Energy Lesson Plan
Grade Level: 2nd Grade
Title of Lesson: Motion Energy: Marshmallow Shooters
Unit Title: Energy. Pushes and Pulls.

Performance Standard(s) Covered:
-S2P2a - Identify all sources of light energy, heat energy and energy of motion.
-S2P2b - Describe how light, heat, and motion energy are used.

Essential Question:

-What makes things move?
-How does speed affect the motion of an object?

Objective:

To teach students that nothing moves without force and that everything can be moved if the force is strong enough. The way to put an object in motion is by pushing it or pulling it. Lastly, moving objects move in directions and cover distances.

Key Words and Terms: force, direction, motion, position, speed, push, pull, distance

Learning Activity

Abstract: Using cups and balloons to create push-pull devices to help students understand objects in motion.

Materials Needed:

1. plastic cups – one per student
2. balloons – one per student
3. 1 quart zip-lock bags – one per student
4. mini marshmallows – use discretion
5. scissors

Procedure:

Preparation:

- Cut cup bottoms off.
- Cut the tips of the balloons off and tie off the mouth piece end of balloon.
- Place cut cup, balloon, and marshmallows in to each zip-lock bag.

In-class instructions:

If you have not precut anything:

1. Have students cut the bottoms of their cups.
2. Have them next cut the tips off of their balloons.
3. Help them to tie off the end of their balloons.
4. Instruct them to stretch their balloons and put them over the rim of the cup.

   Now that you have made your popper…

5. Allow students to shoot their balloons – this went well in the hall way.
6. After they have had a chance to see how they work and to eat a few marshmallows…
7. Ask them questions about what happened and why the popper works.
    a. What are you doing to the balloon?
    b. What is the balloon doing the marshmallow?
    c. What happens when you pull the balloon harder?
    d. What happens when you softly pull the balloon?
    e. What kind of energy is being used?
    f. Where is the energy originating from?
8. Once they have an understanding of the material have them pack their finished poppers back in to their zip-lock bags to take home with the rest of their marshmallows.

Safety Concerns: Depending on how long you have to do the lesson and if you have enough safety scissors you may need to pre-cut cups and balloons for the students.

Notes and Tips: I used Styrofoam cups to make my poppers (they were being recycled from a previous lesson) and they were a little unstable. We had to carefully cut out the center of the base of the cup in order for it to maintain integrity with the balloon squeezing it. The problem with plastic cups is that once they are cut they can have sharp edges and the harder the plastic the more difficult it is to cut and the edges are that much more shape. Here I say take in to consideration what kind of students you have and what kind of time you have. I also gave my students a large hand full of marshmallows which was helpful as the ones that end up on the floor go uneaten. Having a good bit of them allows them to eat some as well. It might also be helpful to have them put the poppers into their bags before you have Q&A with them about motion energy.

References:

- http://www.cometogetherkids.com/2011/09/mini-marshmallow-shooters-or-pom-pom.html