



RESPECT Electricity

Electricity enables us to do many things that make our lives better, more convenient and fun. But it also has the capability to seriously injure or even kill us. In this lesson, students will learn how stay safe around electricity and its many applications.

Best for kindergarten through third grade.

OBJECTIVES

- Understand electricity can be helpful, but also harmful
- Understand safe and proper ways to use electricity
- Identify and distinguish the difference between insulators and conductors
- Identify indoor and outdoor electrical hazards
- Understand proper course of action to take in the event of an electrical hazard or injury

METHODS

Specific methods used will vary depending on age group and setting and may include:

- **PowerTOWN Electrical Safety Model demonstration—** This 8' tabletop model simulates outdoor electrical hazards such as contacting overhead lines with a kite, ladder and tree, contact with fallen power lines and contact with substation and padmount transformers. A working transformer produces a 10,000 volt, 23 milliamp current, emitting dramatic arcs when contact is made.
- **Is it electric?—**Students will be asked to identify and/or distinguish items that do or do not use electricity.
- **Safe or unsafe?—**Students will be shown a series of images and asked to identify whether the electric application or situation is safe or unsafe.
- **Energy Ball—**It looks like an ordinary ping pong ball, but when both metal connectors are touched, the ball lights up and makes noise. It's a simple and fun way to demonstrate the concepts of circuits, conductors and insulators.
- **Van de Graaff Generator—**Always a crowd pleaser, a variety of experiments can be used with this hair-raising electrostatic generator to demonstrate electric fields and fundamentals of electricity.
- **Hazard Hunt—**Students take a virtual tour to spot the electrical dangers can that lurk inside their homes.

CONTENT STANDARDS ADDRESSED

South Dakota

- 4.P.3.1. Students are able to identify materials as being conductors or insulators of electricity.

Minnesota

- 1.1.3.2.1 Know that tools are simple objects that help humans do science and engineering.
- 1.1.3.1.5 Describe how the parts of a system, when put together, can do things that are not possible when the parts are separated.
- 4.2.3.2.3 Demonstrate how the flow of electricity produces heat, light and sound.