Year 10: ASK Yourself!

Subject: Physics
Unit: 2 - Electricity

	Launching 1-2	Developing 3-4	Progressing 5-6	Mastering 7-9
Skills				
	To be able to set up a circuit to investigate the relationship between V, I and R for a fixed resistor. To be able to identify live, neutral and earth wires by their colour-coded insulation.	To be able to set up a circuit to investigate the relationship between V, I and R for a range of electrical components. To be able to explain why a live wire may be dangerous even when a switch in the main circuit is open.	To be able to draw I-V graphs for a fixed resistor and other components. To be able to explain the dangers of providing any connection between the live wire and earth or our bodies.	To be able to analyse and interpret I-V graphs for a fixed resistor and other components. To be able to use I-V graphs to determine if the characteristics of components are ohmic or nonohmic.
Knowledge				
	To be able to recall that an electric current is a flow of electrical charge and is measured in amperes (A). To be able to recall that the current through a component depends on the resistance of the component and the potential difference across it. To be able to understand that everyday electrical appliances bring about energy transfer. To be able to recall that power is measured in watts (W) and 1 kW = 1000 W.	To be able to remember that charge is measured in coulombs (C) and recall and use the equation Q = It. To be able to recall and apply the equation V = IR and for series circuit R total = R1 + R2. To be able to recall and use the equation energy transferred E = Pt. To be able to recall and use the equation P = V × I. To be able to recall that the National Grid is a system of cables and transformers linking power stations to consumers.	To be able to remember the concept that current is the rate of flow of charge. Rearrange and apply the equation Q = It. To be able to recall and apply the equation V = IR and for series circuit R total = R1 + R2 and for parallel circuits 1/R total = 1/R1 + 1/R2. To be able to recall and apply the equation energy transferred E = QV. To be able to describe how step-up and stepdown transformers change the potential difference in the National Grid.	To be able to explain the concept that current is the rate of flow of charge. Rearrange and apply the equation Q = It. To be able to explain the effect of adding more resistors to series and parallel circuits. To be able to recall, use and rearrange the equations P=VI and $P=I^2R$. To be able to explain why electrical power is transmitted at high voltages in the National Grid.