



RANDOM ACTS OF SCIENCENESS

Lesson: Marshmallow Poppers

CURRICULUM REFERENCE: Forces Acting on Structures and Mechanisms

LESSON OBJECTIVE

Create a forceful reaction through movement.

VIDEO: <https://youtu.be/hhM6l8iTg9E>

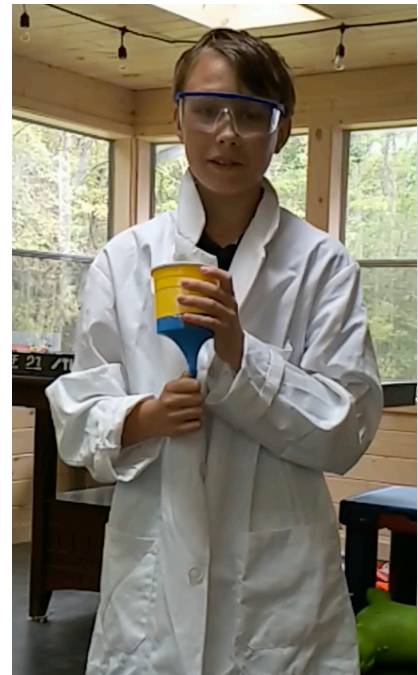
THE SCIENCE BEHIND

Elastic energy is created when we pull the balloon back and when we release it, energy stored in the balloon shoots the marshmallow out of the cup at surprising speeds.

VIDEO: https://youtu.be/yl1K3N4GL_A

FOLLOW-UP QUESTIONS

1. How can the results change when the variables change?
2. What forces are at play during the entire process?
3. What changes might you suggest to improve its efficiency, functionality, or performance?



LEARNING OUTCOMES

- Measure and compare, quantitatively and/or qualitatively, the force required to move a load.
- Identify external forces acting on a structure and describe their effects on the structure, using diagrams.



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MATERIALS (PER PERSON)

- Plastic cup
- Mini marshmallows
- Tape
- Balloons
- Pencil

INSTRUCTIONS

1. Cut off the bottom portion of a disposable cup.
2. Cut the bottom of the balloon off and tie a knot in the top part so the balloon is closed. Then stretch the cut bottom piece over the cut off part of the plastic cup.
3. Tape around the cut edge of the cup and balloon to secure them together.
4. Then add mini marshmallows in the cup and shoot towards a target.

VIDEO: <https://youtu.be/x5XXYQ4wJ0c>

