### Learning Objectives
1. Students will observe that energy can change from one form to another.
2. Students will describe how machines and living things can convert stored energy into motion and heat.
3. Students will discuss and recognize that heat is sometimes produced as a waste product of motion.

### Content (QCC's)
- **QCC #3-1** Topic: Science Inquiry, Process Skills and Problem Solving
- **QCC #3-3** Topic: Safety
- **QCC #3-4** Topic: Activities/Tools
  Actively engages in the learning process via hands-on/minds-on science activities and experiences.
- **QCC #3-5** Topic: Energy and Its Transformation: Heat
  Identifies and explores sources of heat energy such as fire and electricity.
- **QCC #3-6** Topic: Energy and Its Transformation: Heat
  Identifies heat as a form of energy. Tests effect of heat on ice or water.

### Materials
- Science Textbook
- Pencil
- D-cell battery
- Masking Tape
- 2 pieces of insulated electrical wire per group
- Miniature light bulb (one per group)

### Procedures

**Introduction (20 minutes)**
1. Begin lesson by reviewing concepts covered the day before.
2. Talk about and introduce how energy can change forms (specifically from sunlight to energy and from energy into motion and heat). Discuss the readings on pages P24-P27.

**Activity (20 minutes)**
3. In small groups, students will conduct the experiment on pages P22-P23 of their textbook and use accompanying workbook pages 261-262.
4. Students will make predictions about what part of the battery, wire, and bulb will need to touch each other in order for the bulb to light. They will draw pictures on their worksheets to demonstrate their ideas.
5. Students will then form hypothesis, test them, and record results from their tests.
6. Students will try alternate ways to light the bulb.
7. Students will then draw conclusions about their results.

**Closure (5 minutes)**
8. The students will return all their materials back to where they belong and turn in their worksheets to the teacher.

### Questions
1. What happened when you connected the ends of the battery to the base of the light bulb by using the wires?
2. Could you make the bulb light by touching the wires to the glass part of the bulb?
3. What is the path that the electricity follows from the battery through the bulb and back again?

### Assessment
This lesson will be informally assessed based on the students' ability to follow directions, work cooperatively in their small group, and engage in class discussion. There will be a homework check grade for the completion of their worksheet.