

**REAL WORLD APPLICATIONS****● Electric Shock: Caution!**

*Current, voltage, and resistance* are three basic terms used to describe electricity. Current is the rate at which electricity flows. Voltage is the force that causes the electricity to flow. Resistance is the property that slows the flow of electricity through a conducting material.

**The Path of Least Resistance**

Electricity always travels the path of least resistance to the ground. The path of least resistance is a good conductor, such as a metal, any wet material, or the human body. Dry skin gives some resistance to the flow of electricity. However, if the skin is wet—especially from sweat—the resistance drops dramatically.

**Electric Shock Can Have a Wide Range of Effects**

If you touch a “live” wire while you are touching the ground or standing on another conductor that is touching the ground, electricity will flow through you and you will be shocked. Electric shock can be a mild tingle or a deadly jolt. The effect is determined by how much current flows through the body and where it goes. The small amount of electricity used by one Christmas tree bulb can kill a person if it passes through a vital organ.

**Your Turn to Think**

1. Two children are riding bicycles on a narrow path and come to a downed power-line pole that blocks their way. Although the pole is down, the line is not broken. A small bird is sitting on the line and seems fine. Can the children assume that the line is safe for them to pick up and move aside? Why or why not?
2. A certain electric tool comes with a ground wire that users should attach to a path to the ground. How is the ground wire a safety precaution?
3. An electric wire has burned through and fallen on top of the clothes dryer. If you are careful not to touch the wire, would it be safe to open the dryer door to remove the clothing? Why or why not?