GRADE 5

EXPLORE

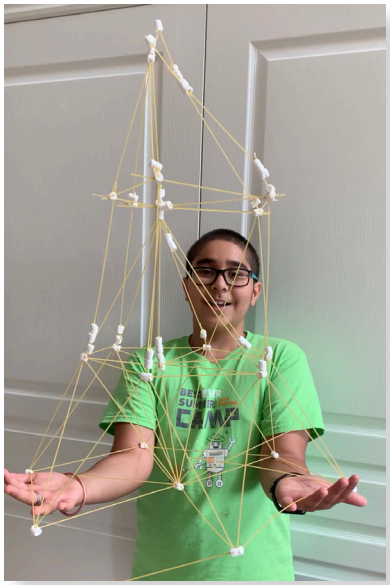
BUILDERS BONANZA

Lesson: Spaghetti and Marshmallow Towers

CURRICULUM REFERENCE: Forces Acting on Structures and Mechanisms

LESSON OBJECTIVE

Create a tall tower (over 90 cm/35 in) using dry spaghetti noodles and marshmallows to make the tallest tower possible and watch how forces such as gravity, structure, and stability work together or against each other.



THE SCIENCE BEHIND

When building your tower, your spaghetti noodles and marshmallows are always competing against gravity. The higher your tower goes, the greater its weight and the stronger effect that gravity will have. Engineers use good design to create large, long-lasting structures.

VIDEO: https://youtu.be/4g-SCz-msn8

FOLLOW-UP QUESTIONS

1. What different materials and construction techniques are used to build structures that may be subjected to forces from natural phenomena such as earthquakes?
2. In what ways are structures modified to allow them to stand up to forces from natural phenomena such as tornadoes and hurricanes?

LEARNING OUTCOMES

- Evaluate the impact of society and the environment on structures and mechanisms, taking different perspectives into account.
- Identify external forces acting on a structure (e.g., the weight of people and furniture in a house, wind blowing on a tent, the movement caused by a passing train), and describe their effects on the structure.

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MATERIALS (PER PERSON)

- Dry spaghetti noodles
- Large marshmallows

INSTRUCTIONS

1. By poking the dry spaghetti noodles through the marshmallows, create a tall (over 90 cm/30 in), sturdy, freestanding tower.

VIDEO: https://youtu.be/-7GbDzWjzJs