



SIX QUESTIONS TO GET STUDENTS TALKING IN MATH CLASS



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We want students talking during math class! The All Learners Network (ALN) founder, John Tapper likes to say “whoever is doing the talking is doing the learning!” I find that to be true over and over again in math classrooms. In classrooms where the students talk more, they learn more. There are so many questions you might ask students to get them to show them you value their voices and their thinking. The possibilities are endless which can be a little overwhelming. Despite there being so many options for questions, I often keep it simple and return to the same set of questions over and over again. These questions always get students talking while keeping the focus on important mathematics.

What do you notice?

This is the ultimate question for lowering the floor and giving more students access in math classrooms. Asking people what they notice is a question with many right answers and is an excellent way of giving everyone in the room an access point to engage with the problem, task or picture. It is a super broad question and a great way to open up a conversation. You can always ask a more specific question later but starting with what you notice is a great way to engage students and peak their interest.

What do you wonder?

After students have shared what they notice, this is the key follow up question. We often ask students lots of questions in math problems or tasks but it can be even more interesting when the students themselves come up with questions to go with a problem situation. Asking “What do you wonder?” often generates multiple questions that can be answered using the same picture or problem situation. This leads to an easy way to



differentiate a task, students can answer any of the questions generated or you can pick a question for them to start with and as they finish, they can choose another question to solve.

How do you know?

This is a great question to get students to defend their reasoning and critique the reasoning of others. It gets them talking and sharing their ideas and strategies. It's similar to asking students to show their work without the loaded direction part "Please show your work." I love getting students talking about their thinking, defending their thinking to others and comparing their ideas and strategies to their classmates.

Did anyone have a different strategy?

We want students to have a lot of strategies in their toolbox. Asking for other strategies allows students with different entry points and viewpoints to share their thinking. Teachers can then facilitate the connection between these strategies. Students can talk about how the strategies were the same or different and teachers can facilitate discussions to help students make connections between strategies.

Can you draw a picture or make a model to support your reasoning?

True conceptual understanding comes at the intersection of concrete, representational and abstract models. Sometimes, we will have some students whose first entry point into a problem is abstract, it does not mean they have conceptual understanding. We want students to have strong deep conceptual understanding and one way we can support all students developing this is to have them engage with multiple models.

Does it always work?

Ultimately, we want students to be able to generalize their strategies and models to work for a variety of problem situations and number sizes. Asking students questions such as "Does it always work?" is a friendly way to start getting them to generalize and see patterns in their work. It helps move their thinking beyond the current problem in front of them and illuminates how problems are related.

We want students talking more in math classrooms and one of the best ways to do that is to spend less time talking at students and more time asking them questions. Once a question is asked, allowing several students to talk, respond and interact with each other before the teacher jumps back in can help create a culture that is interactive and creative. We want students talking to each other and giving them the agency to drive the discussion. The more students talk, the more they learn. As teachers we want to ask a good question and then step to the side and allow students to think and respond deeply while we all listen and try to understand their thinking.



What Now? Scan the QR code and scroll to the bottom of the post for links to next steps



1. Read chapter 5, “What Students Have to Say,” in our free book, Teaching Math for All Learners.
2. Explore how one student increased his openness to mathematical discourse through repeated positive, joyful math moments.
3. Bring All Learners Network (ALN) into your school or district for embedded professional development.

