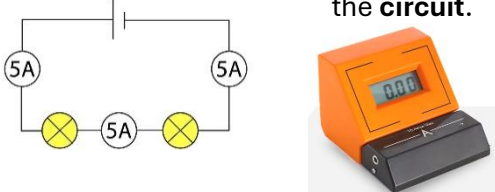

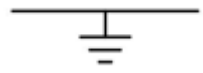
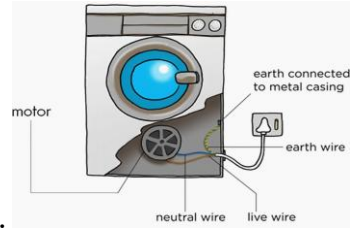
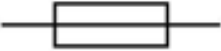



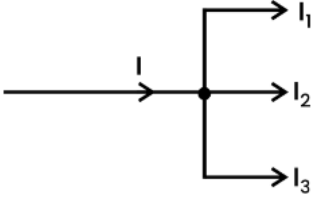
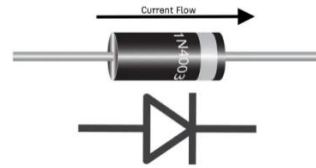
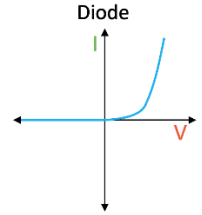




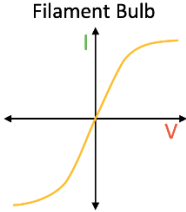
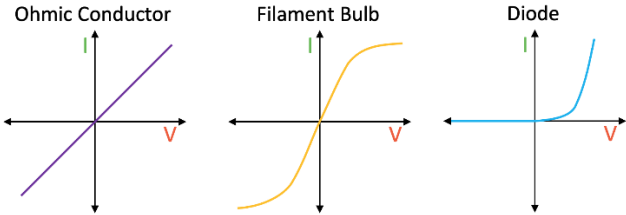

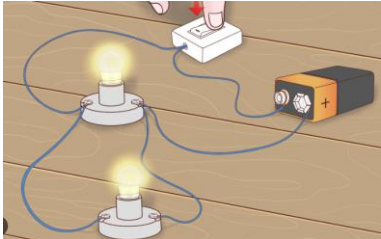
1b Electricity Year 9

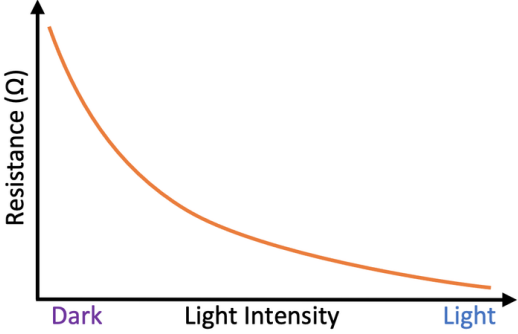
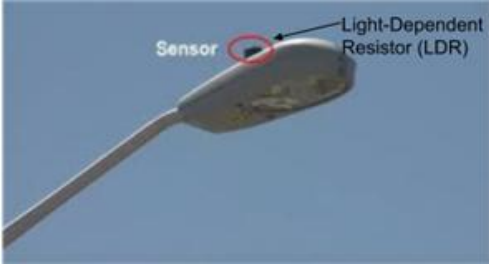
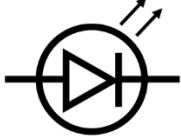

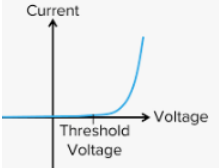
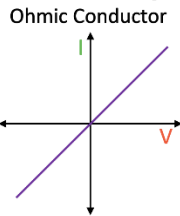
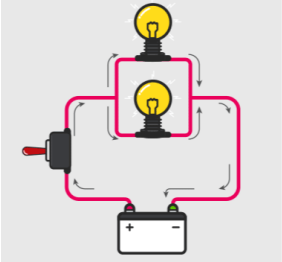
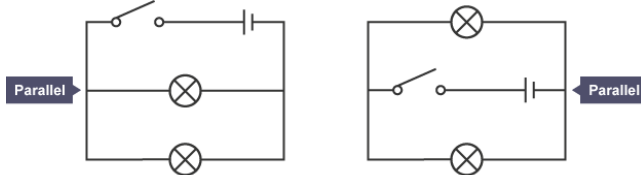
Key word	Simple meaning	GCSE definition	Words in a sentence	Translation
Circuit breaker	Safety device that stops the electricity.	An electromagnetic switch which disconnects the circuit when a difference in current between the live wire and neutral wire is detected.	A circuit breaker works very quickly and can be reset . This is why they are more useful than a fuse .	
Current	The flow of electrons.	Current is the rate of flow of charge . $I = \frac{Q}{t}$	The current was measured on the ammeter . It was the same at every point in the circuit . 	
Charge	Positive or negative amount of electricity.	A charge feels a force in an electric field. In an electric circuit, electrons are the charges that flow.	The person rubbed a balloon on their head. The balloon got a charge of +1nC and the person got a charge of -1nC.	
Conductor	Something that allows electricity to move through it.	Material with low electrical resistance that allows electrical charges to move when a voltage is applied across it. 	The girl connected two copper wires from the power supply to the motor. Current passed through the wires and motor, making it turn.	
Double insulation	Safety feature around a device.	Two layers of resistive material e.g. plastic, around an electrical device to prevent electric shock.	The broken hair dryer had double insulation so the person did not get a shock when they touched the case.	
Earthing	A connection to the ground. 	A wire connecting an object to the ground. The Earth has 0V, so the object has 0V.	Earthing the washing machine will make it safer to use. 	



