Building a Simple Circuit
6th Grade

SC.6.P.13.1
Investigate and describe types of forces including contact forces and forces acting at a distance, such as electrical, magnetic, and gravitational.

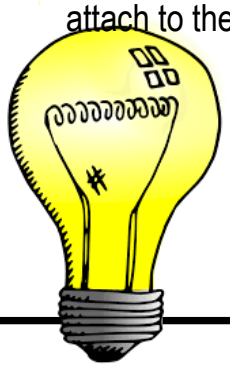
Big Idea: Forces and Changes in Motion
A. It takes energy to change the motion of objects.
B. Energy change is understood in terms of forces--pushes or pulls.
C. Some forces act through physical contact, while others act at a distance.

Problem Statement:
How can you make a light bulb turn on using only the materials provided in this inquiry lab?

Materials:
- ❑ D batteries
- ❑ small light bulbs
- ❑ Pieces of Wires (2 per Group)
- ❑ Battery Holder
- ❑ Light Holder

Procedure:
1) This is intended to be an inquiry lab. Therefore, the students should be placed into 4 groups and given the materials with the problem statement in clear view.

Solution:
1) Place a "D" cell battery in a battery holder. The battery holder will allow you to attach wires to the positive and negative ends of the battery.
2) Now, screw a small light bulb (mini lamp) into a lamp holder. Like the battery holder, the lamp holder will allow you to attach to the light bulb (your load).
3) To complete the circuit, you will need two wires . Use one wire to connect the negative side of the battery to the lamp holder. It does not matter which side of the lamp holder the wire is attached. Connect the positive side of the battery to the lamp holder using the second wire. This wire will attach to the opposite side of the lamp holder. The light bulb should be lit.



(Remember, the voltage of the battery and light bulb should be similar. If the battery voltage is too much larger than the voltage capacity of your bulb, the bulb will burn out. A "D" cell battery provides 1.5V.)