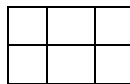


1 **VIDEO TRANSCRIPT**
2 **YOUNG MATHEMATICIANS AT WORK**
3 **Minilessons for Extending Multiplication and Division**
4 **4th grade**

5
6 T: We're going to start with some multiplication problems
7 *((writes 2 x 3 on board))* And here's what we're going to start with,
8 alright?
9 T: *((whispering))* I don't even need to ask, right? Lara?
10 Lara: 6
11 T: Good job. Alright. Here's 2 times 3 and here's the array for that.
12 Alright. Everyone see that? *((T puts up array of 2 x 3 on to*
13 *blackboard.))*



14 I'm going to write another problem on the board. *((writes 2 x 30))*
15 Okay, and before you raise your hand, just take a look at it. And I
16 want you to think about what the array might look like. *((A couple*
17 *of kids immediately raise their hands.))* You know, remember the
18 signal we used. Instead of raising our hand to give people some
19 time to think. Yeah, let's just put our thumb up. Gabriella?

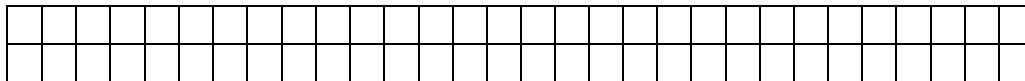
20 Gabriella: It'll be 60. And...

21 T: And what do you think the array is going to look like?

22 Gabriella: Long and, like, short.

23 *((T puts up array of 2 x 30 on to blackboard.))*

24



25

26 T: Okay, how did you get 60? Can you talk about that?

27 Gabriella: I knew 30 plus 30 equals 60. And so is 30 times 2. But the other
28 way that I kind of did it was that I know 2 times 3 equals 6. And if
29 you add a zero to the 3. You just add a zero to the three.

30 T: Usually when I add a zero to something though. For example 6. If
31 add a zero to that, I usually come out with a 6. So, 6 plus zero. I'm
32 adding a zero there. I'm coming out with 6. Are we just adding a
33 zero? What's happening here? What's happening here? Here's a
34 question I want you to talk about with your neighbor.

35

36 **Pair-Share**

37 *((Students begins to talk in groups of two or three. Camera picks up on some*
38 *groups talking.))*

39

40

41

42

43 Group 1

44 S1-g: When you times something by 10. Like 30 is a mutiple of 10. You
45 always. Let's say, we're looking at 30×2 . That's the same thing 30
46 plus 30. Now 3 plus 3 equals 6.

47
48 Group 2

49 S2-g: Yeah, well 30 plus 30 is 60 because 3 plus 3 is 6. You're just adding
50 10 to everything. So that's why it's 60. And you can also use
51 columns. Put 30 on top of 30. Add the zeros, add the threes.

52
53 Group 3 *((T is kneeling down with this group.))*

54 T: We have 10 two times threes, is that what you're saying? Thomas,
55 Taki, do you agree with that. So if I take that 2 times 3 array and I
56 matched it up against the long one, am I going to be able to fit 10 of
57 them in there?

58 Boys: Uh, huh, yeah. I think so.

59
60 **Whole group**

61 T: You know what, I actually listened in on Charlie, Thomas, and
62 Taki's conversation. I evesdropped a little bit because I'm nosey,
63 okay? I'm going to ask Charlie to represent the group. And talk
64 about what they come up with together.

65 Charles: Well, we figured out it was 10 two times threes.

66 T: Ten two times threes, okay.

67 Charlie: And that's where you get. And if you add, um, um. If you like make
68 two ten, two times three arrays, it will add up to 60.

69 T: So you're saying, if I take this two by three array, and I put it over
70 on top of the 2 by 30 array, I will actually be able to fit 10 of these
71 in here?

72 Charlie: Um, hmm.

73 T: What do you guys think? Shall we try it? Okay. I don't have ten of
74 these so what I'm going to do, I'm just going to draw a line, okay,
75 whenever we have 2 times 3, okay. And then we're going to see if
76 there's going to be 10 in here. Okay? Alright. *((whispering))* Can
77 you please count along with me. Okay, so here's the first one.
78 That's 1. And then.

79 *((Class counts as teacher marks the 2 x 3 arrays. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10.))*

80 T: There we go. So I can actually write 2 by 3 in each one of these?

81 Chris: Yeah

82 T: Yeah? You sound pretty convinced Chris.

83
84