

Physics Long Term Programme of Study Year 10

Temperance Term

W/C	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	HALF TERM
Area of Study	P4 Atomic Structure			P5 – Forces				
Core Learning	P4 – Describe the structure of the atom, the nuclear forces and atom stability. -Describe the structure of the atom, with reference to atomic number and mass number -Describe the discovery of the electron led to the plum pudding model of the atom. The plum pudding model suggested that the atom is a ball of positive charge with negative electrons embedded in it. -Describe the properties of alpha, beta and gamma radiation -Use nuclear equations to represent radioactive decay -Calculate half life -Describe the sources of radiation and their dangers and uses			-Identify and measure forces acting on objects -Describe the differences between contact and non-contact forces. -MS 3b,c Calculate weight and work done -MS1c, WS 4.5 Convert between newton-meters and joules -RP6 Investigate the link between force and extension with springs. -MS 3c Describe a moment as a turning force and be able to calculate moment using force and distance.				
Opportunities for Challenge	P4 - Compare and contrast isotopes using the correct nomenclature.			Use force-extension graphs to calculate elastic potential energy				
Assessment	End of Topic Test			End of Topic Test				

W/C	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13	CHRISTMAS
Area of Study	P5 – Forces						
Core Learning	-Identify and measure forces acting on objects -Express a displacement in terms of magnitude and direction -MS 3b, c Calculate speed using distance travelled and time -Draw and interpret velocity time graphs -Apply Newton's Laws						
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 and Temperance Term Assessment						

Physics Long Term Programme of Study Year 10

Justice Term

W/C	Week 14	Week 15	Week 16	Week 17	Week 18	Week 19	HALF TERM
Area of Study	P5 – Forces			P6 – Waves			
Core Learning	<ul style="list-style-type: none"> -Identify and measure forces acting on objects -Express a displacement in terms of magnitude and direction -MS 3b, c Calculate speed using distance travelled and time -Draw and interpret velocity time graphs -Apply Newton's Laws 			<p>Show how changes in velocity, frequency and wavelength, in transmission of sound waves from one medium to another, are inter-related</p> <ul style="list-style-type: none"> -WS 1.2 Describe the difference between longitudinal and transverse waves -Describe wave motion, including wave length and frequency -RP8 Measure the frequency, wavelength and speed of waves in a ripple tank 			
Opportunities for Challenge	Determine speed, acceleration and distance from multiple graphs using mathematical tools such as area under line and gradient.			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.			
Assessment	End of Topic Test			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> <ul style="list-style-type: none"> -Provide examples of transfers of energy by electromagnetic waves - Explain the uses and dangers of electromagnetic waves. 						
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 and Justice Term Assessment						

Physics Long Term Programme of Study Year 10

Courage Term

W/C	Week 26	Week 27	Week 28	Week 29	Week 30	Week 31	HALF TERM
Area of Study	P7 Magnetism and Electromagnetism				Revision		
Core Learning	P7-Explain how electromagnetic effects are used in a variety of devices -Describe the differences between permanent and induced magnetism Draw the magnetic field pattern of a bar magnet -Describe how the magnetic effect of a current can be demonstrated						
Opportunities for Challenge	P7 - Show that Fleming's left-hand rule represents the relative orientation of the force, the current in the conductor and the magnetic field						
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			-Explain the evidence for the expanding universe and the life cycle of a star -Describe and explain the life cycle of stars, including the idea of fusion -Explain how the size of the orbit depends on the objects speed. -Explain the red shift and how it provides evidence for the Big Bang model				
Opportunities for Challenge			Explain the red shift and how evidence suggests the whole universe appears to be expanding				
Assessment			End of Topic Test				