

PRACTICING ENERGY SAFETY

Are your students safety savvy? Examine some of the best ways to steer clear of gas and electricity dangers.

Objective

Students will identify the safety risks associated with gas and electrical energy and demonstrate strategies for avoiding dangerous situations.

Standards

SEL

- Identify factors that make situations unsafe
- Analyze the risks of dangerous situations
- Demonstrate wise safety decisions

NGSS

- **4-PS3-2 Energy**
Energy transferred via electric currents

Time

45 minutes

Materials

- Safety Hazards Game Cards resource sheet

Prep

For older students: Make copies of the Safety Hazards Game Cards sheet and cut out 3–5 cards per student.

Related Reading List

- *A True Book: Electricity and Magnetism* by Cody Crane
- *Scholastic News: Our Earth Clean Energy* by Peggy Hock
- *The Magic School Bus and the Electric Field Trip* by Joanna Cole
- *The Magic School Bus Science Chapter Book #14: Electric Storm* by Anne Capeci and Eva Moore

1 Flip a light switch off, and ask students what happened. When they say that the light turned off, ask how: *What happened behind the walls and inside the light bulb?*

- **For younger students:** Ask if they have ever seen lightning strike. Explain that lightning is a kind of electricity. People can control where electricity flows. We use it to power technology like lights.
- **For older students:** Prompt for the idea that you're controlling whether electricity is transferred from a power source to the light bulb. Electrical currents can move energy from place to place.

2 Have students suggest ways they use electrical or gas energy every day (e.g., playing games online, keeping warm, recharging a phone, etc.).

3 Note that energy is helpful to us but can also be dangerous if we don't use it properly.

4 Use the Safety Hazards Game Cards resource sheet to lead a leveled group discussion/activity.

- **For younger students:** Use the first two hazards and safety tips on the sheet as discussion starters. Ask students why a “rotten egg” smell/fallen power line are dangerous (guiding them as necessary), and what they should do if they are in this situation.
- **For older students:** Explain that you'll play a game in which you work to solve safety hazards. Hand out several Energy Hazard and Energy Safety Tip cards to



each student. Have students stand, with the cards facing up on their desks. Ask a student to read an energy hazard aloud. Any student who has an Energy Safety Tip card that protects against that hazard flips the card over. Discuss how the tip keeps us safe (see support prompts below).

Continue inviting students to read out new hazards. Each student sits when all of their Energy Safety Tip cards are flipped. The game ends when everyone is sitting—you've cleared the hazards together!

5 Lead a wrap-up discussion. Ask: *What if you're not sure whether something is a hazard, an emergency, or nothing to worry about? What strategies can you use if you encounter an energy safety hazard or emergency?* (Prompt for: stop, think, plan; ask for help from a trusted adult.) At the end of the day, have students take copies of the Family Activity sheet home.

ENERGY SAFETY CARD DISCUSSION SUPPORT

Rotten Egg: The smell of “rotten eggs” can be a signal of a gas leak. Leaking gas is dangerous and can catch fire/cause an explosion. **Power Line:** Downed power lines are extremely dangerous and can cause electric shock. **Phone:** An electronic device coming into contact with water can cause a serious electric shock. **Cord:** Pulling a plug by its cord can damage the cord, increasing the risk of shock or fire. **Rug:** A power cord that's covered by a rug or furniture can overheat or fray, causing a fire. **Outlet:** Hot outlets are dangerous and can spark a fire.