



Growing your Mindset by Reviewing Student Work

General Audience

Facilitator's Guide

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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, and 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 educators of various backgrounds in a group setting. Facilitators may adapt the activity to meet the needs of their audience.

Materials

1. Pairs of participants will need 40 color tiles
2. Participants will need a pencil or pen.
3. The facilitator will need access to the leader notes that support this activity (*Growing Towers Leader Notes*) and have the samples of student work
4. The facilitator will need access to the slides that support this activity. (*Growing Your Mindset by Reviewing Student Work (general audience)*)

Instructions

Step 1(Launch):

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.

NOTE: Facilitator may choose to look at both patterns in one session or analyze each pattern separately. Since the purpose is to engage with the student thinking that appears on the following pages, you may choose to only spend about 15 minutes building tower levels so that you can analyze the student work.

Participants review Pattern 1 tower task and discuss what they notice and wonder with someone close by. (use color tiles)

Looking at example student solutions in slideshow, participants are asked:

- How would this student build the next level? Or Level 10?

Step 2 (Explore):

Participants review Pattern 2 tower task and discuss what they notice and wonder with someone close by. (use color tiles)

Looking at example student solutions, participants are asked:

- How would this student build the next level? Or Level 10?

Step 3 (Summary):

Group discussion:

- Did you have any Ah-ha moments when looking at the task and/or the student work? Describe them.
- How did you feel when you were successful? Or when you weren't?
- There are virtues in mathematics. Two of those are exploration and struggle.
 - How do you explore mathematics?
 - Have you ever struggled with mathematics?
- How do you implement tasks so that students can share their thinking about mathematics?
- What does a mathematics classroom look like that values and includes various student solutions?
- Possible extension questions (extra slides):
 - What should a growing pattern task look like in middle school?
 - How might you generalize the pattern?

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)