Thinking Like a Mathematician Video Transcript

Constantina Burow:
What I want you to do, I would like you to read, and then I want you to talk to your neighbor, and then we're going to share out as a class, okay?

Student:
So, like, is there going to be, like, a definite answer?

Student:
Yeah, like, what's the R in other things, the R in impact?

Burow:
We've done a lot of work on, how do we actually talk to each other in a group about math?

Student:
An earthquake with a rating of seven is ten times more intense than one measuring six.

Burow:
I think it's a super-important part of the learning experience, especially mathematics, because it's difficult to explain to people problem solving and how you think through something.

Student:
It was through geometric sequence, where O was the minus one.

Burow:
Building that team practice is very, very important. The one thing that we do is we have group competencies. Part of the test is a group comp. They do the test together. There's four in a group. They can use the book, the notes. They're very difficult questions. They're mostly word problems. And they get graded together.

Student:
The intensity of an earthquake can be modeled by $Y = 10X-1$.

Burow:
Our whole purpose is to build that confidence in being in a group, and getting that test done in that time frame.

Student:
Y = one.

Student:
And what's B? Five, right?

Burow:
The other thing is, they don't know who's in their group until they walk in.

You guys will be a four. Four. You guys are a group. You guys are a group, okay?

And so you have to build a classroom environment that allows movement in the classroom and allows questioning.

Student:
I'm getting this, but I'm not getting this.

Burow:
All right, tell me what you're not getting.

Student:
I understand how to plug these in. But like those where you have to make the T chart...

Burow:
No, you don't. We just made the T table so that you could see, because we didn't know how to rewrite this yet as logs.

Student:
Oh.

Burow:
We're going to rewrite it as a log.

Student:
Okay.

Burow:
Okay?

I want to establish that it doesn't matter who's in this class -- you can work with everybody. You don't have to go to college. You're still going to work with people. And you have to produce something. So that's real world. And I always say this, even to new teachers. It can't be all about you. You already know how to do everything. At some point, you have to let them talk.

Student:
But there's, like, a K, but that's different, yeah.

Student:
That's a different... that's, like for parabolas.

Burow:
It's going to get loud.

Students:
Yeah.

Burow:
They have to figure it out, otherwise it's not theirs.

Student:
X is included?

Burow:
What's it say?

Student:
Well, like, they give us...

Student:
Well, no, because they didn't give us X, because...

Student:
But they give us another number with it.

Burow:
Now, let's do set notation. What is set notation? Look in your notes.

I count taking notes as writing. This is a really important skill, especially in a math class. Math writing is different than writing creatively. It's very concise. They need to be able to read their own notes and understand it. It's not about copying everything down that I do on the board. I want this notebook to go to

college with them, and them to reference it. That's how important I think a math notebook is. Especially in their junior and senior year.

Y = X squared. What kind of graph is that?

Student:
Parabola.

Burow:
A parabola, okay.

The never to late to learn is huge in math. If you don't get it now and you get it later, well, then, you've got it. It doesn't mean you can't go on. We all learn at different places.

It's included, and it goes?

Student:
Probably to infinity.

Burow:
Yep, there you go.