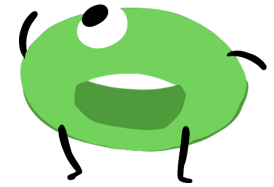


Problem Solving Strategy Discussions

Engaging students in discussions around problem solving activities is a great way to explore connections, expand perspectives, and have students check and challenge each other. Problem solving activities provide a great opportunity to facilitate classroom discussions around student work. Whether you do a problem of the day or a math writing prompt, it is important to plan your goals and outcomes for the discussion prior to posing the problem to students.

Strategies to Promote Discourse



Planning

What might students do

Before students begin working on the problem solving activity, think about what your students might do to solve the problem and what mathematics you would want to point out and discuss.

Ask yourself:

- What strategies would you want shared?
- How would you order the work that is being shared to maximize the learning?
- What questions would you ask?

Monitoring During Problem Solving

Asking facilitating questions

As students are working during problem solving time, walk around and ask students questions to facilitate their thinking. (See the [Problem Solving Facilitation Bookmark](#) for sample questions.) While you are monitoring, identify 2-4 pieces of student work that you would like to see students share as part of the discussion.

The purpose of sharing student work is to deepen student understanding, reinforce, challenge, and stretch student thinking. It is not just about checking student work, it is about analyzing student thinking and engaging students in a discussion focused on thinking.

It is important to provide the students whose work you select the opportunity to practice sharing their thinking with you prior to having them share it in front of the class.

Using Student Work to Promote Discussion

Creating a facilitating environment

Order the work you selected to share from least sophisticated to most sophisticated. Include some work that has misconceptions and/or errors in reasoning. Ask students questions that engage them in discussions around both correct and incorrect reasoning. It is important for the teacher to remain in the role of facilitator and ask students questions to help them construct knowledge.

Sharing the pictorial strategies is the easiest way to give all students access to the discussion. As you move from the more visual responses to the more abstract responses ask students to compare, evaluate, and explain the strategies.

Ask questions like:

- How are the strategies similar and how are they different?
- Do you agree or disagree with your classmate's strategy? Why or why not?
- What is your level of understanding of your classmate's strategy?
- What questions can you ask to clarify your own understanding of the strategy?
- How does your classmate's strategy compare to your strategy?
- Would you change any of your work? Why?
- What is your level of understanding of your classmate's strategy?
- What questions can you ask to clarify your own understanding of the strategy?
- How does your classmate's strategy compare to your strategy?
- Would you change any of your work? Why?

Resources

Check out these references

Chapin, S. H., O'Connor, M. C., & Anderson, N. C. (2009). *Classroom discussions: Using math talk to help students learn, grades K-6*. Sausalito, CA: Math Solutions.

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