

MEETING 5

Activity #34 - Ready, Aim, Marshmallows! (40 minutes)**Objective:**

To learn about physics concepts, such as energy and motion, by making a catapult.

Materials:

- One-inch rubber band
- Marshmallows
- Electrical tape
- Three pencils
- Hole punch
- Plastic spoon
- Markers
- Thin shoe box
- Ruler
- Craft knife

Instructions:

1. Cut one end of the shoe box so that there's a one-inch piece at the bottom.
2. From that side, put a dot 1 inch from the top and 2.5 inches from the back wide side of the box.
3. Punch a hole through that dot big enough that a pencil can stick through.
4. Do steps 2 and 3 on the other wide end. Put a pencil through the holes. Put another hole where the other pencil will touch the bottom of the shoe box. Refer to the photo.
5. Have your young scientist tape the handle of the spoon to another pencil. Then, tape this pencil to the first pencil.
6. Put the rubber band through the bottom hole. Insert the last pencil into the rubber band loop underneath the shoe box so that the band doesn't escape. Loop the band over the second pencil.
7. Put marshmallows or other small objects on the spoon, and have the member gently pull it back. When the rubber band extends, it has a lot of potential energy, and when s/he lets go of the spoon, this becomes kinetic energy!

Discussion:

- What were the challenges you faced?
- What did you think would happen versus what actually happened?

Open-Ended Inquiry Questions:

What changes would you make to your catapult to make the marshmallows go even farther?