

## Electric Currents and Circuits

### Objectives

1. To create an awareness of the importance of electricity in everyday life.
2. To introduce basic electrical terms and to illustrate how electricity moves, both in series and parallel circuits.
3. To show the need for a complete electric circuit, how to control electron flow with a switch and to teach series and parallel circuits.
4. Students should be able to wire dry cells either in series or in parallel when given several dry cells, pieces of wire and bulbs.

### Equipment and Materials

ammeter	Manila folders
hand crank generator	1.5 - volt dry cells
voltmeter	1.5 - volt light bulbs and sockets
Christmas tree lights	foil
insulated copper wire	brass fasteners or paper clips

### Recommended Strategy

Have materials displayed on table or desks. (make sure there is an obvious display of examples of series or parallel circuits, such as Christmas tree lights)

Review the importance of electricity in everyday life. Discuss and review the vocabulary you will be using:

circuit	dry cell	terminal	ohm
volt	ammeter	parallel	watt
voltmeter	series	conductor	fuse
current	resistance	ampere	

Have students divide into groups in order that they may work cooperatively with each set of materials.

- a. The first activity should be a simple bulb, battery, and foil assembly. The object of this activity is to reinforce the understanding of what is necessary for a circuit to be completed. A worksheet should accompany the set-up.
- b. The second activity will be a human circuit - students holding hands and then touching the generator.
- c. The third activity will enable each group to devise its own circuits through the use of provided panels and materials. By the process of trial and error along with previous knowledge the students should be able to trace both types of circuits.