

# Year 10: ASK Yourself!

Subject: Physics

Unit: 7 – Electromagnetism

	Launching 1-2	Developing 3-4	Progressing 5-6	Mastering 7-9
<b>S</b> kills				
	<p>To be able to plot the magnetic field around a bar magnet.</p> <p>To be able to draw the magnetic field around a conducting wire and a solenoid.</p>	<p>To be able to describe the motor effect that applies to a current-carrying conductor in a magnetic field.</p> <p>To be able to recognise how size of the induced p.d. can be increased by increasing the speed of movement or by increasing the strength of the magnetic field.</p>	<p>To be able to describe the motor effect that applies to a current-carrying conductor in a magnetic field.</p> <p>To be able to draw graphs of potential difference generated in the coil against time.</p> <p>To be able to manipulate equations.</p>	<p>To be able to explain Fleming's left-hand rule.</p> <p>To be able to use the equation <math>F = BIL</math> to calculate the force on a conductor.</p> <p>To be able to describe how to draw and interpret graphs of potential difference generated in the coil against time.</p> <p>To be able to use and apply the expression <math>V_p/V_s = n_p/n_s</math>.</p>
<b>K</b> nowledge				
	<p>To be able to recall that like poles repel, unlike poles attract.</p> <p>To be able to state how the strength of an electromagnet can be increased.</p> <p>To be able to state that a force acts on a current-carrying conductor in a magnetic field.</p> <p>To be able to state what the</p>	<p>To be able to state what the generator effect is and that a dynamo generates DC and an alternator generates AC.</p> <p>To be able to recognise that the poles of a magnet are the places where the magnetic forces are strongest</p> <p>To be able to describe that</p>	<p>To be able to recognise a magnetic field.</p> <p>To be able to explain what the size of a force on a conductor depends on.</p> <p>To be able to describe how when the p.d. is increased the current decreases for the same power transmitted.</p> <p>To be able to explain how</p>	<p>To be able to explain that an induced magnet is only magnetic when it is in a magnetic field.</p> <p>To be able to explain that if the direction of motion of the conductor or the polarity of the magnetic field is reversed, the direction of the induced potential difference and</p>

	<p>generator effect is.          To be able to state that a dynamo generates d.c. and an alternator generates a.c.          To be able to state what a basic transformer is and the difference between step-up and step-down.          To be able to state that high p.d. are used to reduce power transmission losses.</p>	<p>when a coil is rotated in a magnetic field an alternating current is induced in the coil.          To be able to explain how the potential differences across the two coils depend on the number of turns on each coil and how the potential difference is induced.</p>	<p>electromagnets are used.          To be able to explain the behaviour of a magnetic compass.          To be able to explain how electromagnets are used in devices.</p>	<p>any induced current is reversed.          To be able to explain generator effect &amp; use in a dynamo to generate d.c. with the use of commutator; and is used in an alternator to generate a.c.          To be able to explain how power transmission losses are related to the square of the current.</p>
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