Getting Students Talking and Keeping Them Talking

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Session Goals

Establish a safe environment for taking risks and talking mathematically

Focus talk on mathematics.

Connect visual representations.

Have fun!
Duck!
Blanket Challenge
5 Principles of Productive Talk

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# 4 Goals Toward Productive Discussions

## Talk Moves That Help Individual Students Clarify and Share Their Own Thoughts

1. **Turn-and-talk** (also called *partner talk* or *think-pair-share*): You pose a question and ask students to turn and talk to their neighbor about it before discussing it with the whole class.

2. **Revoicing**: You ask a student to verify that your interpretation of a student’s turn is correct (this is also called “verify and clarify”). “So are you saying . . .” or “So are you thinking . . . .” They end with a questioning tone or with an explicit question like “is that what you mean?”

3. **“Say more . . .”**: “Can you give us an example?” “Can you say more about that?” “Tell us more about your thinking.” “Can you expand on that?” and “Can you give us an example?”

## Talk Moves That Help Students Orient to the Thinking of Others

1. **“Who can repeat?”** You ask students to restate, repeat, or reformulate what another student has said. “Who thinks they can repeat what Steven said?” “Who would like to restate that?” or “Who could put that into their own words?”

2. **Turn-and-talk**: “Tell us what your partner said.”

## Talk Moves That Help Students Deepen Their Reasoning

1. **Press for Reasoning**: You ask a student to explain his or her reasoning. Why do you think that? What is your evidence? How did you get that answer? What convinced you that was the right answer? Why did you think that strategy would work? Where in the text is there support for that claim? Can you prove that to us? What makes you think that? I’m not sure I understand. Can you explain it to me step-by-step?

2. **“Who can repeat?”** This move can deepen the focus on reasoning by all students. “That was important, but sort of complex. Who can put that into their own words?”

3. **Turn-and-talk**: You call for a turn-and-talk to deepen the focus on reasoning. “Did everyone follow that? Let’s do a quick turn-and-talk about her reasoning. See if you can explain it to your partner.”

## Talk Moves That Help Students Engage with the Reasoning of Others

1. **“What do you think about that?”** You ask students to add their own ideas to a classmate’s contribution. “What do you think about that?” “Can anyone add their own thinking to what she said?” “What else?” and “Is there more to say about that?”

2. **“Do you agree or disagree . . . and why?”**
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Revoicing

More specifically, this move:

✦ makes the student’s idea available to others
✦ gives time for them to hear it again
✦ allows to be heard in response to another student’s claim
✦ provides thinking space
✦ helps students track what is going on mathematically
More specifically, this move:

✦ allows for another hearing of the first response
✦ allows for time to process
✦ increases chances students understand what student response it
✦ supports student in acquiring language
Important Mathematical Connections between and within different types of representations

Principles to Actions (NCTM, 2014, p. 25)
(Adapted from Lesh, Post, & Behr, 1987)
Connections to Discourse

✦ ...visual representations also support discourse because diagrams or drawings leave a trace of student problem solving that can be displayed, critiqued, and discussed.

✦ The visuals assist students in following the reasoning of their classmates and in giving voice to their own explanation as they gesture to parts of their math drawings and other visual representations.

*Principles to Actions* (NCTM, 2014, p. 25)
Practicing Two Talk Moves

Form triads, each person taking either a white, pink, or blue.

Teacher = White
Student #1 = Pink
Students #2 = Blue
Maria rented 2 video games and 3 DVDs for a total of $23. Each video game cost $1.50 more to rent than each DVD. What was the cost of renting the DVDs?
When students learn to represent, discuss, and make connections among mathematical ideas in multiple forms, they demonstrate deeper mathematical understanding and enhance problem-solving abilities.
Mathematical discourse includes the purposeful exchange of ideas through classroom discussion, as well as through other forms of verbal, visual, and written communication. Discourse in the mathematics classroom gives students opportunities to share ideas and clarify understandings, construct convincing arguments regarding why and how things work, develop a language for expressing mathematical ideas, and learn to see things from other perspectives.

*Principles to Actions* (NCTM, 2014, p. 29)
Discussion

As a teacher using revoicing, what challenges did you have and what challenges might you anticipate when using this move in the classroom?

As students in a safe, supportive learning environment, in what ways would this help to support mathematical thinking?
Switch Roles

- Teacher = White
- Student #1 = Pink
- Students #2 = Blue
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Supporting Talk Moves: Reasoning & Adding On

Instructional Strategies:
Press for Reasoning, “Can you tell us why you agree or disagree?”
Reasoning

More specifically, this move:

✧ causes students to make explicit their reasoning by applying it to someone else’s

✧ pushes for deeper understanding by asking why student agrees or disagrees
The ratio of the length of Tom’s rope to the length of Jan’s rope is 3:1. The ratio of the length of Maxwell’s rope to the length of Jan’s rope was 4:1. If Tom, Maxwell, and Jan have 80 feet of rope altogether, how many feet of rope does Tom have?
Discussion

As teachers, using these moves, in what ways might discourse in your classroom change?

As students in a safe, supportive learning environment, in what ways would this help to support mathematical thinking?
Session Goals

Establish a safe environment for taking risks and talking mathematically, *(here and in anticipation of September)*

Focus talk on mathematics.

Take on a new challenge.

Have fun!
ONE WORD.
Thank You!

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