How to Get the Most Out of Small-Group Math Conversations

In this article in *Teaching Children Mathematics*, Hala Ghousseini, Sarah Lord, and Aimee Cardon (University of Wisconsin/Madison) address the challenge of getting elementary students to have good math discussions when they're working in small groups. Some teacher frustrations they've encountered:

- "Because students do not listen to me when I give directions, I end up talking too much during group work, mainly explaining the directions over and over."
- "I spend my time settling disagreements because students don't know how to work with each other."
- "The strongest students just end up doing all the work."
- "My students always want me to help them right away if they think they're stuck — and they want to check with me all the time to see if they're doing it right. They just don't know how to be independent."

The key to productive small-group work, say Ghousseini, Lord, and Cardon, is how teachers launch the lesson before students begin working in groups:

- *Modeling good collaboration* — Many students are inexperienced at sharing their thinking in clear ways and negotiating solutions to problems with their peers, so it's helpful for the teacher to demonstrate a possible scenario. For example, a teacher preparing students to work in pairs skip-counting by fives and tens acts out the back-and-forth with a student and makes a deliberate error, saying 58 instead of 60. What should her partner do now? she asks the class, and guides them to a good coaching response: "Take another look at your skip-counting chart. So far, all the numbers we've said have ended in five or zero, and fifty-eight ends in an eight." Teaching a lesson on fractions, she might say, "When you throw out your idea, you don't want people to say, 'Oh, you're wrong! You did that wrong! You're not good at fractions.' You don't want people to feel that way about fractions."

- *Providing opportunities for guided mathematical talk* — During the lesson launch, the teacher can walk students through the kind of thinking they'll be asked to do in groups. For example, a teacher introducing a small-group activity on comparing fractions elicits several different ways of expressing equivalence — *How do you know that this drawing of 1/6 is the same as that one?* "Her requests for multiple explanations engaged students in different ways of articulating their thinking and reasoning," say Ghousseini, Lord, and Cardon. "This form of guided math talk during the lesson launch gives all students space to get into the habit of listening, responding to one another's ideas, and providing explanations for mathematical concepts. It allows students with different levels of mathematical proficiency to learn skills that can support equitable participation in small-group work." A teacher might also ask students to do a quick turn-and-talk about a specific question — for example, *How would you know how to circle multiples of three on a hundreds chart?*

- *Providing resources that support mathematical talk* — In the lesson launch, the teacher can draw students' attention to manipulatives, visuals, or props that support high-quality math talk in groups. For example, with the 5-10 skip-counting activity, the teacher might say, "I would make sure I had my skip-counting chart in front of me. If you don't need to use it, don't use it. It's there just in case you ever get stuck on a number." A teacher could also remind students of vocabulary they'd learned, perhaps referring to a word wall or an anchor chart.

Then, while students work in pairs or small groups, the teacher circulates, monitors, and intervenes as necessary, watching for insights or misconceptions to bring up when the class comes back together.

"Supporting Math Talk in Small Groups" by Hala Ghousseini, Sarah Lord, and Aimee Cardon in *Teaching Children Mathematics*, March 2017 (Vol. 23, #7, p. 422-428), available for purchase at http://bit.ly/2nfiy3e; the authors can be reached at ghousseini@wisc.edu, mtslord@gmail.com, and cardon@wisc.edu.