

Establishing Classroom Environments That Support Mathematical Discourse



Classroom environments that are rich in mathematical discourse are ones where all students have a voice. They learn to think critically, discuss the arguments of others, and collaborate to solve problems. Students build conceptual understanding and a growth mindset. Encouraging and supporting teachers to embrace new strategies is critical for success.

Here are seven effective strategies to start using now.

1

Help students work with and rely on one another.

Rules such as “Ask three before you ask me” can help establish classroom expectations by encouraging students to seek assistance from peers before defaulting to the teacher.

2

Allow students to work independently before sharing in small or large groups.

Students need time to gather their thoughts and identify what they know or do not know before they are exposed to the influence of other students.

3

Use questions and prompts to encourage students to listen to each other.

Ask students to clarify or restate peers’ comments using the language of mathematics. Teach students to respectfully critique the reasoning of their peers and disagree amicably.

4

Use questions strategically to engage students in mathematical discourse.

Teachers can engage students in mathematical discourse by posing questions that encourage discussion and debate and that require students to attend to particular aspects of the learning process and explain and justify their thinking.

5

Acknowledge the importance of mistakes in learning and understanding.

Remind students constantly that errors are expected and natural and that they can be a good thing because they lead to enhanced learning. Help students recognize what they have learned by analyzing their mistakes and identifying misunderstandings.

6

Use collaborative learning strategies to support students in preparation for whole class discussions.

When students work with peers or in small groups, they are able to take risks and build confidence on a small scale before they present solutions to the whole class.

7

Use a variety of pedagogical strategies to engage all students in whole class, teacher-led mathematics discussion.

To support mathematical discourse, teachers must always bear in mind which students volunteer most often, and they must also avoid always calling on the students with the correct answers first. Teachers can use a variety of methods to gather information from the whole class or call on students.

Source: Kersaint, G. (2015). Orchestrating mathematical discourse to enhance student learning. North Billerica, MA: Curriculum Associates. All rights reserved.

For more helpful tips and strategies for fostering mathematical discourse:

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