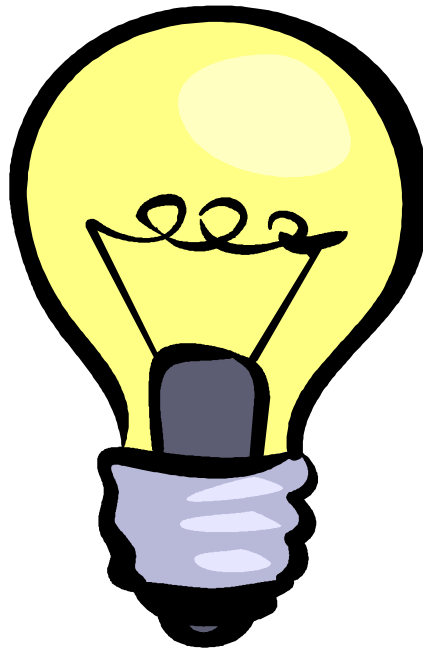


Electrical components and circuits

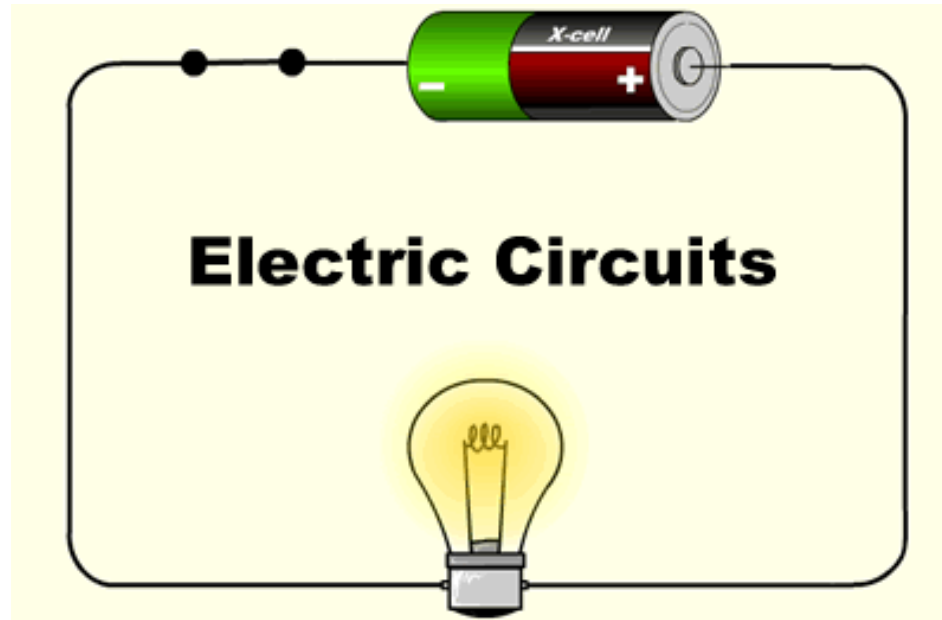


What is electricity?

- Electricity is a form of energy
- It is caused by a flow of tiny particles called electrons through a material

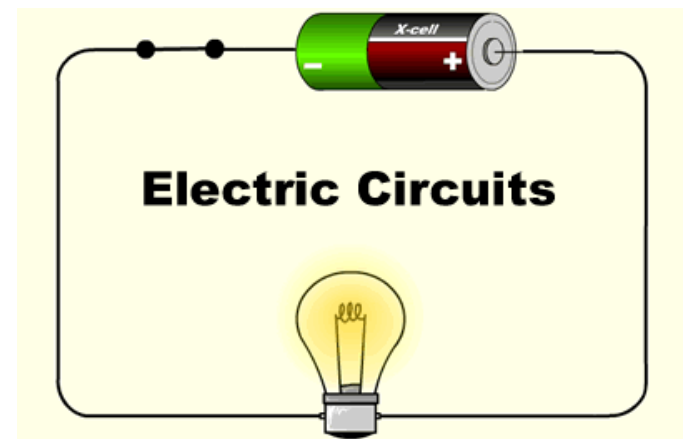
What is an Electrical Circuit?

- A circuit is an electrical device that provides a path for electricity to flow



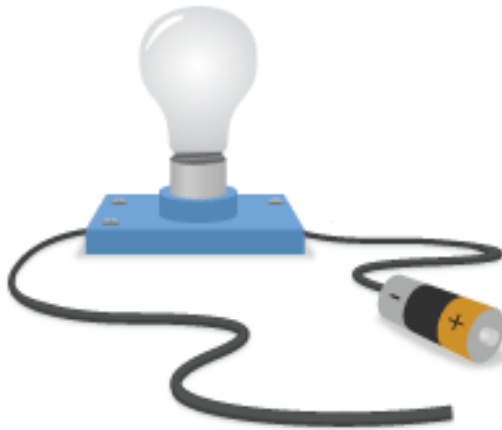
Complete or Incomplete?

