

Name: _____ Class: _____ Date: _____

Current or Static Electricity

Learner Outcomes:

- Distinguish between static and current electricity, and identify example evidence of each.

Key Terms:

Electrical energy

Neutral

Charge induction

Static electricity

Charge separation

Electrical discharge

Protons

Attract

Electrons

Repel

Background Information: Everything is made of atoms. An atom has a nucleus containing protons and neutrons. Since protons are positive and neutrons have no charge, the nucleus is positive. Negatively charged electrons, orbit around the nucleus. Usually, there are an equal number of protons and electrons making the atoms stable. When two different objects rub together, electrons are transferred from one object to the other, resulting in a charge induction. For example, when you rub your hair with a balloon, electrons are transferred from your hair to the balloon, giving the balloon a negative charge. If you bring the balloon close to a positively charged or a neutral object, it will attract and stick to it. Sometimes the buildup of electrical charge on an object can become so great that the electrons suddenly "jump" to a neutral or positively charged object in an electrical discharge. This might give you a little shock, like touching someone after you've dragged your feet on the carpet, or it might create a big shock, like lightning!

Research Question: How do charged and neutral objects interact with one another?

This investigation / activity has been adapted from:

Mah K, Martha J, McClelland L, et al. *Science in Action 9*. Toronto, ON: Addison Wesley.

Hypothesis:

Materials:

2 vinyl strips

2 acetate strips

Wool

Fur

Cotton

Tape

2 balloons

Tape

Ring stand

This investigation / activity has been adapted from:

Mah K, Martha J, McClelland L, et al. *Science in Action 9*. Toronto, ON: Addison Wesley.