



Choral Counting by 4s: Noticing Patterns to Build Multiplicative Reasoning

By Cindy Aossey (KCM) & Funda Gonulates (NKU)

Coral counting is a great way to build students' knowledge of skip counting sequences, and to build multiplicative reasoning. So, to think about using that coral counting routine, we're going to think about having a concrete representation of the quantity we're skip counting by, such as a four. We can represent that with the four Unifix cubes. We could also use something like these little dice tiles. We could use something like these dotted popsicle sticks. We could use printed dot cards. The point is to have a representation that shows the items inside of each group as we're skip counting. So as we skip count, we're going to lay out a tower and then simultaneously record that total over here. And so I lay out and the students tell me how many cubes there are. They see that it's four. We put out another tower. They tell me that's eight. Lay out another tower, that's 12. And I might pause and say how do you know that's 12? And they'll probably say something about you added four. So I might go ahead and annotate that; talk about how we added four as we lay out each new tower. We might talk about what do they think I'm going to do next, or what do they think the next total will be, and we lay that out. We see that we're adding four again and we have 16. And again, I'm going to pause and have them talk about what they see. How do they know that 16? How is it built? How is that 16 built? And they might talk about it being four groups of four. Might even see it as two groups of eight, building that multiplicative reasoning. We'll put out one more tower here and record that we have 20. Now, I know where some of this is going. So I've anticipated as a teacher that I want to switch color and also move to a new row in my recording. So we can lay out this white and have 24. And again, I might ask them about how is that 24 arranged? Seeing that as six





groups of four, but also seeing it as five groups of four that made 20, and one more group of four. So that six groups of four is five groups of four and one more group of four. We could continue, 28, 32, connecting what they see here with the cubes, seeing in this case that 36, but how many groups of four is that? And they see the nine groups of four, but even seeing that organized as five groups of four, and four more groups of four. One more group of four on this level, and we have 40. The other thing we can be doing is asking them to notice the patterns in the counting sequence and make predictions. So I might ask them to think about both going across, what patterns do they see, and going down, what patterns do they see? And I might have a student talk about how there's this pattern of adding 20, as we think about the number below. 12 to 32 is adding 20. So if they start noticing that relationship, and we can also push that thinking by asking them to make predictions. For example, I might ask them to predict what number they think is going to be below this 36. And they can use the patterns that they've seen. They might think about how, hey, when I went from this row to this row, I added 20. So maybe we're going to add 20 as we come down from the 36. Or maybe it's more about noticing a pattern in the digits, thinking about that six in the ones place and how the 10 is going up by two each time. Then we can, after we've heard those predictions, go ahead and get out our cubes and go ahead and continue our counting sequence, 40, one more group of four is 44, another group, 48, might pause; how do you feel about your prediction? One more group, 52, and add four more, and we see that we do in fact have 56 just as the kids predicted.

