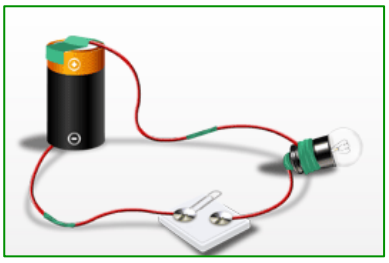


Conductors and Insulators

Leading questions:

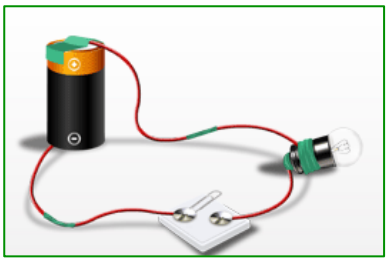
- Why do we use copper or aluminum for wires?
  Explain: Some materials are better at allowing electricity to flow through them then other materials.
- Why do you think electric cords have a plastic coating? What does it do?
  Explain: Plastic coating protects the wire from other materials that might also conduct electricity. It also prevents a short circuit.
    - What kinds of materials do you think might make good insulators?

What to do:

1. First use two wires to make a complete circuit with the battery and bulb.
   - Can you make the bulb light? What does that tell you?
     Explain: The bulb lighting indicates that the circuit is complete (a closed circuit).
2. Now open the circuit and use a third wire to insert an object into the circuit.
   - Based on your findings, classify the material or object as a conductor or insulator.
3. Try attaching the clips to various other objects.
   - Complete the table, classifying each of the things you test as a conductor or insulator.
     Assist the students in trying out different materials supplied and mark them as conductors or insulators by seeing if the bulb lights up or not.

Summary:

- Which what kinds of properties do conductors seem to have?
  Explain: Conductors tend to me metallic, dark or silver in appearance and hard (there are exceptions) malleable and dense.
- What kinds of materials seem to be insulators?
  Explain: Insulators tend to be more brittle, and dull in appearance.



Conductors and Insulators

Leading questions:

- Why do we use copper or aluminum for wires?
- Why do you think electric cords have a plastic coating?

We refer to materials that conduct electricity well as **conductors**, and materials that do not conduct electricity insulators. Before you begin, predict if you think the materials provided would be a conductor or an insulator.

What to do:

1. First use two wires to make a complete circuit with the battery and bulb.
   - Can you make the bulb light? What does that tell you?
2. Now open the circuit and use a third wire to insert an object into the circuit.
   - Based on your findings, classify the material or object as a conductor or insulator
3. Try attaching the clips to various other objects.
   - Complete the table, classifying each of the things you test as a conductor or insulator.

Summary:

- Which materials do you think tend to behave as conductors?
- What kinds of materials seem to be insulators?

Conductor or Insulator

What Do You Think?

Item or Material	You Predict C or I	What Happened C or I
Aluminum foil		
Glass		
Coin		
Charcoal stick		
Mirror		
Plastic ruler		
Pencil lead		
Nail		
Magnet		
Chopstick		
Key		
Wool yarn		