

## Circuits and Switches

### Supplemental Lesson Ideas

Class discussion topics help prompt student thinking about electricity. Lessons encourage students to consider how dependent they are on electricity. Students apply problem-solving skills when asked to imagine being school principal during an extended power outage.

- 1. Discuss alternatives to using electricity.**  
Discuss the alternatives to electrical power that could be used to run some of the devices. For example, an electric lawnmower could be replaced by a hand lawnmower or a gas-powered mower. The hi-fi systems that require a household current could be replaced by a portable stereo that uses battery power.
- 2. Share experiences during a power failure.**  
Discuss the problems that such a power failure creates. Look for student insights into how dependent we are on electricity as a source of power.
- 3. Have students pretend they are the principal of the school and are told there will be a total power outage for the school for one entire day.**  
What would they have the staff and students do for this day? Have students explain their answers. What if the school was to be without electricity for an entire month? What would the students (as principal) have the staff and students do, and why? Perhaps have students write a list of the things they (as students) would have to do differently to complete their normal school activities.
- 4. Ask students to consider what happens when a light switch is turned on or off.**  
Have students indicate what they think actually happens to produce the light that they see.
- 5. Provide students with the handout Using Electricity.**  
Provide them with a time frame for completion and have them prepare to share their answers with the class.
- 6. Read the handout Nonmechanical Switches and describe a transistor.**  
Have small groups of students take turns reading the handout aloud to each other. Have them describe a transistor in their own words.
- 7. Build a simple circuit following the directions in the Fun With Circuits handout.**