


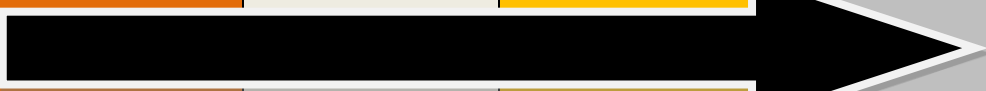


Year 10: ASK Yourself!

Subject: Physics Unit: 2 - Electricity

	Launching 1-2	Developing 3-4	Progressing 5-6	Mastering 7-9
 S skills				
	<p>To be able to set up a circuit to investigate the relationship between V, I and R for a fixed resistor.</p> <p>To be able to identify live, neutral and earth wires by their colour-coded insulation.</p>	<p>To be able to set up a circuit to investigate the relationship between V, I and R for a range of electrical components.</p> <p>To be able to explain why a live wire may be dangerous even when a switch in the main circuit is open.</p>	<p>To be able to draw I-V graphs for a fixed resistor and other components.</p> <p>To be able to explain the dangers of providing any connection between the live wire and earth or our bodies.</p>	<p>To be able to analyse and interpret I-V graphs for a fixed resistor and other components.</p> <p>To be able to use I-V graphs to determine if the characteristics of components are ohmic or nonohmic.</p>
 K knowledge				
	<p>To be able to recall that an electric current is a flow of electrical charge and is measured in amperes (A).</p> <p>To be able to recall that the current through a component depends on the resistance of the component and the potential difference across it.</p> <p>To be able to understand that everyday electrical appliances bring about energy transfer.</p> <p>To be able to recall that power is measured in watts (W) and 1 kW = 1000 W.</p>	<p>To be able to remember that charge is measured in coulombs (C) and recall and use the equation $Q = It$.</p> <p>To be able to recall and apply the equation $V = IR$ and for series circuit $R_{total} = R_1 + R_2$.</p> <p>To be able to recall and use the equation energy transferred $E = Pt$.</p> <p>To be able to recall and use the equation $P = V \times I$.</p> <p>To be able to recall that the National Grid is a system of cables and transformers linking power stations to consumers.</p>	<p>To be able to remember the concept that current is the rate of flow of charge. Rearrange and apply the equation $Q = It$.</p> <p>To be able to recall and apply the equation $V = IR$ and for series circuit $R_{total} = R_1 + R_2$ and for parallel circuits $1/R_{total} = 1/R_1 + 1/R_2$.</p> <p>To be able to recall and apply the equation energy transferred $E = QV$.</p> <p>To be able to describe how step-up and stepdown transformers change the potential difference in the National Grid.</p>	<p>To be able to explain the concept that current is the rate of flow of charge. Rearrange and apply the equation $Q = It$.</p> <p>To be able to explain the effect of adding more resistors to series and parallel circuits.</p> <p>To be able to recall, use and rearrange the equations $P=VI$ and $P=I^2R$.</p> <p>To be able to explain why electrical power is transmitted at high voltages in the National Grid.</p>