MELISSA NIX: So, let's see if you can apply that strategy to figuring out the area of Four-Wheeled Fun.

STUDENT: For what?

STUDENT: For the Four-Wheeled Fun.

STUDENT: Mm-hmm. [affirmative]

STUDENT: Because, does this say it's 5, and this is right up here? Like she did, it's …

STUDENT: So 5?

STUDENT: ... it's like 5 times 2*y*, which it, wouldn't that be 10*xy*?

STUDENT: 5*x*, times *y*, 2*y* plus 3? Like that?

STUDENT: Yeah. Yeah, then, then wouldn't that be, uh, where it's ... wouldn't that be since, like, it's 5 times 2 that's 10. And there's the *x* and *y*, wouldn't that be 10*xy*?

STUDENT: No, 5 times 2 is --

STUDENT: Plus 13*xy*.

STUDENT: Oh.

STUDENT: Because, here it is. So you do 6.5 times 2*y*, so then you get your ... That goes down here, because your 13*xy*. And then 6.5 times 3, so that gets you 19.5*x*.

STUDENT: Because we're writing it.

STUDENT: But we don't know what *y* is …

MELISSA NIX: Oh, kind of frustrating though, cause it's--

STUDENT: ... so, I don't know.

STUDENT: So weird?

STUDENT: So what about 6, 16?

MELISSA NIX: We can't right now.

STUDENT: [inaudible]

STUDENT: Or 15.

STUDENT: 15?

MELISSA NIX: We're close to being done with class my friend. That would be a better time.

STUDENT: Miss Nix?

MELISSA NIX: Yes.

STUDENT: Um …

STUDENT: Okay.

STUDENT: So how haven't we gotten her area? We don't really get how she got it, like …

MELISSA NIX: Okay.

STUDENT: What …

MELISSA NIX: So, what part? I see you've copied it down. What part do you, do you understand?

STUDENT: We understand the 1.5 times the 2 by plus 3 part, but--

MELISSA NIX: Okay. So can we write that out in a way that would be easier to look at? Okay. So you, what you're not sure about is ... which part are you not sure about?

STUDENT: Like the *x* and the *y*. I think that confuses us because--

STUDENT: Yeah. Since we don't know what *x* and *y* is.

STUDENT: No, like, we don't know how to place the--

STUDENT: Yeah, like replace them.

STUDENT: Oh.

STUDENT: Yeah.

MELISSA NIX: Gotcha. So, when we did the algebra tiles and we had the algebra tile that looked like an *x* …

STUDENT: Mm-hmm.

MELISSA NIX: ... and we multiplied it by a *y*, what shape did we end up with?

STUDENT: *Xy*?

MELISSA NIX: We ended up with that other shape that was an *xy*.

STUDENT: Mm-hmm.

MELISSA NIX: So you can multiply an *x* and a *y* together and you would end up with its own polynomial collection, called an *xy*.

STUDENT: Mm-hmm.

MELISSA NIX: This is its own term.

STUDENT: Okay.

MELISSA NIX: So if we thought of that, and said, "I'm going to multiply 1 and a half *x* times 2*y*," it would look something like ... There's 1*x* --

STUDENT: Mm-hmm.

STUDENT: Oh.

MELISSA NIX: ... and there's my half an *x*.

STUDENT: Mm-hmm.

MELISSA NIX: And there's a *y*, and there's a *y*, right? So this shape would look like what?

STUDENT: Another *x*?

MELISSA NIX: Go ahead and draw that for me. [crosstalk] And what would this look like?

STUDENT: That would look like, um, 2, one half?

MELISSA NIX: Half of one. So I normally would have drawn an *xy*, right?

STUDENT: Oh.

MELISSA NIX: But it's only half of one.

STUDENT: Mm-hmm.

MELISSA NIX: So if there was such thing as half an *xy* ... So what would you label those as?

STUDENT: That would be *xy*?

MELISSA NIX: Is it a full *xy*, Nicky, or has it …?

STUDENT: Uh, a half.

MELISSA NIX: It's only half of one, right? So it's half of this shape.

STUDENT: Mm-hmm.

MELISSA NIX: So I will label it as half of what?

STUDENT: *Xy*.

STUDENT: *Xy*.

MELISSA NIX: Half *xy*. And this one's what?

STUDENT: Half *xy* also.

STUDENT: It's half *xy*.

MELISSA NIX: So, if I were to smoosh them all together, what would I have?

STUDENT: 3?

MELISSA NIX: And what are those shapes called?

STUDENT: 3*xy*. *Y*?

MELISSA NIX: So let's go back to what she came up with.

STUDENT: 3*xy*'s plus 4.5*x*.

MELISSA NIX: So she came up with 3*xy*.

STUDENT: Mm-hmm.

MELISSA NIX: What did you come up with?

STUDENT: 3*xy*.

STUDENT: 3*xy*.

MELISSA NIX: Where are the 3?

STUDENT: Right there.

STUDENT: These. And then if you add these together--

STUDENT: They'll make a--

STUDENT: ... because they're half, they'd be gone?

MELISSA NIX: Do you see how it's okay to have an, a 1 and a half *x* …

STUDENT: Yeah.

MELISSA NIX: ... times 2*y*, and you would get how much?

STUDENT: 3*xy*.

STUDENT: 3*xy*.

MELISSA NIX: 3*xy*. 3*xy*. How did she get 1 and a half *x* times 3? Would you, could you draw a picture of that to see? One and a half *x*, so that's gonna look ... And now it's times three units. Three. So three little yellows.

STUDENT: Oh.

MELISSA NIX: Right?

STUDENT: 1 and half times 3?

MELISSA NIX: 1 and a half times 3.

STUDENT: So would I make, like really--

MELISSA NIX: So this is, like, one of those little yellow cubes--

STUDENT: Mm-hmm.

MELISSA NIX: Little yellow cubes, little yellow cubes. And so now if you're lining it up in this area here, what, what shape, when you multiply this shape and this shape, what shape do you get?

STUDENT: This and this shape together?

MELISSA NIX: Yeah, that's what ... This is one unit. So you would actually just get one of those units. We didn't play much with the one units. So one unit times this, is that same unit, and one more. And so, one and a half, one and a half. So one and a half, one and a half, and one and a half.

STUDENT: Oh! Okay.

STUDENT: Two is just like, each?

MELISSA NIX: You've got really far on your middle area, and then the last five minutes of class I want to show what you were thinking about this middle area, before we end for the day. Would you be willing to share a little bit what you're thinking about that middle area? Okay.