: Because it is easy.

STUDENT: To know what operations could do or something like that.

JACOB DISSTON: Okay, knowing what operations could do. Let me ask this, if you were working on a test and the instructions have been torn off and you saw this equation on a test, what would you guess was being asked of you to do?

STUDENT: Find  $x$ .

JACOB DISSTON: Find  $x$ , okay. If you saw this on a test would it have the same instructions of top of it?

STUDENT: No.

JACOB DISSTON: So these in some ways you said were the same because they both deal with multiplications but in other ways, they are very different because you're being asked to do different things with these; you're being asked to make sense of them in different ways. You said this was a find  $x$  type of equation, this is not. How would you say what type of equation...?

STUDENT: Like group them...

STUDENT: (Inaudible)

JACOB DISSTON: How?

STUDENT: That's  $c$  and that's  $b$ .

JACOB DISSTON: So it's just variables; it stands for some pattern. (inaudible) Do you guys know what these letters stands for?

STUDENT: Length and width equals area.

JACOB DISSTON: That's right. So that's a totally different type of equation than this. When would this come up?

STUDENT: Squares...

JACOB DISSTON: Squares or...what we're trying to find is...area right? I guess in thinking about how these are similar and different I want you to think about...you know we could say...I think people up there said these were alike. I think (name inaudible), you did because they have the same type of equation; a number, a plus sign, the 2, the variable equal. I might say these are all together the same. Why might I say that these are all together the same?

STUDENT: It's find the variable.

JACOB DISSTON: These are all find the variable types. So that's what I want you to discuss. We're going to take about two more minutes.

STUDENT: It could be this one.

STUDENT: So these are all variables.

STUDENT: I think would be better (inaudible)

STUDENT: So it would be (inaudible)

STUDENT: Yeah.

JACOB DISSTON: Let me ask you to stop in about 30 seconds so finish up your last writing or discussion.