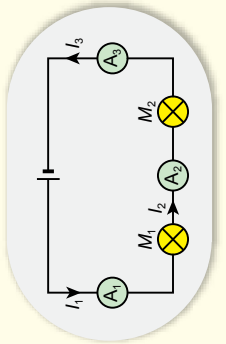
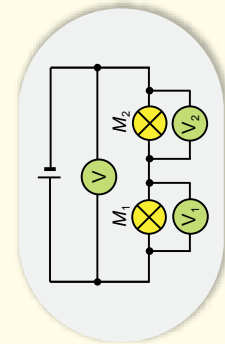
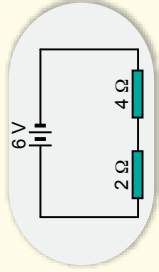
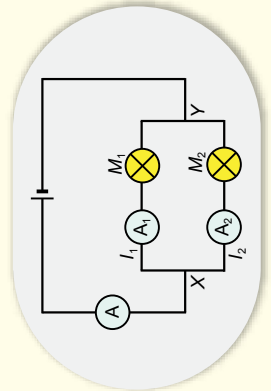
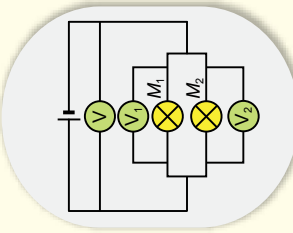
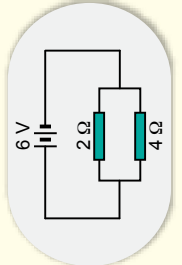
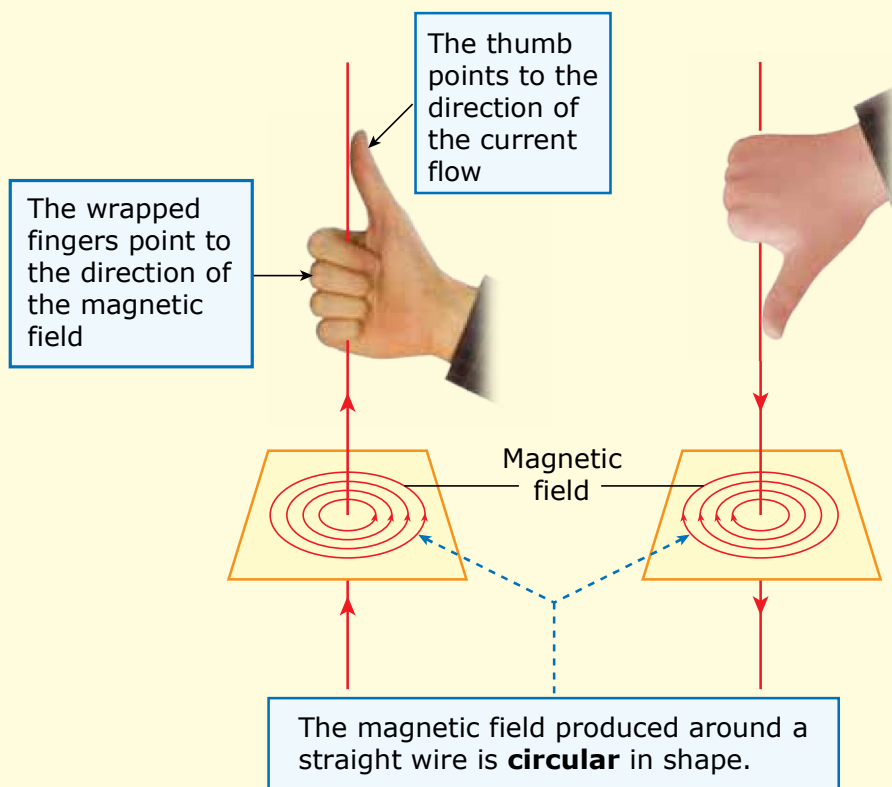


Comparison Between Series Circuit and Parallel Circuit

Series Circuit	Parallel Circuit
The current that flows through bulbs M_1 and M_2 is the same.  $I_1 = I_2 = I_3$ The voltage that goes across the whole circuit is the same as the sum of voltage across bulbs M_1 and M_2.  $V = V_1 + V_2$ Effective resistance, R is the total resistance of all the components.  $R = R_1 + R_2$ Disadvantages: ● Damage to one of the electrical appliances causes the others to cease to function. ● Adding more electrical appliances causes resistance to increase and flow of current to decrease. ● Each electrical appliance cannot be switched off individually.	The current that flows in a parallel circuit is the sum of current that flows through each path.  $I = I_1 + I_2$ The voltage that goes across each path in a parallel circuit is the same as the voltage that flows across the dry cell.  $V = V_1 = V_2$ Effective resistance, $\frac{1}{R}$ is the same as the total inversion of all resistors in the circuit.  $\frac{1}{R} = \frac{1}{R_1} + \frac{1}{R_2}$ Disadvantages: ● The voltage across each electrical appliance cannot be adjusted because the voltage is the same as the source of the voltage.

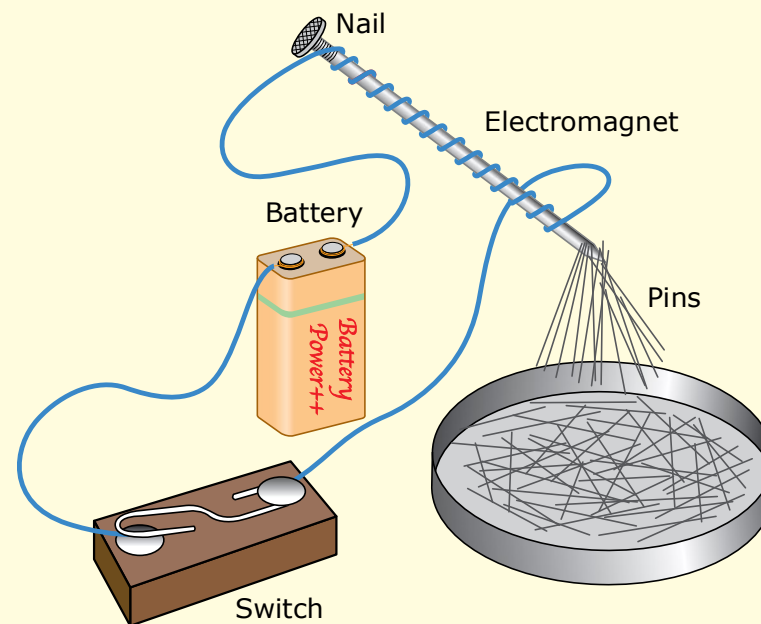
Right-hand Grip Rule

The right-hand grip rule is used to determine the direction of the field lines.



Electromagnet

When electric current flows through a coil of wire wrapped around a soft iron core (e.g. nail), it creates a strong magnet called an **electromagnet**.



- An electromagnet is a **temporary** magnet. When the current in the coil is switched on, the soft iron core becomes a magnet.
- If the current in the coil is switched off, the magnetism in the soft iron core disappears.