

The Tallest Spaghetti Tower Wins! - Collaboration

EXPLANATION:

Team challenges promote collaboration. Together, students must pool their ideas, using a design mindset to create a spaghetti tower. The tower must support a marshmallow, and the team that builds the tallest tower will win! With limited resources, but with the power of teamwork, who knows how tall the towers will get?

GRADE LEVELS: 4–6

STUDENT GROUPING: Small groups of 3–4 students

ACTIVITY LENGTH: 45–60 minutes

CASEL CORE COMPETENCY: *RELATIONSHIP SKILLS*

- Communicating effectively
- Practicing teamwork and collaborative problem-solving
- Showing leadership in groups
- You can learn more about the CASEL framework [here](#)

SCOPE OF TASK:

Working in a team requires planning, communication, and turn-taking. This activity will also require design skills, math concepts, and patience!

1. Arrange students into groups of 3–4, or allow students to self-select their groups.
2. Give each group the resources that they can use to complete the task, but don't let them touch the resources until the challenge commences.
3. Share the objectives of the challenge with the students:
 - The goal of the task is to design and build the tallest structure that will support a marshmallow.
 - Each team will be given resources and a set time period (teacher to determine).
 - Each team is encouraged to draw a plan of how the spaghetti tower will be built and to discuss building techniques as a group.
5. Before students begin the task, ask if there are any questions.
6. Start the timer to begin the task.
7. Walk around the groups, reminding students of the following guidelines:
 - The marshmallow must be on the top of the structure.
 - The structure must be free-standing.
 - Keep students informed about how much time remains.
8. When time is up, each group can present their spaghetti tower. The group can share their plan and explain how they built their tower.



9. Each tower is measured using a measuring tape. How measuring occurs can be negotiated with the students. Create a table on the board to record the heights of the spaghetti towers and determine a winning group!

At the end of the challenge, ask students questions to reflect on how they worked together.

Example questions include:

- Was there a leader on your team? Who was it, and who decided who the leader would be?
- Was anyone an expert?
- Did everyone assist?
- Did people have particular roles in the group? What were they?
- What could you have done better as a group to improve your tower height?
- What was the most important team skill your team used?

Photos of the towers can be taken, and students can write reflective reports to share with other classes or members of the school.

RESOURCES:

- For each team:
 - Paper and pen for developing plans
 - 20 sticks of dry spaghetti
 - One yard of string
 - One yard of masking tape
 - One marshmallow
 - A desk to build the structure on
- A measuring tape