

**Project FOCUS
Best Lessons
FIFTH GRADE**

Title of Lesson: Static Electricity

Theme: Physical Science

Unit Number: **Unit Title:** electricity and Magnetism

Performance Standard(s) Covered (enter codes):

S5P3

Enduring Standards (objectives of activity):

Habits of Mind

- Asks questions
- Uses numbers to quantify
- Works in a group
- Uses tools to measure and view
- Looks at how parts of things are needed
- Describes and compares using physical attributes
- Observes using senses
- Draws and describes observations

Content (key terms and topics covered):

Electricity and magnetism: Static electricity

Learning Activity (Description in Steps)

Abstract (limit 100 characters): In this lesson, I demonstrated static electricity to Tobias with two different mini experiments.

Details: The following experiments were some fun and exciting ways to demonstrate static electricity. With each experiment, I would explain to Tobias what was occurring: the movement of electrons causing an attraction between the different charges on different items in the experiment. I also implemented Tobias' speaking device for maximum involvement and participation.

Mini experiment 1: Repeling Cereal

1- Tie a piece of long, light weight string to a cheerio. (I had already done this step for Tobias with sewing thread)

2-Rub a balloon in your hair (Tobias thought this was very funny)

3- Tie the string to a table or something that allows it to hang without touching anything. Then slowly bring the charged balloon close to the hanging cereal. Hold it still until the cereal jumps away by itself.

4-Describe what happened. Tobias answered my questions about static electricity and the repeling cereal by communicating to me with his speaking device.

5-Wait until both of the objects become neutral and repeat mini experiment.

Mini experiment 2: Bending Water

1- Charge the balloon by rubbing the balloon with your hair on your head.

- 2- Turn on the faucet so that the water runs out in a small, steady stream, about 1/8 inch thick.
- 3- Slowly bring the comb near the water and watch the water "bend"
- 4- I moved Tobias closer to the sink to see the stream of water and watch what happens as you move the charged balloon toward the neutral water.
- 5- Use speaking device to interact with Tobias and explain what is happening with the water.
- 6- Repeat experiment for reinforcement
- 7- This experiment can also be done using a comb instead of the balloon.

Materials Needed (Type and Quantity):

- Balloons-- for these two mini experiments I only needed two balloons
- Cereal-- any cereal with a hole in the center will work just fine. You only need a small hand full of cereal.
- String-- any kind of string. I used sewing thread and it worked well
- Tape-- small piece to tape the string to the end of the table
- Sink and water faucet.- only need one

Notes and Tips (suggested changes, alternative methods, cautions):

Because I only performed these mini experiments with one other student there are not many suggested changes I can make. If I were doing these experiments with groups of students I would suggest to have the string already tied to one of the Cheerios. This is a tedious task that could frustrate and trouble young students while also taking up experiment time. This lesson could be used only to demonstrate static electricity, or students could be paried into groups and perform the mini experiments themselves. As long as you are excited about the lesson then they will be too!

Sources/References:

- 1) <http://www.sciencemadesimple.com/static.html>
- 2)
- 3)