

## VOCABULARY

**Circuit**- A path that an electrical current can flow around.

**Symbol**- a visual picture that stands for something else.

**Cell**- A single unit battery that stores chemical energy.

**Battery**- A collection of cells which stores chemical energy.

**Current**- The flow of electrons, measured in amps.

**amps**- How electric current is measured.

**Voltage**- The force that makes the electric current move through the wires. The greater the voltage the more current will flow.

**Resistance**- the difficulty that the electric current has when flowing around a circuit.

**Electrons**- Very small particles that travel around an electrical circuit.

**Alessandro Volta.**  
**1745-1827**



Italian physicist, chemist and pioneer of electricity and power. He is credited as the inventor of the electric battery and discovered methane.

## Components of a circuit

Wire



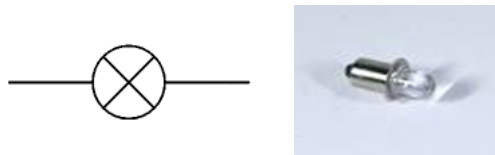
Cell



Switch



Bulb



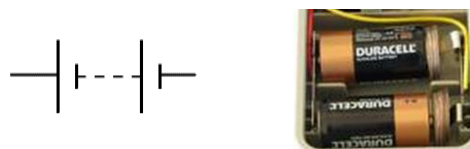
Buzzer



Push Switch



Battery



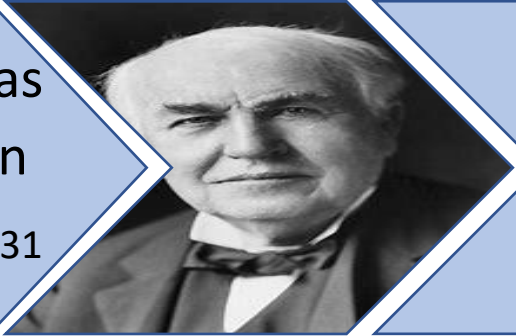
Motor



These symbols can be used to complete an electrical circuit.



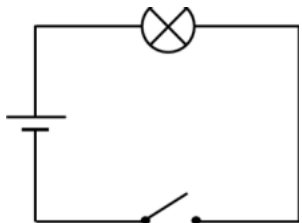
Thomas  
Edison  
1847-1931



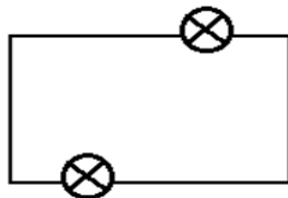
Lived in New Jersey in USA.  
Known as one of the  
greatest inventors in  
history. He invented the  
lightbulb, the phonograph  
(record and play sound)  
and an early video camera.

Electrical Conductors	Electrical Insulators
Copper	Rubber
Iron	Wood
Steel	Plastic
Silver	Paper
Gold	

## Series Circuits



The light will not light  
until the switch is  
closed to complete the  
circuit.



This circuit will not  
work as there is no  
battery to provide  
energy.

Electrons  
flow  
through  
the circuit  
to make  
the circuit  
work.

Light is measured in Lux.

Voltage is measured in  
Volts. Using a volt metre.

The current is measured in  
amps using an ammeter.

Watt is a unit of power. (Rate  
of which energy is consumed).



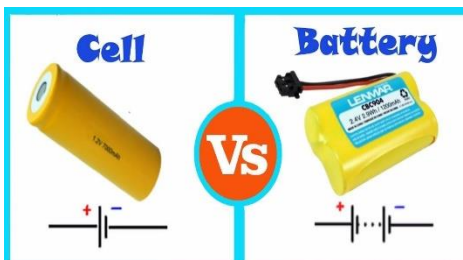
## Common Electrical Hazards

1. Overloading a plug extension socket
2. Exposed wires.
3. Damaged wall sockets.

4. Wires left along the carpet for people to trip over.
5. Placing metal into electrical appliances or open sockets.
6. Electrical appliances and wires near water.

NOTE: Water can be an excellent electrical conductor so it can be very dangerous to have electrical devices near water.

## What is a battery?



## Difference between Cell and Battery

A cell is a single unit that stores energy. A battery is a collection of cells that store energy.

Batteries have voltage which is the amount of force that makes the electrical current move through the wires. The voltage can be found on the battery.

One end of a battery is an anode and the other a cathode.  
Electrolytes (liquid) are found in a battery which ions flow through.

## Renewable Energy

Renewable energy is **useful energy that is collected from renewable resources, which are naturally replenished on a human timescale.**



Solar



Wind



Hydro



Biomass

