

# Yr12 Physics – Unit 5

## MAGHULL HIGH SCHOOL – CURRICULUM MAP



	Sequence				
<b>TOPIC (S)</b> <b>Electricity</b>	1. Basics of Electricity 2. Current-voltage characteristics 3. Resistivity 4. Resistivity Required Practical		5. Resistance 6. Power 7. Potential Divider		8. EMF and Internal Resistance 9. EMF and Internal Resistance Required Practical
<b>Knowledge &amp; Skills development</b>	<ul style="list-style-type: none"> <li>Definitions and calculations involving current, potential difference and resistance</li> <li>I-V characteristics and explanations for semiconductor diodes, filament lamps and fixed resistors</li> <li>Definitions and applications of superconductors and semiconductors</li> <li>Definition and calculations involving resistivity</li> <li>Description of the qualitative effect of temperature on the resistance of metal conductors and thermistors</li> <li>Determination of resistivity of a wire using a micrometer, ammeter and voltmeter</li> </ul>			<ul style="list-style-type: none"> <li>The relationships between currents, voltages and resistances in series and parallel circuits, including cells in series and identical cells in parallel</li> <li>Conservation of charge and conservation of energy in dc circuits.</li> <li>The use of variable resistors, thermistors, and light dependent resistors (LDR) in the potential divider</li> <li>Understand and perform calculations for circuits in which the internal resistance of the supply is not negligible</li> <li>Investigation of the emf and internal resistance of electric cells and batteries by measuring the variation of the terminal pd of the cell with current in it.</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: Electricity Demystified, Second Edition by Stan Gibilisco				
<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 Current, Voltage, Resistance, Resistivity, Semiconductor, Superconductor, Thermistor, Characteristic, Diode, Series, Parallel, Conservation, Negligible, Electromotive Force, Terminal				
<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 Engineering				
<b>Careers</b>	Electrical Engineering, Electrician				