

## Introduction Unit 1

### Lesson - Growth & Math Mindset Day 2

This lesson is intended to help students apply the growth and math mindsets they learned on Day 1 to work positively and productively in groups with their peers. Group work helps students practice justifying their ideas to others and helps them learn about different solving methods from others. It also cultivates a space that acknowledges that everyone in a group has something valuable to contribute.

Students will reflect on their experiences working in groups and share what they do and do not like about group work. All students will create a list of group work dos and don'ts that will become the norms of Saga Math Lab. Students will follow these norms when working together on the toothpick activity.

CCSS content goal(s): N/A

Standards for Mathematical Practice: MP1, MP5, and MP7

Student Friendly Objective:

- I can work in a group and share my ideas with others.
- I can learn from my classmates when they share different problem solving methods with me.
- I recognize that everyone has something valuable to contribute.

#### Materials Needed:

- Growth & Math Mindset Day 2 Slide Deck
- Toothpicks or cotton swabs, 1 set per group
- Toothpick activity answer sheet

Mathematical Mindsets Day 2– Teacher Guide	
3 min	<b>Welcome Students &amp; Objectives- Slides 1-3</b> <ol style="list-style-type: none"><li>1. Display <a href="#">Day 2 slidedeck</a>.</li><li>2. Review the objectives.</li></ol>

Mathematical Mindsets Day 2– Teacher Guide	
15-23 min	<p>Think - Pair- Share - Slides 4-7</p> <p><i>Purpose</i> Have students reflect on what they do and do not like about group work.</p> <p><i>Think (2-3 mins) - Slide 4</i> Have students silently reflect on the following two questions and write down their responses:</p> <ol style="list-style-type: none"> <li>1. Reflect on what you do NOT like people to say and do when you are working on math in a group.</li> <li>2. Reflect on what you DO like people to say and do when you are working on math in a group.</li> </ol> <p><i>Pair (3-5 mins) - Slide 5</i> Have students pair up with the person sitting next to them and each share their answers to the reflections questions from the opening task. Based on what they shared, students should create a list of the most important dos and don'ts of group work. Be sure to have them write down their ideas so that they can refer to them later.</p> <p><i>Whole group share (10-15 mins) - Slide 6-7</i> Once all pairs have had a chance to create their list of group work dos and don'ts have each pod share one idea from their list with the entire class. Once every pair has had a chance to share one do and one don't, additional ideas can be shared.</p> <p>As student pairs share, you can display the list of guidelines on slide 7. If students share an idea that is reflected on the existing list you can put a check next to it. New ideas you can add to the list by writing them on the board. Once everyone has agreed upon the list, let them know that this list will serve as the classroom guidelines for working in a group.</p> <p>Draw the conclusion that everyone knows what it feels like to work in a productive group, and everyone knows what it feels like to work in an unproductive group. We want to push ourselves to always be a positive group member in a productive group. You can tie these group work guidelines to the mindsets discussed in the previously lesson by asking the following:</p> <ul style="list-style-type: none"> <li>• How does working productively in a group relate to our mathematical mindsets?</li> <li>• Can we see any of our other mindsets in our group work norms?</li> </ul>
10-15 min	<p><b>Toothpick Activity - Slides 8-13</b></p> <p><i>Materials Needed:</i></p>

Mathematical Mindsets Day 2– Teacher Guide	
	<p>– Toothpicks or cotton swabs, 1 set per group</p> <p><i>Purpose</i> Allow students to practice working in a positive and productive group, following the group work guidelines.</p> <p><i>Before the activity</i> Before starting, acknowledge that some students like to share ideas right away and work together from the start while some like individual work time first to collect their thoughts. Both approaches are valid ways of working. Choose the approach that works best for the group.</p> <p><i>During the activity</i> Students should work in groups to complete the toothpick activity. As you observe students working, be sure to praise behaviors that are in line with the newly agreed upon group work guidelines and address behaviors that go against those guidelines.</p> <p>For groups who struggle to get started, you may do the first toothpick problem with the group as an example. The goal of this activity is to let students productively struggle and problem solve as a group – so refrain from giving hints or helping and instead encourage them to rely on each other.</p>
3-5 min	<p><b>Wrap-up - Slide 14</b></p> <p>With the remaining couple minutes of class, present the final slide and wrap up today's lesson by having students reflect on the following questions:</p> <ul style="list-style-type: none"> <li>- How does group work help you learn?</li> <li>- What did you enjoy most about working with your group today?</li> <li>- Which mindsets did you use today?</li> </ul> <p>With these reflection questions you want to summarize what students learned about productive group work and connect group work to the growth and math mindsets previously discussed.</p>