

CECILIO DIMAS: Tell us a little bit more about where you're at in your units of study and how this lesson that we just finished observing fits into your, um, your scope and sequence, or how you're outlining big ideas in you school year for this course.

ANTOINETTE VILLARIN: Okay, okay. So I'm, um, I'm new to Borel. This is my first year here. And, um, currently we're working on triangles in geometry and trigonometry and special right triangles. And since I started, I've noticed that this group, um, though they would be considered what they say are advanced learners, they, they really struggle with justification and proving their work. They're very eager to, like, solve a problem and want to move on to the next task without really sharing what they're doing, so it's something I've been working on since, I feel like, the first week when I noticed it with this group.

We talk constantly about, like, what it means to be a mathematician, getting the correct answer but also being able to communicate your thinking, being able to, um, justify how you got your work and share with somebody who's not a math student, because oftentimes when they would show work, it would be all over the place and I would tell them I understood it but somebody else didn't. So, justification has been something I've been really working on to make sure that they understand that getting the right answer is one part of math but also explaining it and making sure that they communicate that is like a whole other part that I really want to develop.

CECILIO DIMAS: So it sounds like you have been framing a lot of the discourse and -- and collaboration around math practice three, of student constructing an argument but the argument not just being showing your work or having an answer, but really being about the justification connected to the context of the story that they're, or the problem that they're engaging in.

ANTOINETTE VILLARIN: Yes, definitely. And a lot of times they'll tell me like, "I did show it, I did have my equation here," and I'm like, "I -- well, I don't understand where that number came from, and you want to make sure that you add labels so that it's clear for what we've been saying is a non-geometry student." So I'd say in the past month we've been really working on, like, justifying, and they've been saying, "Yes, Ms. Villarin, we want you to -- you want us to justify." So, I'm really pushing them and also teaching them to learn how to talk to each other about how they do that because they're just, they're students that just want to, like, move on, like, "Okay, Ms. Villarin, I'm done with this, what do I do next?"

So, teaching them to slow down and take turns, like, those are all things that I'm trying to work on. And I felt like this task, which is something that we maybe haven't been doing necessarily in the unit that we're working on, um, was a good one because it introduced coordinate geometry, which they've had some exposure with since they're taking algebra currently, but they also, um, don't know what midpoint is. I've never told them what midpoint is. So, I felt like it was a fun problem to actually see how they would approach it not really knowing even the vocabulary of what it meant.

CECILIO DIMAS: Can you tell us a little bit more about the rationale behind picking the Three Reads routine as a way to launch the problem and, um, the experience that students have had and that you've had with this class with using the Three Reads routine?

ANTOINETTE VILLARIN: Yeah, so I, um -- Oftentimes when the prompt is really long, and with this Whitebeard treasure it was a long prompt, um, this class is really motivated with questions that come up on their own. So with Three Reads, we've done it at least three times already this year. This would be the third time.

But the first time we did it, they were really excited because they were having to answer their own questions. And when I initially had done the Three Read with them, they had tons of questions. They probably had ten of them. And I said, "Okay, pick one that you want and start to explore it." And I feel like for, for this class, they're really motivated by answering their own questions. They have a lot of like "I wonders" and "I notices," so when I don't give them the prompt, I think it was exciting for them.

The second time, we did the same thing. I had them share with me all their math questions, which they were excited about, but then I honed in on one and I said, "Okay, I want everyone to solve this one particular problem and then when you're done you can start to look at some of the other ones," and they did get to that, which was, which was nice. This was the first time that we did it and, um, I wrote down the questions and I hope to get back to it again when I get to part two but I, um, I actually gave them a prompt that I wanted to. And I think in this case it was because there just wasn't enough information in the Three Read. So it was just a way to kind of access the problem. I wanted students that maybe, like, get overwhelmed by the text, um, or don't know where to start to at least have a starting point, so hearing it three times I think is really helpful. It's like a way of kind of anchoring the problem, um, so that once you get started, you can jump into it.

CECILIO DIMAS: Yeah, because it really was um -- I know that we were, when we've talked about the Three Reads routine before and earlier, earlier this week when we were, um, working with the students with the routine, there was a concern about time.

ANTOINETTE VILLARIN: Yeah.

CECILIO DIMAS: And so, um, I thought that it was really -- it had a nice flow, and I think that there were -- the students were, from what I observed, um, were able to really understand the context. And, um, and walking around, what were some of the observations that you made in their work, um, through the Three Reads process?

ANTOINETTE VILLARIN: Well, I was worried because I knew this prompt didn't have enough information, and I was waiting for them to say that. And I think [inaudible] had -- was like a perfect segue into noticing that they weren't -- that they were actually writing questions, like, "What are the dimensions of the fencing? What is the area between the two fences?" It seemed like area was a big thing that popped up, and I think that's just because it's something that we've been doing with triangles. Um, and then also, a lot of assumptions like assuming that the

dimensions of this shape. So I love that they were adding parameters to that because we have been talking in the past few days about questions that maybe aren't given to you in the prompt but that you have to assume. So I loved when [inaudible] said, "Well, assuming that they were 12 by 12 feet, how -- like what was the difference in the area?" I like that they're starting to bring in some things that they know are missing and are leading to further questions. Yeah.

CECILIO DIMAS: Was there anything that surprised you when you were looking at their work, or that you were really excited to see as they were engaging in the second and third read?

ANTOINETTE VILLARIN: The second and third read? I was excited to see, um, like, I think adding the conditions. Like seeing that they were connecting to things that they've already seen before, like area. Um, some of them had questions like, "What would be the angle?" because we've been looking at trigonometry and looking at the angle, so I love that they're starting to, like, pull these skills that they've been learning over the past couple of years and just kind of bringing it together to see how they might approach the problem.