

Conductor: any material through which electricity easily moves. Examples are most metals and water (if it's not pure.)

Insulators: any material electricity does not move easily through. Examples are plastics, wood, stone, paper and air.

Circuit: a pathway for electricity to travel along. Circuits are made of connected insulators.

1) List 5 materials that electricity can flow through.

- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_
- d. \_\_\_\_\_
- e. \_\_\_\_\_

2) List 5 materials electricity does not flow through well.

- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_
- d. \_\_\_\_\_
- e. \_\_\_\_\_

3) Students are working on their solar car. They clip one wire of their motor to the red wire of the battery pack and the other wire of the motor to the black of the battery pack. The batteries are fully charged. The motor does not turn on. Using the words "conductor" and "insulator", what might the students be doing wrong?

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4) Think of electricity like water flowing through a pipe. If the water can flow in a circle, we say there is a closed or "complete circuit." If there is a break in the circuit, we say there is an "open circuit." If a circuit is closed, the motor or light will work. If the circuit is open, the motor or light will not work.

For each circuit below, say if the circuit is closed or open.

4a) Open or closed?
4c) Open or closed?

4b) Open or closed?
4d) Open or closed?