

Electrical activity card



Grades 4–6

This electrical safety activity card is intended to be used along with our age-appropriate booklets, teacher's guides and other resources located at e-smartonline.net/xcelenergy.

Safety quiz



Test your students' electrical safety IQ. Download and print our age-appropriate safety test online at e-smartonline.net/xcelenergy. It quizzes students on safety issues around lightning, outlets, appliances, power lines and more. Discuss and compare their responses to the correct answers. Then, learn more about these topics by ordering our booklets, reading them with your class and performing the activities.

Fun Fact

A bolt of lightning can measure up to three million (3,000,000) volts and lasts less than one second. It has enough electricity to power 200,000 homes.

Vocabulary

Put the following words on the board and discuss what they mean. Go further with your class by discovering more about these topics online at e-smartonline.net/xcelenergy.

- Electricity
- Circuit
- Conductor
- Insulation
- Generation
- Watt
- Ground Fault Circuit Interrupters (GFCI),
- Transformer
- Shock

Joke

Q: Why did the foolish gardener plant a light bulb in the ground?

A: He thought he would grow a power plant.

Experiment

You've seen pictures or videos of powerful electromagnets at junkyards. When the electricity is turned on, the electromagnet picks up metal. Then, when the electricity is turned off, the metal drops to the ground. You can make a small version of an electromagnet in the classroom. Please make sure an adult is supervising this experiment.



MATERIALS

- One 1.5 volt dry battery
- One large nail
- 36 inches of thin insulated copper wire
- Wire cutter

DIRECTIONS

1. Wrap the wire around the nail, starting about a half inch from the top.
2. Wind the wire, without overlapping, to a half inch from the bottom. Leave 6 to 12 inches of unwound wire at each end.

3. Have the teacher strip 1 inch of insulation from each end of the wire.
4. Connect the bare ends of the wire to the battery. When the current is passing through the coil, the nail will be turned into an electromagnet that can pick up paper clips or other small metal objects.
5. Disconnect one of the wires from the battery and see how the nail no longer acts as a magnet.

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