







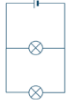

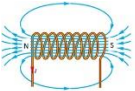


1.1 – Circuit Components	
Cell	 Energy source for the circuit. Store of chemical energy.
Battery	 Two or more cells connected together.
Bulb	 Current heats the filament so it gives out light.
Switch	 Allows circuit to be switched on (closed) and off (open).
Resistor	 Reduces the flow of current by increasing resistance in circuit.
Ammeter	 Measures current in a circuit. Connect in series with components.
Voltmeter	 Measures potential difference of a component. Connect in parallel around the component.
1.2 – Electrical Circuits	
How do circuits work?	There must be an energy source and a complete circuit for current to flow. Electrons move through wires and transfer energy.
Series circuits 	Have one loop.
	If one component breaks, others switch off.
	Adding more bulbs makes them dimmer.
Parallel circuits 	Have more than one loop.
	If one component breaks, components in other loops stay on.
	Adding more bulbs in other loops has no effect on brightness.
Current	Rate of flow of charge. Measured in amps (A).
Potential difference (P.D.)	The energy transferred per unit charge. Measured in volts (V).
Resistance	A measure of how hard it is for current to pass through a component. Measured in ohms (Ω).
Equation	Potential Difference = Current x Resistance. $V = I \times R$.

1.3 - Magnets	
Bar magnet	A permanent magnet with a north pole and a south pole. Like poles repel. Unlike poles attract.
Magnetic field around a bar magnet	Field lines go from north to south.
	Field is strongest at the poles.
	Field gets weaker further away from the magnet.
Investigating a magnetic field	Use iron filings or a plotting compass.
Magnetic materials	Iron, nickel, cobalt and steel (an alloy of iron).
Temporary magnets	Magnetic materials behave like magnets when placed in a magnetic field. Iron is soft and loses magnetism easily after. Steel is hard and keeps magnetism longer.
Compass	Contains a tiny bar magnet. Points towards Earth's north pole.
Earth's magnetic field	Created by moving iron in the Earth's core.
1.4 - Electromagnets	
Solenoid 	A long coil of wire.
Electromagnet 	Created by passing a current through a solenoid. Behaves like a bar magnet but you can switch it on and off.
How to increase the strength of an electromagnet	Increase the current.
	Increase the number of coils.
	Use a soft iron core.
Uses of electromagnets	Sorting metals for recycling, moving objects in scrapyards, electric motors, levitating trains, relay circuits.

Y8 Science Cycle 2 - Sheet 1 Electricity & Magnetism

