

Physics Long Term Programme of Study Year 10 2021-2022

Temperance Term

W/C	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	HALF TERM
Area of Study	P2- Electricity							
Core Learning	<p>-Describe how to calculate resistance and the factors which can alter it. Describe how electricity is delivered to our homes and businesses.</p> <p>-Recognise standard circuit symbols</p> <p>-MS 3b,c Calculate charge flow and potential difference</p> <p>-RP 3 Investigate the factors affecting the resistance of electrical circuits</p> <p>-Draw and interpret resistance graphs for lamps, diodes, thermistors and LDRs.</p> <p>-RP4 Investigate I-V characteristics of a variety of circuit components</p> <p>-Describe the differences between series and parallel circuits</p> <p>-Explain the difference between direct and alternating potential difference</p> <p>-Identify the wires in a plug</p> <p>-Explain why the National Grid system is an efficient way to transfer energy</p>							
Opportunities for Challenge	Conduct multi step calculations							
Assessment	End of Topic Test							

W/C	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13	CHRISTMAS
Area of Study	P5 – Forces						



Physics Long Term Programme of Study Year 10 2021-2022

Core Learning	<p>-Identify and measure forces acting on objects</p> <p>-Describe the differences between contact and non-contact forces.</p> <p>-MS 3b,c Calculate weight and work done</p> <p>-MS1c, WS 4.5 Convert between newton-meters and joules</p> <p>-RP6 Investigate the link between force and extension with springs.</p> <p>-MS 3c Describe a moment as a turning force and be able to calculate moment using force and distance.</p>	
Opportunities for Challenge	Use force-extension graphs to calculate elastic potential energy	
Assessment	End of Topic Test	

Physics Long Term Programme of Study Year 10 2021-2022

Justice Term

W/C	Week 14	Week 15	Week 16	Week 17	Week 18	Week 19	HALF TERM
Area of Study	P5 – Forces						
Core Learning	<p>-Identify and measure forces acting on objects</p> <p>-Express a displacement in terms of magnitude and direction</p> <p>-MS 3b, c Calculate speed using distance travelled and time</p> <p>-Draw and interpret velocity time graphs</p> <p>-Apply Newton's Laws</p>						
Opportunities for Challenge	Determine speed, acceleration and distance from multiple graphs using mathematical tools such as area under line and gradient.						
Assessment	End of Topic Test						

W/C	Week 20	Week 21	Week 22	Week 23	Week 24	Week 25	EASTER
Area of Study	P6 – Waves						
Core Learning	<p>Show how changes in velocity, frequency and wavelength, in transmission of sound waves from one medium to another, are inter-related</p> <p>-WS 1.2 Describe the difference between longitudinal and transverse waves</p> <p>-Describe wave motion, including wave length and frequency</p> <p>-RP8 Measure the frequency, wavelength and speed of waves in a ripple tank</p>						
Opportunities for Challenge	Evaluate evidence that, for both ripples on a water surface and sound waves in air, it is the wave and not the water or air itself that travels.						



Physics Long Term Programme of Study Year 10 2021-2022

Assessment	End of Topic Test	
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Physics Long Term Programme of Study Year 10 2021-2022

Courage Term

W/C	Week 26	Week 27	Week 28	Week 29	Week 30	Week 31	HALF TERM
Area of Study	P6 – Waves				Revision		
Core Learning	<p>Show how changes in velocity, frequency and wavelength, in transmission of sound waves from one medium to another, are inter-related</p> <p>-Provide examples of transfers of energy by electromagnetic waves</p> <p>- Explain the uses and dangers of electromagnetic waves.</p>						
Opportunities for Challenge	Explain that a perfect black body is an object that absorbs all of the radiation that hits it. No radiation is reflected or transmitted.						
Assessment	End of Topic Test						

W/C	Week 32	Week 33	Week 34	Week 35	Week 36	Week 37	SUMMER
Area of Study	Year 10 Mock Exams		P8 - Space Physics				
Core Learning			<p>-Explain the evidence for the expanding universe and the life cycle of a star</p> <p>-Describe and explain the life cycle of stars, including the idea of fusion</p> <p>-Explain how the size of the orbit depends on the objects speed.</p> <p>-Explain the red shift and how it provides evidence for the Big Bang model</p>				
Opportunities for Challenge			Explain the red shift and how evidence suggests the whole universe appears to be expanding				
Assessment			End of Topic Test				