

TRACY SOLA: Let's think about what just happened. We were trying to decide what to do when it wasn't perfect. Right? Because when he built this, we found out that that didn't go quite all the way to the top. And so, some people thought they better put that on, so it made it to the top.

STUDENT: I took that white one off.

TRACY SOLA: You took it off? You thought it was too much?

STUDENT: Yes.

TRACY SOLA: Okay. But some people thought we better at least make it to the top.

STUDENT: Who did that?

TRACY SOLA: Do you think ... Well, I -- I don't know. I mean do you think that both ways have good reasons for doing it that way?

STUDENTS: Mm-hmm. (affirmative)

TRACY SOLA: You do?

STUDENT: And I know, that's why I know, because I put mine right here.

TRACY SOLA: Okay, but I -- I'm wondering, I think that the person who put nine, I think had a good reason for doing it, too. Yes, Salvador?

STUDENT: A blue thing is over there, behind you.

TRACY SOLA: Oh, thank you. Okay, we can get that for later. Okay, so we -- so when we're measuring, we need to think about what to do when something isn't exact.

STUDENTS: Mm-hmm.

TRACY SOLA: And if we have a good reason for adding another one, or not. And that's really your call. I think we could argue either way, right? And you just need to make a decision and then defend it. Okay, finally, I think the pan -- I saw the pan on nine, but I also saw it way over here, two people put it on 14.

STUDENT: I put 14.

TRACY SOLA: Okay. But who put nine? Who put nine for the pan?

STUDENTS: Uh ...

TRACY SOLA: You did, Jade?

STUDENT: I put the first one.

TRACY SOLA: So, which way did you measure the pan?

STUDENT: She did it on this side.

TRACY SOLA: You think you did it on that side?

STUDENTS: Wait, wait. We measured it -- wait.

STUDENT: She did it on this side.

TRACY SOLA: Ah. So, Jade did it on this side. And then the people who have 13 did it on this side?

STUDENTS: I did it inside.

TRACY SOLA: Inside? Inside of there. Oh, and you had 14? How did you get 14?

STUDENT: Because we did it at the bi-- the -- the large side.

TRACY SOLA: So that's really interesting. The people who measured ... so, first of all, some people measured this side.

STUDENT: Here.

TRACY SOLA: Some people measured this side, but inside.

STUDENT: I did.

TRACY SOLA: And some people measured this side, but outside, and they all got different measurements.

STUDENT: I got 13.

TRACY SOLA: So, where you measure makes a difference. Is everybody correct?

STUDENTS: Yes. Yeah.

TRACY SOLA: Yes they are. Because they all measured in slightly different ways. Well, I think that was really interesting to measure all those things.

TRACY SOLA: I was wondering what would happen when they got an object that you could measure, um, different dimensions of that object and that turned out to be an interesting thing that was a little bit dissonant for them. I -- it turns out that the tea box was, uh, four cubes in one dimension, and seven cubes in another dimension. And when, um, the one group went over and put it on the four poster, and the other group went over and started to write it on the seven poster, the boys who had measured it as four were trying to tell the girls who measured it as seven that it wasn't seven, and that needed to go on the four poster.

And -- and so that was a really interesting time to see them making sense of how -- how an object could have more than one dimension and -- and how it was okay for it really, to be both.

That -- that depending on which dimension you measured, it could be four or seven. And we saw that with the pan, we saw that with some other objects, too. I think, the pad.

Uh, the other really interesting thing that happened in that lesson was making sense of things that were not an exact amount of cubes high. I think, the blue cup was, uh, 11 and a little bit more high, and so some people had it on the 11 poster, and some people had it on the 12 poster. And uh, so it was -- it was interesting for students to think about, uh, what was the right thing to do with that.

And so, you know, some said, "Well, it didn't quite make it, so I needed to add another cube." And another ch-- student said something like, "Well, it's almost there, if we add another cube, it's going to be too much." And so, um, I purposely left that as unresolved, because it was making sense of a part, a remainder, and you know, that's something that we can start thinking about now, in 1st grade, but isn't really a standard until much later. So I just kind of left that as something to think about, saying, "You know, I don't care which way you go on this, but you just need to justify it, you need to give the reason why."