MICHELLE MAKINSON: So you've got your big chart paper that's going to display your work, you've got the cards that we're going to work with. Shh, respectful listening, please.

What you have right now are a set of green cards and a set of white cards. And there are actually three more sets of cards that we'll be doing at a later point, um, but this is what we're going to start with. And I'm going to give you some tape loops. Some people, you'll have access to tape loops, there might not be one on every single desk, but close to that. It's all going to work out. And they're not coming for us so we're okay. I really appreciate your focus and cooperation today. Um, Jack, will you add three points into the awesome bubble? So when we were talking about discussion, what do I always say is the most important thing, the answer or the reasons?

STUDENTS: The reasons.

MICHELLE MAKINSON: The reasons. So the reason is the bulk, the vast majority of what backs up your thinking. It's what makes what you're saying worthwhile. It makes it explainable to other people. So these purple papers that I'm giving you are two items that you need to actually be able to discuss with your partner the work that you're doing. Okay? And I'm going to explain every step so just bear with me as I get these materials out. Your task is to match each picture set with the corresponding description. Take turns with your partner to choose a picture card and the verbal description to match it. When you and your partner are in agreement with each other, then and only then may you put the card onto the chart. All right, Partner B completes a justification card. And you're like, "But we don't have that." But yes you do. How many of you are familiar with, um, *Willy Wonka And The Chocolate Factory*?

STUDENTS: Yes.

MICHELLE MAKINSON: So this is the golden ticket. So this is the justification card. That means this is where you write down after you've had the discussion, and you've reached an agreement that two cards match, you have to justify your answer. So what's going to be put on this?

STUDENTS: Reasons.

MICHELLE MAKINSON: Reasons. The cards being put next to each other in a row is your answer, but this in between those two cards is the link that makes them match. Does that make sense? So they're starter sentences for how you start the conversation, how you show agreement, how you show disagreement, how you restate what your partner said, and how you ask for more information if you're confused. Does that make sense?

STUDENT: Yeah.

MICHELLE MAKINSON: So if you don't know how to say it to your partner, this is the guide to help you.

STUDENT: Two out of (inaudible). Nope.

STUDENT: Read them all.

STUDENT: I don't want to do that.

STUDENT: I found one! I found one!

STUDENT: Give me that.

STUDENT: These match because two out of four is one half. This is one half, too. So it matches!

STUDENT: Oh! Okay, let's put it in here now.

STUDENT: Now, what do we do?

STUDENT: So...what part of the pair has four legs? It is one...oh, wait! Two fourths because two legs of course. So two out of four because two of the legs are open and two of the legs...

STUDENT: Or you could do one half.

STUDENT: Yes, or one half. Where's one half? Or this one. So it depends.

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

STUDENT: No, it's eight.

STUDENT: Eight.

STUDENT: Got that? Good. Okay.

STUDENT: Oh, there's two.

STUDENT: Two out of six. So...okay. Two out of five, two out of two...

STUDENT: I believe we figured out these two.

STUDENT: So what happens is since this girl has her legs folded and there's two girls, it's one out of two equal parts.

STUDENT: In a sense, what...since these four girls are doing something different, there are two out of four equal parts.

STUDENT: Because those two are sitting.

STUDENT: These two are matching because one out of the girls has her legs crossed, and this is one out of two equal parts.

STUDENT: You only think that...I'm pretty sure there's only one sixteen left.

MICHELLE MAKINSON: So you need to use the mat to match. One pair of cards at a time. Okay? So I don't...you're just putting them all out to look at them right now?

STUDENT: Yeah.

MICHELLE MAKINSON: Okay, so do that because that's not going to help you if they're piled up, right?

STUDENT: These are the matches.

MICHELLE MAKINSON: Well, that's not the process. The process is one pair at a time, you follow the discussion protocol, and then you do a justification card. And the justification cards are up there and you're going to start doing them in a row this way. Does that make sense?

STUDENT: Yeah.

STUDENT: Can you explain what we...

STUDENT: Yes. This is the lady and she has two arms out and two legs out. The other lady has one hand out so it's one out of four equal parts.

STUDENT: One out of two...

STUDENT: Girls have her legs folded.

STUDENT: Two girls have her legs folded. Uh, it is a justification card, which is pretty much making sure that, you know, that you're not just getting the answer, that you're writing down and showing your process that you got the answer.

STUDENT: One out of three equal parts is pretty (inaudible).

MICHELLE MAKINSON: Attention! Okay, I want to remind you that there's a process, a step-by-step discussion process. Make sure you're following that. The conversation is just on math. Okay? So now get back to work.

MICHELLE MAKINSON: What does this say?

STUDENT: (Inaudible)

MICHELLE MAKINSON: Okay, so how many t-shirts are black?

STUDENT: Two.

MICHELLE MAKINSON: Two. So two out of all the t-shirts are black?

STUDENT: Yup.

MICHELLE MAKINSON: So Denis, did you see how Carina was able to explain that?

STUDENT: Yes.

MICHELLE MAKINSON: Okay, so can you have more faith and work with her? So don't do other work...that's not how we do it, okay? It's not about you finding the answer. You're proposing that these match?

STUDENT: Yes.

MICHELLE MAKINSON: So explain to her why you think they match.

STUDENT: Because here we have a whole and here I counted two...1, 2, 3, 4, 5 because I (inaudible) and that counts as one and five of six equal parts. So I have a whole and five sixths. It actually doesn't make too much sense because of my horrible explaining.

MICHELLE MAKINSON: So are you disagreeing with yourself now? Do you think they match though?

STUDENT: I still do.

MICHELLE MAKINSON: You still do?

STUDENT: Yeah.

MICHELLE MAKINSON: I'm really proud of the mathematical work that I saw you guys do today.