EXPERIMENT:

Electric UNIVERSE

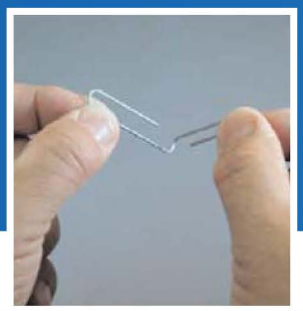
FirstEnergy

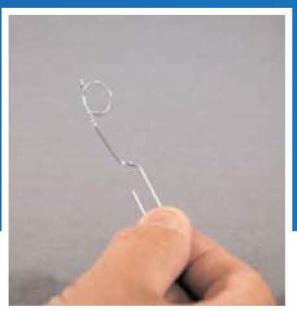
Can you identify conductors and insulators?

Stuff you need:

- Size C battery
- Large paper clip
- Flashlight bulb
- 2 large rubber bands
- Strip of aluminum foil
- 9” wire stripped at both ends
- Piece of cotton string
- Sandpaper (optional)

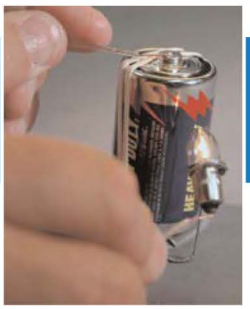
Construction:





1.) Bend the paper clip at a right angle. 2.) Bend a small loop in one end of the paper clip [Hint: a fat pencil helps] 3. Angle the loop backwards slightly and place the flashlight bulb inside the loop. 4. Double the heavy rubber band and secure the paper clip firmly to the bottom of the battery. [Hint: sanding the paper clip where it touches the battery and bulb helps make good electrical contacts.

Experiment:



Take the wire and place one end on the top of the battery and the other end on the tip of the bulb. Keep trying. If you have good contact points on the paper clip, the light bulb will come on. Why? Because the wire is a conductor. It allows electricity to flow through it and completed a circuit from the battery, through the paper clip, through the bulb and back to the battery. Now try with the strip of aluminum foil. The same thing should happen. Aluminum is also a conductor of electricity. Now try the experiment with a rubber band and string. The bulb will not come on. This is because rubber and cotton fibers are insulators. They will not allow electricity to pass, and thus, will not complete the electrical circuit. Now repeat this experiment with other objects. Can you classify these materials as conductors or insulators?