ROBIN EVERAGE: You need to be sitting somewhere around your paper. If I give you—oh, by the way, if you notice on your paper, it's big graph paper. Do you see that? And those square tiles will fit perfectly inside of each square, okay? When you guys are doing this, make it a real size of the square, okay? If I gave you the area of 12, whisper to your partner, how many blocks do you think you'll be using?

STUDENT: Twelve.

STUDENT: Twelve. I think—

ROBIN EVERAGE: If you have that number, go ahead and get that number out.

STUDENT: Okay, I get six, you get six. 1, 2, 3, 4, 5, 6. [inaudible]

ROBIN EVERAGE: Can you do me a favor? Can you—how many are you getting out?

STUDENT: Twelve.

ROBIN EVERAGE: So you only get 1 to 12 out. You're going to share this one. Once you have 12, your eyes are on me. You put them on the paper. That's fine.

STUDENT: 1, 2, 3, 4, 5, 6.

STUDENT: [inaudible]

ROBIN EVERAGE: If it's on the paper on the tile, either one is correct. Are we lining them up right now? All right. You guys have 12?

STUDENT: Yes.

STUDENT: Yes.

ROBIN EVERAGE: Yeah you guys have 12? Georgia?

STUDENT: Twelve.

STUDENT: Twelve.

ROBIN EVERAGE: The other Hannah and Chloe, do you guys have 12? All right. So on your paper and I'm going to ask for space reasons to start in one area, don't start in the middle of the paper, because you're going to have to work more than one thing on this paper. So start it from one, one area, I don't care where, you pick. But I would like for you with these 12 tiles, create an array for me that shows me the area of 12. Work together.

STUDENT: We've put it in like this, making this two, six to make it twelve.

ROBIN EVERAGE: Put it into the squares on the paper. Make sure you remember it's not in the middle of the paper, pick a side.

STUDENT: Right there. Like 3, 5, 6. Now we do another round on top of it.

STUDENT: Wait. But is it in the right spot?

STUDENT: No.

ROBIN EVERAGE: The shape that you created, and what would be the math problem you could write down, for this to find the area of what you built and why?

STUDENT: We could do 3 times 4, 4 times 4, 4 times 2—.

STUDENT: Why?

STUDENT: Because it's the perimeter. And the perimeter, like, if three—the perimeter—it can't be, like, four—like 3 times 3, 6, 4 times 4, 8, like, um, 8 times 6. We can't do that because it's not equal 12, which is our area. So we have to do 3 times 4.

STUDENT: Or we could do 4 times 3, because there's three on that and four on that, so we could do 4 times 3.

ROBIN EVERAGE: I want you to draw the shape that you just had on that paper. So you can do it—you can do it next to it, you can do it around it. But make sure it's on the lines. Go ahead and draw. You can pick someone to draw it or you all can draw it together.

STUDENT: 1, 2, 3. Now, we have to go down, 1, 2.

ROBIN EVERAGE: After you draw that, then I would like for you to write the math problem to find your area. What would we—

STUDENT: Yes, because there's this two right here and six like this.

STUDENT: 2, 4, 6.

STUDENT: [inaudible]

STUDENT: Twelve. Then we count it by six, and we count the number 12. Then the second time count it by six.

STUDENT: And when it by—And when it's by two by six times, it will equal 12 too.

STUDENT: Yeah, because 2, 4, 6, 8.

ROBIN EVERAGE: I really hope when you get your area, it's just not a number because you should have something else here with it. Where do you write that? Wherever you want, you write it. And then your area would be what?

STUDENT: Twelve.

ROBIN EVERAGE: Twelve?

STUDENT: Square meters.

ROBIN EVERAGE: Okay. Now, what I would like for you to do, here's your challenge. Figure out the perimeter. What do you think the perimeter is of that?

STUDENT: Because [inaudible] A equals 12 square units.

STUDENT: I have two questions.

ROBIN EVERAGE: Yes.

STUDENT: Um, so would it be inches or units? And do we write the lines in them?

ROBIN EVERAGE: You may write that area, do we do inches, do we do square units? What do we do?

STUDENT: Square units.

ROBIN EVERAGE: What does it say?

STUDENT: On area we do square units.

ROBIN EVERAGE: Okay. And then what do you think you're going to do for perimeter?

STUDENT: Square inches.

STUDENT: Square inches.

