

Understanding Electricity and Electrical Safety

California Content Standards

Understanding Electricity and Electrical Safety supports the following California Content Standards in the areas of Science and Health for grades 4 and 5.

Grade 4

SCIENCE

Physical Sciences

1. Electricity and magnetism are related effects that have many useful applications in everyday life. As a basis for understanding this concept:
 - a. Students know how to design and build simple series and parallel circuits by using components such as wires, batteries, and bulbs.
 - c. Students know electric currents produce magnetic fields and know how to build a simple electromagnet.
 - d. Students know the role of electromagnets in the construction of...electric generators...
 - g. Students know electrical energy can be converted to heat, light, and motion.

Investigation and Experimentation

6. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will:
 - c. Formulate and justify predictions based on cause-and-effect relationships.
 - d. Conduct multiple trials to test a prediction and draw conclusions about the relationships between predictions and results.
 - f. Follow a set of written instructions for a scientific investigation.

HEALTH

Injury Prevention and Safety

- Standard 1. Essential Concepts
 - 1.1.S Describe safety hazards, including those related to fire, water...
- Standard 5. Decision Making
 - 5.1.S Evaluate strategies to avoid potentially dangerous situations.
- Standard 7. Practicing Health-Enhancing Behaviors
 - 7.4.S Follow safety rules and laws at home, at school, and in the community.

Standard 8. Health Promotion

8.1.S Encourage specific measures to improve home or school safety.

Grade 5

SCIENCE

Physical Sciences

1. Elements and their combinations account for all the varied types of matter in the world. As a basis for understanding this concept:
 - b. Students know all matter is made of atoms, which may combine to form molecules.
 - c. Students know metals have properties in common, such as high electrical and thermal conductivity...

Investigation and Experimentation

6. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will:
 - a. Classify objects...in accordance with appropriate criteria.
 - h. Draw conclusions from scientific evidence...

HEALTH

Personal and Community Health

Standard 1. Essential Concepts

- 1.1.P Identify effective personal health strategies that reduce...injury.
- 1.2.S Identify emergency situations.