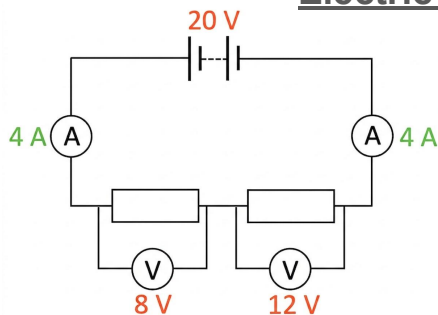


Yr8 Electricity and Magnetism Knowledge organiser

Electric circuits



Series circuit rules (Yr7)

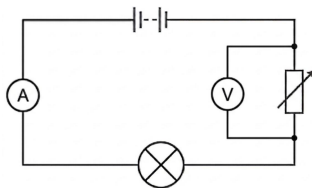
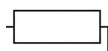
The current is the same at all points.

The potential difference of the battery is shared between the components.

Resistance

This acts against the current. It is measured in Ohms Ω . A variable resistor's resistance can be manually changed.

New symbols: Resistor Variable resistor



Calculating resistance

R - Resistance (Ohms Ω)

V - Potential difference (Volts V)

I - Current (Amps A)

$$R = \frac{V}{I}$$

In the above diagram the current and potential difference are measured for the variable resistor to calculate its resistance.

Magnetism and electromagnetism

Magnetism rules: Like poles attract, opposite poles repel.

Magnetic materials: Iron, Nickel and Cobalt.

Induced magnetism: When a magnetic material is attracted to a magnet.



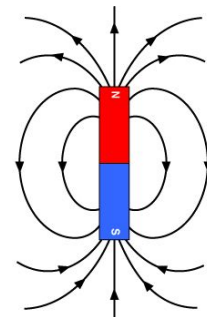
Magnetic fields

A magnetic field is an area where if a magnet or magnetic material is placed it will feel a force.

The field lines exit the North pole and enter the South.

They never cross.

The closer the lines the stronger the field is.



Electromagnets

A wire with a current flowing produces a magnetic field.

If the wire is coiled (a solenoid) the field lines add together creating field lines similar to a bar magnet.

If an iron core is added to the solenoid this strongly magnetises and becomes an electromagnet.

The strength is increased by adding more coils, or a faster current.