ROBIN EVERAGE: Square inches?

STUDENT: No, it's square—

ROBIN EVERAGE: Look at your perimeter part, that has the orange. Do you see anything square for perimeter? It's just inches. We don't do square inches, okay? So you need to write actually the math equation. How did you find 12? So write the actual, what do you say?

STUDENT: Like, um, we did 6 times 2.

ROBIN EVERAGE: So then you keep drawing. So you would write 6 times 2 equals 12 square units. And then you gotta show me how you found the perimeter. Also I need the math problem for that.

STUDENT: Okay.

ROBIN EVERAGE: Does that make sense?

STUDENT: Yeah.

ROBIN EVERAGE: Okay, good job, keep going. Show me exactly what you did.

STUDENT: 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14.

ROBIN EVERAGE: Okay, so what kind of a math problem did you write down? Show me that, how you got 14?

STUDENT: Addition.

ROBIN EVERAGE: Okay. So what kind of an addition sentence could you write to show me that?

STUDENT: 3 plus 3 plus 3.

STUDENT: We could do—

ROBIN EVERAGE: You tell me, where's three at? Where did you find three?

STUDENT: Here. Then we did three.

ROBIN EVERAGE: Okay. Then what did you find over here?

STUDENT: Three.

STUDENT: Four.

STUDENT: Well, three, three. But there's not three down there because we already filled in that one.

ROBIN EVERAGE: Why did you say four?

STUDENT: Because of this four—these squares are [inaudible].

ROBIN EVERAGE: Okay. So you can write—you already wrote three here, could you write four here? Do it so you don't forget. It doesn't have to be perfect. And then what do you guys have down here?

STUDENT: Three.

STUDENT: Three.

ROBIN EVERAGE: Write it. And what do you have over there, on the other side?

STUDENT: Four.

STUDENT: Four.

ROBIN EVERAGE: Okay. So then what addition sentence could you write?

STUDENT: 6 plus 8.

ROBIN EVERAGE: You keep changing numbers on me. You could, why—how—where did you get six from? Eight from?

STUDENT: You add the 3 and 3 together, which is 6 and then add the four.

ROBIN EVERAGE: You guys write what you think and get the perimeter.

STUDENT: We could do three, four times.

ROBIN EVERAGE: What do you think is your perimeter?

STUDENT: Seventeen.

ROBIN EVERAGE: How did you get 17? Show me.

STUDENT: Counting the sides.

ROBIN EVERAGE: Show me. Count while you do it, please.

STUDENT: 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16.

STUDENT: Sixteen. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16. Sixteen.

ROBIN EVERAGE: So what addition sentence could you—

STUDENT: Six.

ROBIN EVERAGE: Is that a six? So what addition sentence could you be writing to show me the perimeter?

STUDENT: Um, by like, um, 16.

ROBIN EVERAGE: Think about what you did.

STUDENT: 2 plus 6.

ROBIN EVERAGE: Two plus six? Well, how many do you see right here?

STUDENT: Two.

STUDENT: Two.

STUDENT: Two.

ROBIN EVERAGE: So write a two there. Okay, how many you see on this side?

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

ROBIN EVERAGE: How many?

STUDENT: Six.

ROBIN EVERAGE: We're doing just this side, Ayven. So 1, 2, 3, 4, 5, 6. So how many do you see down here?

STUDENT: Two.

STUDENT: Two.

ROBIN EVERAGE: What about the other side?

STUDENT: Six.

STUDENT: Six.

STUDENT: Six.

ROBIN EVERAGE: So what addition problem can you come up with using those numbers?

STUDENT: 2 plus 2.

ROBIN EVERAGE: I'll come back and check, you guys talk about it.

STUDENT: How about we do 2 plus 2 is 4, and 6 and 6 is 12 and um—

ROBIN EVERAGE: Perfect. I'll be right back.

STUDENT: Um, also plus six, and that's 6 plus 6.

STUDENT: So we can do like 2 plus 2 is 4, and 6 plus 6 is 12, and 12, um, and 12 plus 2 is 16.

STUDENT: So we're going to write—

STUDENT: 2 plus 2.

STUDENT: 2 plus—oh my gosh, why is it wet there? Plus six.

STUDENT: No, no, no, no, no. 2 plus 2 equals 4 and then 6 plus 6 equals 12 and then 12 plus 2 equals 16.