



Growing your Mindset by Reviewing Student Work

Math Educator audience

Facilitator's Guide

Activity Background

The goal of this activity is to open up thinking about mathematics and develop and grow mathematical mindset by having participants solve a mathematical task, then review student work on the same task to make sense of students' understanding and solution strategies.

The directions for the activity are written for facilitators who will be leading mathematics educators in a group setting. Facilitators may adapt the activity to meet the needs of their audience.

Materials

1. Participants will need a blank copy of the task
 - a. 6th grade task (print page 1) *Building Blocks 6th grade task with student work*
 - b. 7th grade task *Photographs Task 7th*
 - c. 8th grade task *Marcys Dots Task 8th*
2. Small groups of participants (2-3) will need a packet of student work. Wait to hand out after participants have solved the task on their own and discussed strategies.
 - a. 6th grade student work (print pages 2-8) *Building Blocks 6th grade task with student work*
 - b. 7th grade student work *Photograph Task Student Work 7th*
 - c. 8th grade student work *Marcys Dots Student Work 8th*
3. The facilitator will need access to the slides that support this activity.
Growing Your Mindset by Reviewing Student Work (math educator audience)

Instructions

Step 1(Launch): Solve and discuss

Start by asking participants what it means to have a positive math mindset. Document ideas on a whiteboard or presentation slide to revisit later.

- At this point you may consider doing Activity 1 - Mindset Self-Assessment.

Participants engage in solving the math task on their own. Once everyone has had time to develop their own solution, participants share and discuss approaches. This sets the groundwork for understanding the goals and expectations of the task.

Explain that they will be reviewing examples of student work on this task with the intent of making sense of student thinking and developing their own mathematical understanding. *Emphasize that the intent is not to evaluate but understand the thinking.*

Step 2 (Explore): Review student work

Groups of 2-3 participants are given 5 examples of student solutions to the task. As they review the work, they should consider:

1) “What do you see?”

During this period the participants gather information from the work. They should focus on what they see in the work, avoiding judgements about the quality of what the student was doing. Do they notice different approaches or ways of thinking?

2) “From the student’s perspective, what is the student thinking about?”

During this period, the participant tries to make sense of what the student was doing. They should try to infer: What the student was thinking and why; what about the solution is correct; how the approach relates to other thinking about the task.

Step 3 (Summary): Reflect on the process

As a whole group, discuss the following questions. (You may select those that best apply to your group with the goal of developing mathematical mindsets.)

- How did you feel at first when you were given the examples of student work?
- What did you see in this work that was interesting or surprising? (Encourage participants to share examples.)
- What did you learn about how the students think and learn?
- How does the student work relate to your solution to the task? How is it similar? How is it different?
- How do you feel now that you have had the opportunity to make sense of the various ways of thinking about this task?
- How do you feel about your mathematical understanding or knowledge of this topic?
- What does a mathematics classroom look like that values and includes various student solutions?

Conclude the session by linking back to mindsets with the following question:

- How can reviewing student work develop your mathematical mindset? (The facilitator may want to link this conversation to big ideas shared by participants at the start of the session or Su (2020) such as Exploration, Struggle, and Love.)

Closing thought: “Believe that you and every person in your life can flourish in mathematics.” (Su, 2020, p. 210)