Empowering Students in Math
Prompts Promote Learning

AMY ZORZETTO: The prompt for me has been I've struggled with what to do. So I wanted to be open, but I also wanted to know that there was specific if students weren't sure about what learning to choose that there were options for them to be able to pull from, and sometimes I also need to know if they know something in particular. So that's why I will put that prompt.

STUDENT: Some prompts are harder than others, and sometimes I think I ask for help but most times I can just do it on my own.

STUDENT: Some math's still hard for me, like, a lot of math's still hard for me. But the math that I can do right now, that's the math I am practicing.

AMY ZORZETTO: Differentiated learning is based on student need and it's based on student actions. So whatever actions they've taken place in terms of their activities that they choose to participate in or in working alongside somebody else, or even through the reflection period where we uncover those misconceptions it drives what I'm gonna do later that day, it drives what I'm gonna do the next day, it drives what I'm gonna do the week after. I want you to think about an equation, and how you can finish that equation 'cause you're gonna put an expression on this side how you can describe this picture. You know there's 36. How could you maybe decompose part of it? So maybe circle some with your finger and show me and then we'll count what's in there.

[INAUDIBLE] Okay, just that one line there? Okay, so how many are in that one line?

STUDENT: Six.

AMY ZORZETTO: Six, okay so we've got that. We've only got that one line right there. I'm just gonna put that little line there so we know that, okay? What else? You have to have all of them. You want to circle something else?

STUDENT: Yeah, all of them.

AMY ZORZETTO: But you've already done that line. So can you circle some other ones and we'll decompose it into different parts okay? So how many do you have there?

STUDENT: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12.

AMY ZORZETTO: So you have 12. What operation would I put between those?
STUDENT: Adding?

AMY ZORZETTO: Addition yeah, so we've done this line, and this line, and this line so what do we need to do now? What do you want to do?

STUDENT: Circle the rest.

AMY ZORZETTO: You want to circle all of those? Okay, so how many are there?

STUDENT: 1, 2, 3, 4, 5, 6, 7--

AMY ZORZETTO: We explored at the beginning of the year what types of things. We actually made a chart that said in reading, and writing, and math here are some things that you could do that would be a good learning choice, and it was all student generated and it wasn't my thinking put up there, it was their thinking. And then I think that we've added to that list throughout the year and even though it may not be added to the paper they still think that they've grown in their thinking around what is a good learning choice.

STUDENT: 36?

AMY ZORZETTO: 36, so what do we call this when we add them in, the same number over and over again?

STUDENT: Doubling?

AMY ZORZETTO: Doubling would be if I stopped right there and only had two groups of six. So you're right, but I have six groups of six. Do you remember what that's called? So I'm gonna put it here so you'll remember. It's repeated?

STUDENT: Repeated addition.

AMY ZORZETTO: Repeated addition. Because there's so many entry points with the activities that they do and the purposeful materials that are put out that it naturally flows and so there are some times when it works and there are other times where I have to be very specific and very purposeful in what I'm doing with the student at that particular moment and the other times where I let them explore because that's where the misconceptions come out and therefore that's when I know where I have to work with the students.

STUDENT: I'm trying to figure out the answer to this array so that I can use the answer in my equation.

AMY ZORZETTO: Okay, so you want to keep going and then I'll just stay here and if you have any questions? I might have questions for you. You know me, right?
STUDENT: Yeah.

AMY ZORZETTO: So we have six here and you said you have six there. How does that help you decide what equation to write about then?

STUDENT: Because there's six up here and six down here. So then it could be six groups of six.

AMY ZORZETTO: Six groups of six, okay, so write that down so we don't--

STUDENT: And this is what I have here.

AMY ZORZETTO: And that's what you wrote. That's what that looks like?

STUDENT: And that's the answer.

AMY ZORZETTO: Mm-hmm, so how would you write that as an equation then?

STUDENT: Six groups of six equals 36.

AMY ZORZETTO: Okay, so why don't you write that down and then we'll just double check that and see if you agree with it okay? The prompt is always connected back to a curriculum expectation in some way. It may be open so that the students can enter at any level but also they can enter at a higher level too if that is where they're at. And so those prompts are purposely put out so that to get at a specific area of learning.

STUDENT: That's 20 and then this would all be 16. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13.

STUDENT: 14.

STUDENT: 14.

STUDENT: What?

STUDENT: No, wait. 2, 4, 6, 8, 10, 12, 14, 16, 18, 20 and then all these would go...2, 4, 6, 8, 10, 12, 14, 16. So then I have 20+16 and that would equal 36. You could just count it by groups of 2 and then it's still groups of 6 because 2, 4, 6. It's just smaller. That's the only difference.

AMY ZORZETTO: Okay, so if you were to take a group of six away from that what would happen? Just totally away? Would that equation be true?
STUDENT: No. It would be 30. 3 and a 0. So then this should be three groups of 10. This should be 3 groups of 10 and 6 groups of 5 which equals 30 because I know that 5x5=25 and then 6x5 would be 30. Here no matter where it is on the left or right side of the multiplication sign then it will still equal your answer.

AMY ZORZETTO: It's a little messy but that's good. Messy is good because the kids have opportunities to engage in the learning at their level but also with what they're interested in as well and as lots of things are happening it gives me the opportunity to be able to talk to the students individually which sometimes if I was teaching in a more traditional way I wouldn't have that opportunity. And so I'd be able to spend maybe even if it's just a couple of minutes I have a time to be able to focus on that student and talk to them, see if there's any misconceptions, see if the knowledge is there already and then I don't need to worry about that knowledge and building that knowledge with the student. I'm only there to help maybe consolidate that knowledge further along, and also to challenge that thinking as we go forward. But the way that the classroom works it helps me to be able to do that because students are engaged in various activities. It does mean that I have to understand the curriculum but it also does mean that I get to see lots of things happening at one time and I have to prioritise what it is that I'm going to focus on.