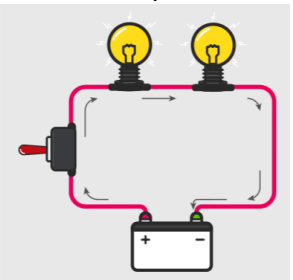
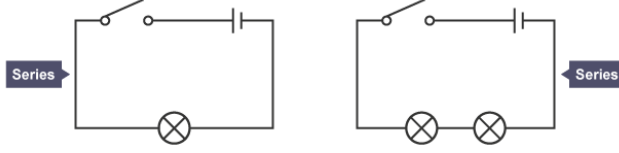


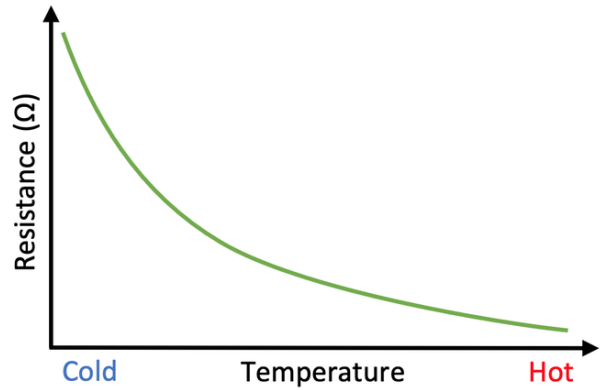
Energy	The ability to do work . e.g. You need energy to run.	Energy is the ability to do work . Stores of energy: kinetic, gravitational potential, chemical, elastic potential, magnetic, electrostatic, nuclear, thermal	In a battery, the energy is held in the chemical potential energy store and is transferred electrically into other forms by circuit components.	
Fuse	A safety device that stops the electricity. 	A device with a thin wire that melts and breaks when a large current goes through it. 	When the current is larger than the fuse rating , the fuse melts . This protects the device from large currents . Too much current melts the fuse (wire) which breaks the circuit. It must be connected to the live wire.	
Insulation	A rubber cover around a wire.	A case around the wire or appliance with material of high electrical resistance	The insulation around the wire stops someone being electrocuted when they touch it.	
Power	How fast energy is being transferred. E.g. the high power fan was faster than the low power fan. 	The rate of work done . $P = \frac{W}{t}$ The rate of energy transfer . $P = \frac{E}{t}$ Electrical power can be calculated using $P = IV$ Power (P) is measured in watts (W)	The fan had a power of 50 W. This means that it transfers 50 J of energy every second .	
Rate	How something changes in time	How a variable changes in 1 second.	Current is the rate of flow of charge. Power is the rate of transfer of energy. Speed is the rate of change in distance. Acceleration is the rate of change in velocity.	
Resistor	A device that slows the current.	A device that restricts the current . A device that restricts the flow of electric charge .	A large resistor was added to the circuit to keep the current low.	
Voltage And Potential difference	The amount of energy given by charges.	The voltage is the amount of energy per unit charge. $V = \frac{E}{Q}$ The potential difference is the difference in voltage between two points.	The potential difference across the resistor was 4 V. This was read on the voltmeter . 	




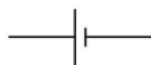
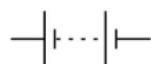
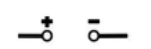

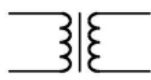
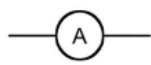
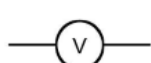
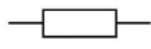
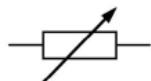
1c Electricity Year 10

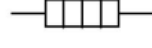


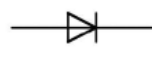





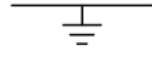
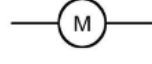
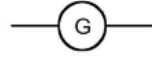

