

# Yr13 Physics – Unit 7.3

## MAGHULL HIGH SCHOOL – CURRICULUM MAP



	Sequence				
<b>TOPIC (S)</b> <b>Magnetic Fields</b>	1. Magnetic Flux Density 2. Required Practical 10: Force on a Wire 3. Moving Charges in a Magnetic Field	4. Magnetic Flux and Flux Linkage 5. Required Practical 11: Magnetic Flux Linkage at Angles	6. Electromagnetic induction 7. Alternating Currents 8. The operation of a transformer		
<b>Knowledge &amp; Skills development</b>	<ul style="list-style-type: none"> <li>Determine the force on a current carrying wire in a magnetic field</li> <li>Apply Fleming's left hand rule</li> <li>Investigate how the force on a wire varies with flux density, current and length of wire using a top pan balance</li> <li>Describe and explain the effect of a magnetic field on a moving charge including the direction of the force for both positive and negative</li> <li>Define and calculate magnetic flux and flux linkage</li> <li>Investigate, using a search coil and oscilloscope, the effect on magnetic flux linkage of varying the angle between a search coil and magnetic field direction</li> </ul>		<ul style="list-style-type: none"> <li>State Faraday's and Lenz's laws and use them to explain simple experimental phenomena</li> <li>Calculate the induced emf in a coil rotating uniformly in a magnetic field</li> <li>Calculate the peak and peak-to-peak voltage of mains electricity supply</li> <li>Use of an oscilloscope to measure time intervals and frequencies, and to display ac waveforms</li> <li>Explain the operation of a transformer</li> <li>Explain the causes of inefficiencies in a transformer</li> <li>Describe transmission of electrical power at high voltage including calculations of power loss in transmission lines</li> </ul>		
<b>Assessment / Feedback Opportunities</b>	Exam questions – teacher assessed	Exam questions – self assessed	Extended writing task – teacher assessed	Deep marking of required practical in lab books	Topic assessment
<b>Cultural Capital</b>	•				
<b>SMSC / Promoting British Values</b> (Democracy, Liberty, Rule of Law, Tolerance & Respect)	• •				
<b>Reading opportunities</b>	• Recommended Read: Magnetism: A Very Short Introduction (Very Short Introductions) – 28 Jun 2012 by Stephen J. Blundell (Author)				
<b>Key Vocabulary</b>	Independent Variable, Dependent Variable, Control Variables, Method, Conclusion, Precaution, Evaluation, Reliable, Precision, Valid, Anomaly, Describe, Explain, Compare, Analyse, Calculate, Suggest, Absolute, Uncertainty, Error Flux, Density, Linkage, Phenomena, Induce, Induction, Charge, Field, Efficiency, Oscilloscope, Centripetal Force, Root-Mean-Square, Alternating, emf				
<b>Digital Literacy</b>	The use of excel to plot graphs and analyse data MSOffice365 apps including SharePoint				
<b>Cross-Curricular Links</b>	Numeracy/Maths – averages (means), reading scales, graph plotting, lines of best fit, using and rearranging equations, using scientific calculators				
<b>Careers</b>	Engineer, Electrical Engineer				