MICHELLE MAKINSON: Mary baked a cake and shared it equally with her five friends. She cut the cake into six equal pieces. How much cake did she have for herself? Please draw a picture of how you would figure out this problem. You are to think and work silently. Give me a thumbs-up when you're ready to share your thinking. And remember we're not adding these drawings to, you know, an art museum. If you're already done and you could think of another way to represent it, go for it. Find another way. You've got one way...don't erase anything, just use a different space on your board.

Who thinks they have an answer to share? JT, you want to come up and show what you did?

STUDENT: So, um, if it's shaded it's for their friends, and there's five friends and she shared...and she cut the cake into six parts of the cake. So each friend gets one slice and she gets one slice because that's how many slices are left.

MICHELLE MAKINSON: How did you decide where to slice the cake?

STUDENT: Because she wants to share it equally.

MICHELLE MAKINSON: Oh, okay. So what's your final answer?

STUDENT: One sixth.

MICHELLE MAKINSON: Okay, that's how much Mary got? Okay. Does anybody have a different way? Whatever way you think is being different that shows your answer, and it could be a different answer. It's like, whatever your thinking is. Jack, you want to share yours?

STUDENT: I got one sixth, too. And I got mine is by having six circles in the handing amount until I, um...

MICHELLE MAKINSON: What were you handing out, exactly?

STUDENT: Pieces of cake.

MICHELLE MAKINSON: What kind of pieces of cake?

STUDENT: Um...

MICHELLE MAKINSON: Pieces of cake that are...?

STUDENT: Equal.

MICHELLE MAKINSON: Equal. Oh, okay! So you handed out six equal pieces of cake and the circle represents...?

STUDENT: Each friend.

MICHELLE MAKINSON: Each friend. Just the friends?

STUDENT: And Mary.

MICHELLE MAKINSON: And Mary. And they each got...?

STUDENT: One piece.

MICHELLE MAKINSON: One piece of...?

STUDENT: The cake.

MICHELLE MAKINSON: The cake. Okay. Thank you. Anybody have a different way of representing the answer or a different answer? Sean, you want to share yours?

STUDENT: When Mary baked the cake she wanted to share it with her friends, so she divided into six equal ways for each of her friends.

MICHELLE MAKINSON: Just her friends?

STUDENT: Well, there's not one for Mary.

MICHELLE MAKINSON: There's not one for Mary?

STUDENT: So...

MICHELLE MAKINSON: How many pieces do you have there?

STUDENT: Six.

MICHELLE MAKINSON: Six? How many friends does Mary have?

STUDENT: Five.

MICHELLE MAKINSON: So does Mary get a piece?

STUDENT: Oh, yeah!

MICHELLE MAKINSON: And how much does Mary get?

STUDENT: One.

MICHELLE MAKINSON: One what?

STUDENT: One half.

MICHELLE MAKINSON: One half?

STUDENT: One slice.

MICHELLE MAKINSON: One slice. And what number represents how much that is?

STUDENT: One sixth.

MICHELLE MAKINSON: One sixth. Can you explain why it's one sixth?

STUDENT: So if she wanted to share, um, five pieces of it with her friends, one will be left over.

MICHELLE MAKINSON: Okay, so the whole cake was how many pieces?

STUDENT: Six.

MICHELLE MAKINSON: Six. And she kept how many of those pieces for herself?

STUDENT: One.

MICHELLE MAKINSON: One. So the fraction is one sixth. Thank you, Sean.

STUDENT: Five pieces of cake are for Mary's friends. They're all equal and one cake...and one slice of cake is for Mary.

MICHELLE MAKINSON: Okay. And so what fraction does Mary get?

STUDENT: One sixth.

MICHELLE MAKINSON: And is that similar to what some other people have done?

STUDENT: Yes.

MICHELLE MAKINSON: What was the different part that you did?

STUDENT: I...

MICHELLE MAKINSON: Did you do something with labeling?

STUDENT: Yes.

MICHELLE MAKINSON: What did you label?

STUDENT: I labeled with, um, how many pieces are equal in the circle.

MICHELLE MAKINSON: And each one of those pieces is...?

STUDENT: One sixth.

MICHELLE MAKINSON: One sixth? So the amount of cake that's for Mary is one sixth. What's the amount of cake that's for her friends, total?

STUDENT: Total would be five sixths.

MICHELLE MAKINSON: Five sixths. Okay. Does anybody have something totally different than what we've already seen? Completely different. So what's different about your cake?

STUDENT: Uh...I didn't label it.

MICHELLE MAKINSON: It's a what?

STUDENT: I didn't label it.

MICHELLE MAKINSON: Well, okay. Is there a difference in terms of its shape?

STUDENT: It's a rectangle.

MICHELLE MAKINSON: Do cakes come in different shapes?

STUDENTS: Yes.

MICHELLE MAKINSON: Yeah. So tell us about your story.

STUDENT: So the shaded part is for Mary's friends since she cut it into six equal pieces, one for each of her friends. And the one that isn't shaded is for Mary.

MICHELLE MAKINSON: Nathan, you want to share yours?

STUDENT: So on this one you can see that I...

MICHELLE MAKINSON: Which part are you referring to?

STUDENT: The lower one.

MICHELLE MAKINSON: Okay.

STUDENT: The lower circle. So I thought since I made a big cake, I'd cut it into twelve pieces, and then her friends each get two, and she gets two. So it's two twelfths.

MICHELLE MAKINSON: How would those pieces be different if they got two twelfths versus one sixth?

STUDENT: It's just more pieces of a cake.

MICHELLE MAKINSON: It's more pieces but is there something different about a particular piece?

STUDENT: Yes, they're smaller pieces.

MICHELLE MAKINSON: Which pieces are smaller?

STUDENT: All of them.

MICHELLE MAKINSON: Which ones? The twelfths or the sixths?

STUDENT: The smallest.

MICHELLE MAKINSON: Which is?

STUDENT: Twelfths.

MICHELLE MAKINSON: Twelfths, okay. So your solution was to cut it up into even more pieces...

STUDENT: Yes.

MICHELLE MAKINSON: to tell Mary to do something different and then...but she just had twice as many pieces. And were all those pieces equal?

STUDENT: Yeah.

MICHELLE MAKINSON: And so ultimately, what's the relationship between these two fractions? Because this is what the problem asks for.

STUDENT: They're equivalent.

MICHELLE MAKINSON: They're equivalent and then Nathan just puts his own spin on it. Okay. So two twelfths is equivalent to one sixth. So are you still eating the same amount of cake? You're going to get the same sugar rush?

STUDENT: Yeah.

MICHELLE MAKINSON: Okay. Thank you, Nathan.