

Electrical Encounters (3rd-5th grades) Post-Visit Activities

We hope that you enjoyed your visit to the Children's Science Explorium!

To help reinforce the concepts covered during today's field trip, we have prepared the following wrap-up activities for you to incorporate into the classroom.

Vocabulary List and Student Definitions (elementary level)

- **Energy:** the ability or power to do work or make an effort
- **Electricity:** a form of energy, caused by the movement of free electrons
- **Potential Energy:** stored energy
- **Kinetic Energy:** moving energy
- **Static Electricity:** the building up of an electric charge (energy) that is unable to move until an object is brought into its electric field
- **Current Electricity:** electric charges (energy) in motion, or streams of moving electrons
- **Conductor:** an object or material that allows electricity or heat to pass through it
- **Insulator:** an object or material that prevents electricity or heat to pass through it

Make Your Own Electricity

1. During their visit, students observed fluorescent bulb lighting up by the static electricity of the Tesla coil. By using static electricity from their own bodies, students can cause a small fluorescent lamp bulb to light up.
 - a. Each student (or pair of students) will need a plastic comb and a small fluorescent bulb. This will need to be done in a room with low humidity.
 - b. The student will rub a comb through his or her hair at least 30 times. The friction between the comb and the hair will cause electrons to "jump" from their hair to the comb.
 - c. The charged comb will discharge into the light bulb causing the bulb to emit small pulses of light (recommended in a darkened room).
2. Review what has happened:
 - a. The friction between the comb and the hair causes a build up of electrons on the comb. When the comb comes into contact with the bulb, the electrons "jump" from the comb onto the bulb.
3. Visit www.fplforkids.com
 - a. Click on any of the links for further exploration of electricity.
 - b. Go to the Teacher Feature link
 - a. Download the *Electric Energy* page (page 3) and try the "Charge up Your Cheerios" activity.
 - i. Each student (or pair of students) will need:
 - 2 Cheerios
 - 1 wire coat hanger
 - Thread/yarn
 - Plastic comb or pen
 - Small piece of wool or felt

- ii. Bend the coat hanger so it makes a stand. Bend the top hook so it forms a 90 degree angle.
- iii. Tie each end of the thread to a Cheerio and wrap it around the coat hanger hook so that the Cheerios hang freely from the hook (like a tire swing from a tree branch). Make sure the Cheerios are not touching the table and that they are hanging at equal lengths.
- vi. Rub the comb (or pen) through the wool (or felt) and then touch the comb to the cheerios. What happens?