

DEIDRE GREVIOUS: So how are you?

AMY BURKE: I'm good. Yeah.

DEIDRE GREVIOUS: Good. How do you think the lesson went?

AMY BURKE: I think that the students were really engaged with the mathematics. Not just with the pieces that are kind of easy to engage with, like building a box and coming up to share that in the class table, but I also saw them at the start of the period really thinking and building their own argument when they made their first conjecture. And then I, after conversations that I heard between pairs, I know that many of them shifted their thinking when they were asked to make a second conjecture. So I felt like that was successful from an, like a, engagement level around really turning their brains on.

When we transitioned into using Desmos, there was a lot of conversation around -- around, you know, what is the independent variable and the dependent variable, which is something that I think it's important for students to think about. I didn't see when I walked around the classroom that anyone chose anything other than cut size versus volume. I could be wrong, because I didn't get to see everyone, but I thought that might happen, and I didn't see anyone choosing length versus volume.

And then, there was a lot of conversation about scale and figuring out how to see the data. I went to many groups and looked at what was on their screen, and saw just, you know, the points in--

DEIDRE GREVIOUS: In the cluster.

AMY BURKE: ... a line. And so, sometimes with prompting from me, students were able to figure out, "Oh, we need to change the domain and the range." And sometimes it was simply showing the other side of the table what yours looks like versus theirs, and that conversation would happen.

So I think that their use of the technology and kind of the right questions were being asked of themselves around that. Vincent, up front, recognized from the table that there had been a mistake in calculating. And he ... I loved his reasoning, and I wished that I had found time to have it really shared with the class. But he was noting that ...

Vincent had a great discovery right at the start, when the table went up, that there was an error in the class data and his reasoning was wonderful. He didn't just recognize that something seemed off. It was in the 2-centimeter row up there, and he noted that the 19 centimeters for the width did not make sense. And he showed me on his centimeter paper. He said, "This is 19. If this is 2 and this is 2, then the remainder is 15."

DEIDRE GREVIOUS: Oh, right.

AMY BURKE: And I was like, "That is what ..." Like, "Wow, what a great argument." And he really wanted to tell the class. I made a decision right then not to stop the class to correct that. I

was thinking, "Oh, it'll come up. When they look at the graph, they'll recognize an outlier." But tables did not recognize that as an outlier that I witnessed. Did you see some tables?

DEIDRE GREVIOUS: Well, so that was ... I noticed that the same table, on one side of the table, they used the incorrect data and then the other side of the table used the correct data. And then they were looking at and comparing it. "Is it possible that the incorrect data is true?" Right? Like they were saying, "But it's got to be fitting the curve."

And so when they started to fit the curve, then they realized that it's not a possibility. So I think having the incorrect data right next to it was a great argument about what made it wrong, and which one was wrong.

AMY BURKE: Right. Right.

DEIDRE GREVIOUS: So the students were able to determine that for themselves. Yeah.

AMY BURKE: Right. That's great.

DEIDRE GREVIOUS: Yeah. That was great.

AMY BURKE: I knew that they had ... They told me, "We have it differently on ours," but I didn't get to hear all of that. So that's really cool to hear.

I also really liked, at this table and at that table, the groups were really ask ... They were calling me over to ask me more questions, because they were kind of working through what do the  $x$  intercepts really mean in this case. And so I'm going to call that a positive for the lesson, because I think that it's bringing up real mathematical questions.

DEIDRE GREVIOUS: So how did you push their thinking when they were struggling in that way?

AMY BURKE: Well, I was trying to ask students to really reframe what, what they understood, and then asking them to state again why something didn't make sense. And I thought that I actually did that with this table, but when I walked away, I could tell they were, felt like they didn't understand it any better than when I had walked over. Well, I thought ... Their question was ... They had graphed the data with a quadratic, and they had a negative intercept, and they had said to me, "This doesn't make sense. We can't have a negative 3." And I said, "Okay." So that was not a pushing their ... I mean, I thought I pushed their thinking by asking them to re-explain it to me, but I don't know. They just kind of still seemed like, "Wait, what?" after that. So I'm not sure--

DEIDRE GREVIOUS: They weren't sure about the reality versus the model. Yeah.

AMY BURKE: That was what then came out in the share-out at the end of the class, was they didn't know if they could trust a model, versus the actual data that they had compiled. I knew that that was part of their concern, so that's why I had sequenced their brief share-out right before Vincent's brief share-out, because I thought, "Hey, if we think about this question of, can we use a model versus real data, can we trust it?" And then I thought, "Oh, Vincent's then going

to come in and share, actually, our data was a little bit off, and by using the model, we are able to correct ..." So I feel like there were some missed opportunities due to the timing.

DEIDRE GREVIOUS: But also, what about the role of technology? Do you think that the technology was helping them or slowing them down?

AMY BURKE: Um hmm, right. Because something that ... I mean, we could have taken the piece out where they are actually inputting the technology. I could have provided them ... I could have quickly put that into Desmos and made the window and put it up on the screen, and then ask them the same questions.

DEIDRE GREVIOUS: But would that take away or add to their learning, do you think?

AMY BURKE: I think that would take away, though, because I think that those discussions of how do we see our data and ... You know, cause had I done that, I think they would've been quicker to find the model, or I would have just been typing it in. Right. And I don't ... I mean, I think that that would have taken away from their learning opportunities. Yeah.