

Circuit symbols

cell	
battery	
ammeter	
voltmeter	
motor	
bulb	
Open switch	
Closed Switch	
Resistor	
Variable resistor	

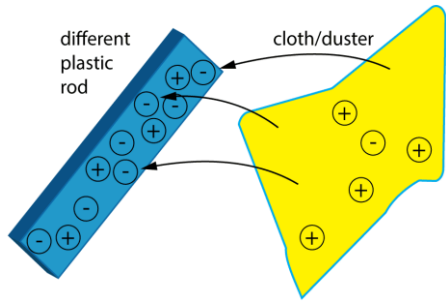
Static electricity The gain or loss of electric charge in the form of electrons.

Negative charge

Gain of electrons

Positive charge

Loss of electrons

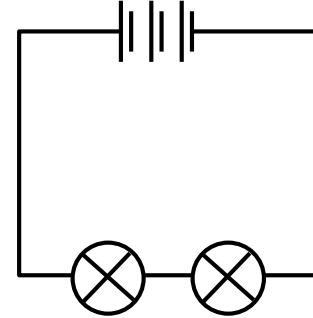


Neutral charge = Positives and negatives are balanced

Series circuits - Components one after the other

Current is the same at any Point.

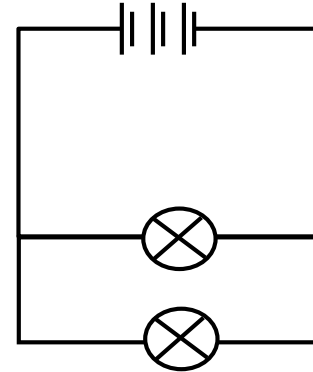
Voltage is split between Each component.



Parallel circuits - Components along side one another

Current is split down each 'path'.

Voltage is the same across each component



Current

The rate of flow of charge.

Units – Ampere **A**
Meter – Ammeter

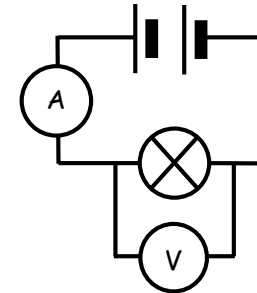
Ammeter in **series**

Voltmeter in **parallel**

Voltage

A 'push' that causes current to flow.

Units – Volt **V**
Meter - Voltmeter

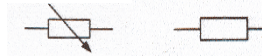


Resistance – Anything that resists the flow of a current

Units Ohms Ω

$$\text{Resistance } (\Omega) = \frac{\text{Voltage (V)}}{\text{Current (A)}}$$

Resistors



Ohm's law $V = IR$

V = Voltage (V)

I = Current (A) R = Resistance (Ω)

Magnetism

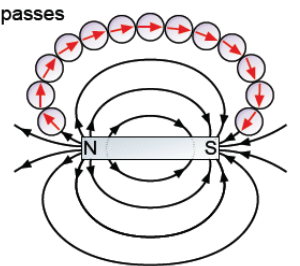
Like poles repel, opposite poles attract.

Magnetic materials:

- Iron (Fe)
- Nickel (Ni)
- Cobalt (Co)

Magnetic fields

small compasses



The black lines with arrows show how the compasses point when they are placed there.

Electromagnets

Possible independent variables

Number of coils

Current

Dependent variable

Strength of electromagnet – e.g. number of paper clips lifted.

Conclusion

Increasing the number of coils or the current **increase** the strength of the electromagnet

