Year 8: ASK Yourself!

Subject: Science
Unit 8.5: Magnetism and electricity

	Launching 1-2	Developing 3-4	Progressing 5-6	Mastering 7-9
Skills				
	I need to be able to draw a circuit diagram to show how voltage can be measured in a simple circuit.	I can partially compare the advantages of series and parallel circuits for particular uses. I can partially suggest ways to reduce the risk of getting electrostatic shocks.	I can confidently calculate resistance using the formula: resistance (Ω) = potential difference (V) ÷ current (A). I can confidently draw conclusions about safety risks, from data on voltage, resistance and current.	I can expertly predict the effect of changing the rating of a battery or a bulb on other components in a series or parallel circuit. I can expertly critique the design of a device using an electromagnet and suggest improvements.
Knowledge				
	I need to know that two 'like' magnetic poles repel and two 'unlike' magnetic poles attract. I need to know that the magnetic field of an electromagnet decreases in strength with distance. I need to know that two similarly charged objects repel, two differently charged objects attract.	I partially know that field lines flow from the north-seeking pole to the south-seeking pole. I partially know that the stronger the magnet, and the smaller the distance from it, the greater the force a magnetic object in the field experiences.	I confidently know how to use the idea of field lines to show how the direction or strength of the field around a magnet varies. I confidently know how to use the idea of energy to explain how voltage and resistance affect the way components work.	I understand and can apply diagrams to explain how an electromagnet can be made and how to change its strength. I understand and can apply an analogy like water in pipes to explain why part of a circuit has higher resistance.