- A complete circuit is where all the components of a circuit are joined up and there are no gaps
- The pathway for electricity is complete



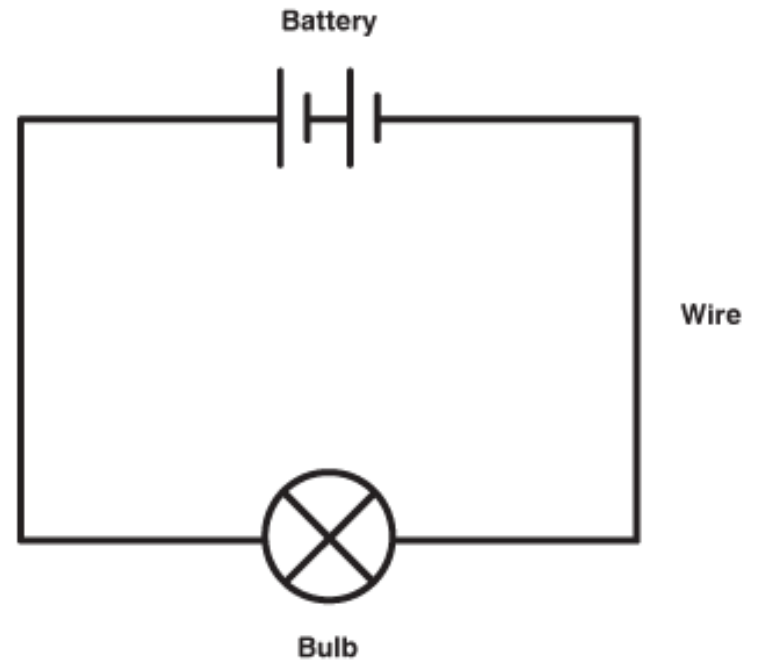
Complete or Incomplete?

- An incomplete circuit is where the pathway for electricity is broken
- The electricity cannot flow



Circuit Diagrams

- An easy way to draw a circuit is with a circuit diagram

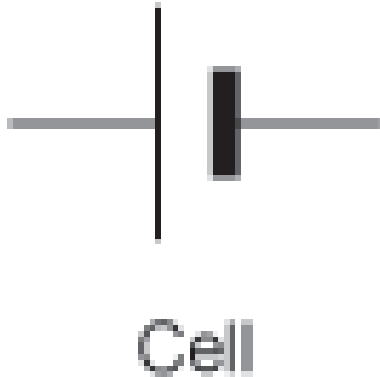


Circuit Diagrams

RULES:

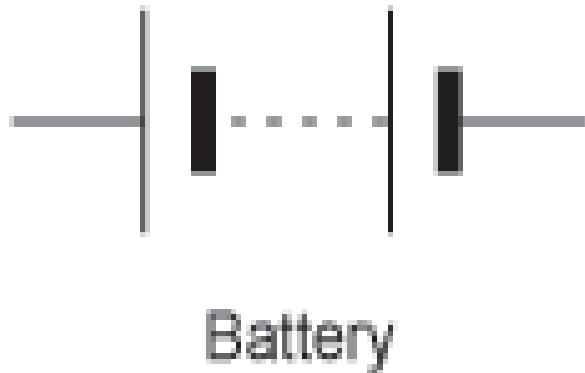
1. Each component has its own symbol
2. Wires connect the components
3. Wires must be drawn with straight lines with a ruler
4. The wires should never cross each other

Component Symbols – a cell



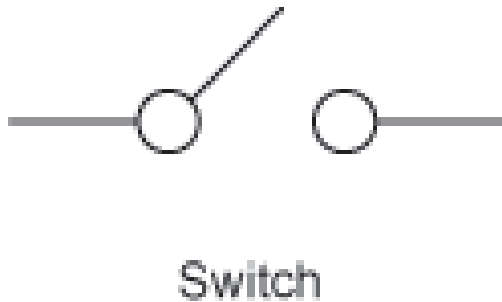
- A cell is what gives the circuit power
- The long line is the positive end
- The short line is the negative end

Battery



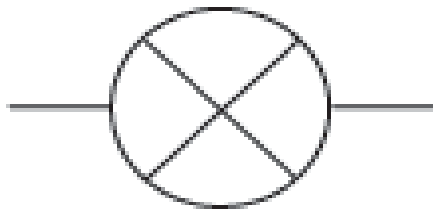
- A battery is made up of 2 or more cells
- It gives the circuit power
- It is important that each cell faces the right way

Switch



- A switch can be open (as shown) or closed
- When the switch is open, the circuit is incomplete – no electricity can flow
- **What happens when the switch is closed?**

Bulb / Lamp



Lamp



- The lamp lights up when electricity flows through it
- **What would happen to a lamp if there was an open switch in the circuit?**

Voltmeter



Voltmeter

- The voltmeter measures the voltage of the circuit
- We will discuss this in another lesson

Ammeter



Ammeter

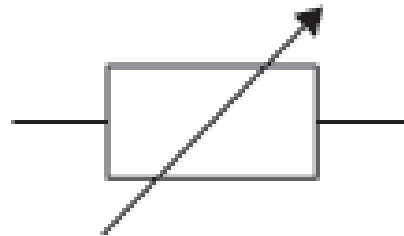
- The ammeter measures the current in the circuit
- We will discuss this in another lesson

Resistor

- A resistor can change the amount of current in a circuit



Resistor



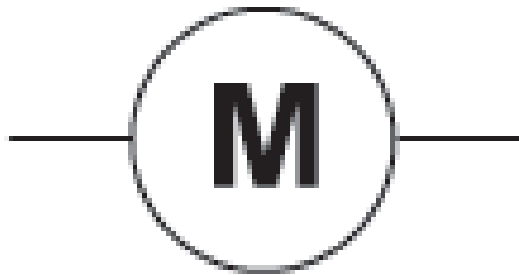
Variable resistor

Fuse



- A fuse is a safety device
- When the current is too high, the fuse breaks

Motor



Motor

- A motor can be fitted into a circuit
- **What do you think happens to a motor in a complete circuit?**