Key word	Simple meaning	GCSE definition	Words in a sentence	Translation
Alternating current (A.C.)	A current that goes back and forth.	A current that regularly changes direction , going back and forth in a circuit.	Mains electricity uses an alternating current at frequency of 50Hz.	
Conserve	When something is always the same.	<p>A quantity is conserved when it is always the same.</p> <p>E.g. charge is conserved. The total current leaving a junction is equal to the total current entering the junction.</p> <p>E.g. energy is conserved. In a loop, the total potential difference supplied (e.g. from batteries) is equal to the sum of potential difference across each component.</p>	<p>The current going into the junction was 10A, the current leaving the junction was 7A in one branch and 3A in the other. This shows that charge was being conserved.</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>KIRCHHOFF'S 1st LAW: $I = I_1 + I_2 + I_3$</p>  </div>	
Diode	<p>A device where the current can only flow in one direction.</p> 	<p>A semiconductor device that allows current to flow in one direction only.</p> <ol style="list-style-type: none"> For p.d. in one direction, there is no current. For small p.d. in the other direction, there is still no current. For large p.d., current flows. 	<p>A diode is used in the circuit to protect the device. If a person puts the battery in the 'wrong way', no current will flow.</p>	
Direct current (D.C.)	A current that goes in one direction only.	A current that goes in one direction only .	A battery provides causes electrons to move in one direction only , a direct current flows in the circuit.	
Filament bulb	A light bulb.	A light bulb that has a wire in it that gets hot and glows when a large current runs through it.	The IV characteristic curve showed that for large currents the filament	

			bulb had an increased resistance . This is because the filament got hot .  <p>Filament Bulb</p>	
IV Characteristic (curve)	A graph of current plotted against voltage.	A graph of current plotted against potential difference. These can be used to identify the component.  <p>Ohmic Conductor Filament Bulb Diode</p>	The IV characteristics for the ohmic conductor and a filament bulb have the same behaviour for small currents.	
Junction of conductors	Part of a circuit where two or more wires are joined 	Connection in an electrical circuit between two or more wires so current can pass into a different component or part of the circuit.	The switch completed the circuit allowing current to flow through the wires to the bulbs. At the junction, the current split to follow separate paths. 	
Light dependent resistor (LDR)	A device that changes when light is shining on it.	A component that reduces its resistance with increasing light intensity.	An LDR is used in a sensor on the top of a street light so that when the light reduces in the evening, the street lights turn on.	

				
Light emitting diode (LED)	<p>A diode that emits light when a current flows.</p> 	<p>A diode that emits light when a current flows in it.</p> 	<p>A diode and a LED have the same characteristic curves although the Threshold Voltage for an LED is larger.</p> 	
Ohmic conductor (resistor)	<p>A wire or device with a constant resistance.</p>	<p>A device where the current through it is directly proportional to the potential difference across it, for the same temperature.</p> <p>Ohmic Conductor</p> 	<p>After plotting the data of current and potential difference the pupil identified a straight line of best fit going through the origin. This showed that the component was an ohmic conductor. $R = V / I$ was a constant.</p>	
Parallel circuit	<p>An electrical circuit with more than one branch.</p> 	<p>A circuit with junctions forming more than one loop.</p> 	<p>In the parallel circuit both bulbs received the same potential difference.</p>	
Rate	<p>How something changes in time</p>	<p>By how much a variable changes in 1 second.</p>	<p>Current is the rate of flow of charge. Power is the rate of change in energy.</p>	

			Speed is the rate of change in distance. Acceleration is the rate of change in velocity.	
Resistor	Something that reduces current. 	A component that restricts the flow of charge. 	In the experiment a resistor was used in the circuit for safety reasons. For shorter lengths of wire the current wouldn't go above 2A.	
Series Circuit	A circuit with only one loop. 	A circuit with only one loop. The current at every point in the circuit is the same. 	In the series circuit , both bulbs received the same current .	
Thermistor	A device changes when it is heated.  	A component that reduces its resistance with increasing thermal energy. 	A thermostat in a house has a thermistor in it. When the temperature of the house increases, the resistance of the thermistor decreases. This is used in the sensor to turn off the heating system.	
Wire	A thin long piece of metal.	A long piece of metal. When a large current runs through a wire it gains thermal energy. At GCSE level we <i>assume</i> the connecting wires, such as leads, have no resistance.	The current in the circuit is read on the ammeter. The pupil ensures that the current does not go higher than 2A to prevent heating in the wires .	

Description	Symbol
Conductors crossing with no connection	
Junction of conductors	
Open switch	
Cell	
Battery of cells	
Power supply (DC)	
Power supply (AC)	
Transformer	
Ammeter	
Voltmeter	
Fixed resistor	
Variable resistor	

Description	Symbol
Heater	
Thermistor	
Light-dependent resistor (LDR)	
Diode	
Light-emitting diode (LED)	
Lamp	
Loudspeaker	
Microphone	
Electric bell	
Earth or ground	
Motor	
Generator	
Fuse/circuit breaker	

1d **Electricity** Year 11 – not yet studied

Key word	Simple meaning	GCSE definition	Words in a sentence	Translation
Conductor				
Electrostatic force				
Friction				
Gain				
Insulator				
Like charges				
Loss				
Spark				
Static Charge	Positive or negative amount of electricity.	A measure of the amount of electrical energy an object has, measured in Coulombs (C).	The person rubbed a balloon on their head. The balloon got a charge of $+1\mu\text{C}$ and the person got a charge of $-1\mu\text{C}$.	
Static charge				
Transfer				
Unlike charges				