

Physics Overview – Combined Science

Year 11						
	Half Term 1	Half Term 2	Half Term 3	Half Term 4	Half Term 5	Half Term 6
Topic	· Energy · Forces and their Effects	· Electricity	· Magnetism and the Motor Effect	· Electromagnetic induction	· Particle Model · Forces and Matter	
Key concept	<b>Energy</b>	<b>Forces and Fields</b>	<b>Forces and Fields</b>	<b>Forces and Fields</b>	<b>Matter and Materials</b>	
Learning Objectives	<ul style="list-style-type: none"> <li>· State that forces can transfer energy.</li> <li>· Calculate power and work done.</li> <li>· Describe how objects interact with other objects.</li> <li>· Use vector diagrams to work out the effects of forces on an object.</li> </ul>	<ul style="list-style-type: none"> <li>· Describe current, charge and potential difference.</li> <li>· Calculate resistance, power and energy transferred.</li> <li>· Explain safety features in homes.</li> <li>· Explain earthing and its importance.</li> </ul>	<ul style="list-style-type: none"> <li>· Describe a magnetic field.</li> <li>· Describe the magnetic field around a current in a wire and the factors that affect it.</li> <li>· Show how the fields from the individual coils in a solenoid interact.</li> <li>· Use Fleming's left-hand rule.</li> </ul>	<ul style="list-style-type: none"> <li>· State that a current is produced using a magnet and a conductor.</li> <li>· Describe the factors that affect the size and direction of an induced potential difference.</li> <li>· Describe the UK domestic electricity supply.</li> <li>· calculate the current and voltage used by a transformer.</li> </ul>	<ul style="list-style-type: none"> <li>· Define density.</li> <li>· Calculate specific heat capacity and specific latent heat.</li> <li>· Describe how temperature and volume of a gas affects the pressure.</li> <li>· Describe elastic and inelastic distortion.</li> <li>· Calculate extension and spring constant.</li> </ul>	
Scaffolding SEND	glossaries, targeted questions, knowledge organisers, recall quizzes	glossaries, targeted questions, knowledge organisers, recall quizzes	glossaries, targeted questions, knowledge organisers, recall quizzes	glossaries, targeted questions, knowledge organisers, recall quizzes	glossaries, targeted questions, knowledge organisers, recall quizzes	
Key Vocabulary	gravitational field, electrostatic field, resultant force	current, voltage, resistance, potential difference, diode,	induced magnet, solenoid, electromagnet, transformer	kinetic energy, sublimation, density, specific	absolute zero, Kelvin scale	

		light dependent resistor		heat capacity, specific latent heat		
Formative Assessment	6 mark question with teacher feedback	6 mark question with teacher feedback	6 mark question with teacher feedback	6 mark question with teacher feedback	6 mark question with teacher feedback	
Summative Assessment	End of unit test	End of unit test	End of unit test	End of unit test	End of unit test	
Careers	sports scientist, robotist, aeronautical engineer	lab technician, telecoms technician	geoscientist, kinesiologist	robotist, aeronautical engineer	Forensic scientist, lab technician, geoscientist	
Links	To build on energy stores and transfers.  To prepare for resultant forces.	To build on conductors and insulators.  To prepare for series and parallel circuits.	To build on plotting a magnetic field.  To prepare for electromagnetic induction.	To build on electromagnets.	To build on states of matter and particle arrangement in solids, liquids and gases.	