

GCSE Physics: what you need to know

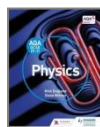
Electricity

Static charge (Triple Science Physics ONLY)	I can do this already	Covered in	Strength	Weakness	I have revised this	Book references
I can describe how insulating materials can be given a static electric charge .						
I can describe the transfer of charge that takes place when objects are given a static electric charge.						
I can explain why sparks may travel to or from an object that has been given a static electric charge.						
I understand that charged objects exert a force on each other.						
I can describe the force between objects with the same type of charge (e.g. + and +), and between objects with opposite charges (+ and -).						
I can describe evidence for the forces between charged objects that are not in contact.						
Electric fields (Triple Science Physics ONLY)						
I can draw diagram to show the electric field around a charged sphere.						
I can explain what is meant by an electric field.						
I can explain how the idea of an electric field helps to explain the force between charged objects and phenomena such as sparking.						
Current, potential difference and resistance						
I can draw the circuit symbols for: a switch (open or closed), cell , battery , diode (and LED), resistor (fixed and variable), bulb , fuse , voltmeter , ammeter , thermistor and LDR .						
I can describe the difference between series and parallel circuits.						
I can explain what is meant by the term electric current .						
I understand that the <u>size</u> of an electric current is equal to the ' rate of flow of charge '.						
I can recall the equation that links current, charge and time , and give the units of each of these quantities.						
I can describe how electric <u>current</u> varies around series and parallel circuits.						
I understand that a current will only flow in a circuit if there is a source potential difference (such as a power supply, battery or cell).						
I understand that potential difference is another name for 'voltage'.						
I can explain what the potential difference between two points in a circuit tells us.						
I can recall the equation that links potential difference, energy and charge , and give the units of each of these quantities.						
I can describe how <u>potential difference</u> varies around series and parallel circuits.						
I can describe an experiment to investigate the effect of <u>potential difference</u> on the <u>current</u> flowing through a i) filament bulb, ii) resistor and, iii) light-emitting diode (LED). <ul style="list-style-type: none"> My description will include a detailed method and circuit diagrams. I will be able to explain the purpose of each component in the circuit. 						
I can recall the equation that links potential difference, current and resistance , and give the units of each of these quantities.						
I can <u>describe</u> the effect of potential difference on the current flowing through i) a filament bulb, ii) a resistor and, iii) a light-emitting diode (LED) <ul style="list-style-type: none"> in words by sketching labelled graphs. 						

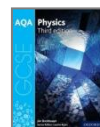
Current, potential difference and resistance continued	I can do this already	Covered in	Strength	Weakness	I have revised this	Book references
I can use the idea of resistance to <u>explain</u> the effect of potential difference on the current flowing through a i) filament bulb, ii) resistor and, iii) light-emitting diode (LED).						
I can explain how to calculate the total resistance of two or more resistors that are connected in <u>series</u> .						
I understand that the total resistance of two resistors connected in <u>parallel</u> is less than the resistance of the smallest individual resistor.						
I can describe an experiment to investigate the relationship between the length of a wire and its resistance.						
I can describe the relationship between the length of a wire and its resistance.						
I can describe an experiment to investigate the resistance of resistors that are connected in series and in parallel.						
I can describe the <u>variation of resistance with temperature</u> for a NTC-type thermistor <ul style="list-style-type: none"> in words by sketching a labelled graph. 						
I can describe some uses of thermistors.						
I can describe the <u>variation of resistance with light intensity</u> for a LDR (light dependent resistor) <ul style="list-style-type: none"> in words by sketching a labelled graph. 						
I can describe some uses of LDRs.						

Book references:

H = *Physics* by England and Whitney
(published by Hodder)



O = *Physics* by Breithaupt
(published by Oxford)



Equations you must learn

Equation that links current, charge and time	
Equation that links potential difference, energy and charge	
Equation that links potential difference, current and resistance	