

**Another FREE SAMPLE LAB from
TOPS LEARNING SYSTEMS!**

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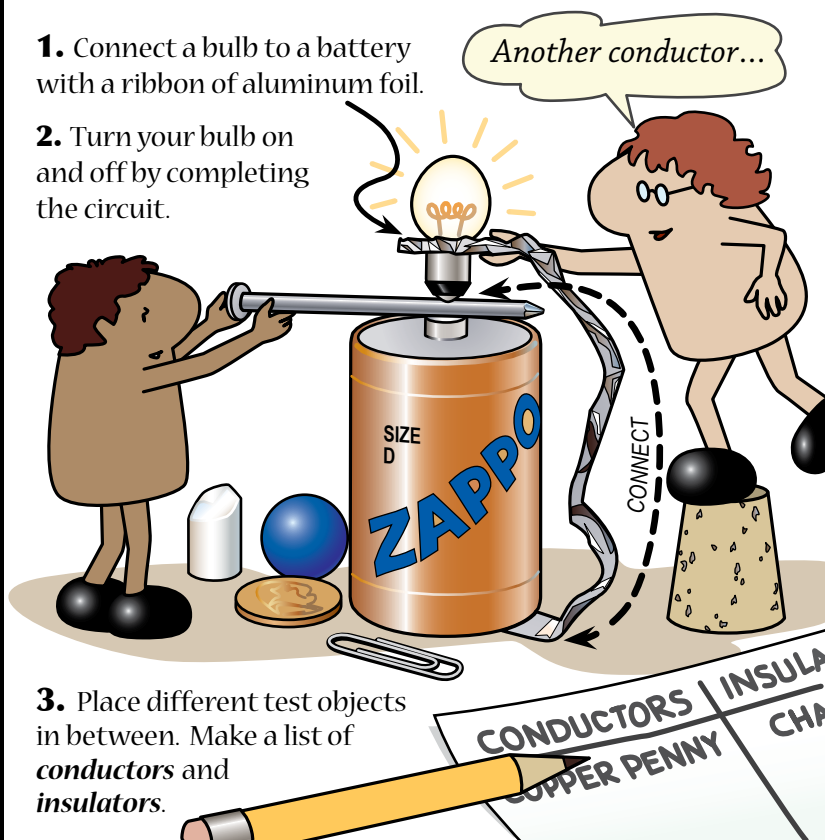
electricity tester

...adapted from **ELECTRICITY #32**
by TOPS Learning Systems

1. Connect a bulb to a battery with a ribbon of aluminum foil.

2. Turn your bulb on and off by completing the circuit.

3. Place different test objects in between. Make a list of **conductors** and **insulators**.



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OBJECTIVE

To use a bulb and battery to find materials that conduct or resist electric current.

LAB NOTES

Make a photocopy of the activity above for each student or lab team.

Step 3. Conductivity is actually a matter of degree. Skin is an insulator at low voltages (as from this battery), but electricians must carefully avoid direct contact with high-voltage wires.

Some materials are poor conductors. Electricity will pass through them, but with enough resistance to give off heat and light. Engineers put these materials to good use, as in the heating element on a stove or the filament in a light bulb.

Older children can list materials, younger students can name objects. Our sample answers list conductors by material, insulators as objects.

MATERIALS

- Battery and bulb from old-fashioned flashlight.
- Aluminum foil strip, 8" long, folded lengthwise for strength.
- Test objects: metal/rubber washer, button, glass, painted surfaces, string, leaf, dental braces...

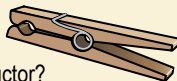
MODEL ANSWERS

CONDUCTORS	INSULATORS
aluminum	eraser
copper	toothpick
brass	comb
iron	window sill
steel	candle
nickel	drinking glass
silver	chalk
tin	skin

EVALUATION

Q: Which part of a clothespin is a conductor? An insulator? How can you tell?

A: The metal spring is a conductor, the wood or plastic body is an insulator. Electricity flows only through the spring to complete the circuit and light the bulb.



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