

MIA BULJAN: They were so excited about this idea of making these really long trains and then they would...the train would get to the edge of the desk and break off, and that required some yelling, and some excitement, and... So, you know, part of me is like, "That's your idea. No one else thought of that idea. Everyone thought of that idea. No one else thought of that idea. That was just your idea. So quietly go to your carpet and see what your idea is doing." But part of me is like, I can't get upset that they're excited about trying some things. So even though it was loud, um, I think they recognize that they're getting to do something, and that there's freedom in that, and there's intellectual, sort of curiosity in that. And they're just starting to scratch at that.

MIA BULJAN: How could you prove that to me? How do you know for sure?

MIA BULJAN: It's not natural necessarily for them to branch out and think on their own. And so, a lot of in the beginning around tools is looking at kids who are using them in interesting ways and sort of highlighting that.

MIA BULJAN: You counted it? Can you count it for me? So show me again how many is this one? Count for me.

MIA BULJAN: Handing them tools, there's always a little bit of a nightmare period of like, "Okay, we're doing that today. Great. That's not quite how those work but good." And they figure out soon enough but they will experiment very naturally with lots of different ways to use them.

MIA BULJAN: ...five, six, seven, eight, nine. So if you want to make it look just like this one Dallan, what else would you need?

STUDENT: One more.

MIA BULJAN: One more? Okay.

MIA BULJAN: They recognize the freedom. They recognize that they're making decisions and that they're having these ideas.

MIA BULJAN: What are you doing?

STUDENT: Making a stack.

MIA BULJAN: Making a stack?

MIA BULJAN: When it comes to introducing kids to new tools, um, for me the mathematical purpose is that kids make sense of it -- that they make sense of the tool itself. Very often when kids are given tools, they're told how to use them or they're told that they're for this activity. So we're doing this activity and they get a basket full of these tools, and we're doing this activity. And let me walk you through how you make an exchange to regroup using these base ten blocks. Um, and I find that it's more important for kids to make sense of the regrouping process on their own without me imposing that exchange idea. Very few kids actually invent that idea. I've never seen a kid invent the exchange idea. I have seen them take out a ten stick and put in a train of ten unifix cubes that can be broken. So they will exchange but they exchange tens for

breakable tens. They don't take ten ones and take out a ten stick, that's not really on their radar. That's a very, um, that's a very modeled example of what the regrouping standard algorithm is, like how we use it to do the standard algorithm. So in a lot of ways they are familiar when they've had tools in their hands but they haven't had to make sense of them on their own.

MIA BULJAN: How many cubes did you use to make that question mark?

STUDENT: Well, 1, 2, 3, 4, 5, 6, 7. That's seventy.

MIA BULJAN: Seventy?

STUDENT: 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84.

MIA BULJAN: I'm convinced, Philip. Nice counting. Thank you.

MIA BULJAN: You're going to ask Santa Claus for math? Alright, boys and girls, what I want you to do is leave everything just where it is because we have to go to recess. When we come back we are going to put some of these in our bag.

MIA BULJAN: So we started on the carpet because I wanted to talk to them in sort of, like a, um, a more intimate sort of way about how we are going to relate to each other during math. And I wanted to introduce this idea about tools -- it is a really big idea, um, at this grade level. The idea that we could have different tools for different things and that, um, the tools have different attributes.

MIA BULJAN: We're going to put some of those sticks in our bag.

STUDENT: Aww! Why? I want to finish.

MIA BULJAN: So, we can always do this again but right now we have to do some other stuff. So what we're going to do is...listen. I'll wait. I will wait. You're going to put this many of the ten sticks.

STUDENT: What?

MIA BULJAN: The ten sticks look like this -- they're the long sticks. So tell your hand how many is that. Everybody tell me what number is this.

STUDENTS: Forty.

MIA BULJAN: Can I ask you this? Am I going to count it like this: 10, 20, 30, 40?

STUDENT: No.

MIA BULJAN: Am I done?

STUDENTS: No.

MIA BULJAN: No. I actually need forty of these sticks. So how many are in my hand right now? Count them with me. 1, 2, 3, 4, 5.

STUDENTS: 1, 2, 3, 4, 5.

MIA BULJAN: Am I done or should I keep counting?

STUDENTS: Keep counting.

MIA BULJAN: Definitely keep counting. You're also going to get some of the units. You're going to need this many.

MIA BULJAN: I want them with their tool bags making decisions, um, good or bad about the tools they're choosing to use.

MIA BULJAN: Everybody, tell me how many you're going to get.

STUDENTS: Twenty-five.

MIA BULJAN: Excellent! Give me a thumbs up if you think you can quietly head back to your desk and count those out into a bag.

MIA BULJAN: Do you guys have enough?

STUDENT: Yeah.

MIA BULJAN: Here's what I need you to do. Look at the floor and make sure there are no pieces on the floor.