

Leaders in Mathematical Thinking

Ruth Beatty - Uncovering Opportunities for Math Learning

>> It's more our learning that's evolved, actually. So this is Eganville and District Public School; that's the site that I've been working at the longest. So when we started there, we formed this team with some of the teachers, native and non-native teachers, and some community members to think about coming together, looking at cultural activities and how we can use those for teaching math. But we didn't want to impose math on the activities. We wanted to see what math was inherent in the activities, and what kind of emerged as the kids were working on it. So the first year was really funny, because things would happen. We'd introduce some things. We'd talk a little bit about it, and then one of the kids would have a question. And so the teacher would look at me and go, "What do we do now?" And I'd say, "I have absolutely no idea. So let's see what the kids do." And so it's really the students showing us where the math is inherent, and how they're seeing it in these activities. So because we document everything, we've been able as a team, through the three years to go through, and actually, we've got so much data now, that we're really seeing what kinds of math thinking are coming out; how the kids are seeing it, how they're talking about it, what are good next steps for them to think about? What are good questions that we can ask, or what are good questions that they ask each other? So the mathematical understanding is very robust. It's very strong. It's very -- they're developing really deep, conceptual understanding of some very complex math. But they're also appreciating that the math is inherent in these activities. And I think that's really important. So yeah, their math is phenomenal. Their math thinking is phenomenal. We do a lot of our activities around looming, which is a type of beading using a loom. And so there's horizontal work threads, and then vertical weft threads that you put the beads on, and then you leave. So what we do is, we take that sort of structure and put it on a two-dimensional template, so that there's columns and rows. And there's a whole bunch of math that comes out through there. So there's math in the pattern on the paper, and then there's math going from the paper to the three-dimensional representation. And there's multiplicative thinking, and proportional reasoning, and algebraic reasoning -- like, all of this just kind of bubbles up from this one activity.