Physics Learning Journey Year 10

Autumn Term

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	
Topic	**P3 Particle Model of Matter**					**P4 Atomic Structure**			HALF TERM
Challenge Objective and Content (for all learners)	**P3 – Use the particle model to predict the behaviour in solids, liquids and gases.** -Students should be able to explain the differences in density between the different states of matter in terms of the arrangement of atoms or molecules. -RP5 Determine the densities of regular and irregular objects and liquids. -MS 1a, 3b,c,d, Calculate change in thermal energy using specific heat capacity.					**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.			
Inspire Opportunities	P3 - Explain the differences in density between the different states of matter in terms of the arrangement of atoms or molecules.					P4 - Compare and contrast isotopes using the correct nomenclature.			
Assessment Opportunities	End of Topic Tests								

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	
Topic	**P5 Forces**						CHRISTMAS
Challenge Objective and Content (for all learners)	**P5 -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. -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.						
Inspire Opportunities	P5 - Determine speed, acceleration and distance from multiple graphs using mathematical tools such as area under line and gradient.						

Physics Learning Journey Year 10

Assessment Opportunities	End of Topic Tests and Autumn Term Assessment	

Spring Term

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	
Topic	**P5 Forces**						HALF TERM
Challenge Objective and Content (for all learners)	**P5 -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. -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.						
Inspire Opportunities	P5 - Determine speed, acceleration and distance from multiple graphs using mathematical tools such as area under line and gradient.						
Assessment Opportunities	End of Topic Tests						

	Week 1	Week 2	Week 3	Week 4	Week 5	
Topic	**P6 – Waves**					EASTER
Challenge Objective and Content (for all learners)	**Show how changes in velocity, frequency and wavelength, in transmission of sound waves from one medium to another, are inter-related** -Provide examples of transfers of energy by electromagnetic waves - Explain the uses and dangers of electromagnetic waves.					
Inspire Opportunities	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 Opportunities	End of Topic Tests and Spring Term Assessment					

Physics Learning Journey Year 10

Summer Term

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	
Topic	**P6 – Waves**		**Revision**				HALF TERM
Challenge Objective and Content (for all learners)	**Show how changes in velocity, frequency and wavelength, in transmission of sound waves from one medium to another, are inter-related** -Provide examples of transfers of energy by electromagnetic waves - Explain the uses and dangers of electromagnetic waves.		**Physics Paper 1 Revision** P1 Energy P2 Electricity P3 Particle Model of Matter P4 Atomic Structure		**Year 10 Mock Exams**		
Inspire Opportunities	Explain that a perfect black body is an object that absorbs all of the radiation that hits it. No radiation is reflected or transmitted.		Grade 7-9 questions.				
Assessment Opportunities	End of Topic Tests and Year 10 Mock Exam						

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	
Topic	**P6 – Waves**						SUMMER
Challenge Objective and Content (for all learners)	**Show how changes in velocity, frequency and wavelength, in transmission of sound waves from one medium to another, are inter-related** -Provide examples of transfers of energy by electromagnetic waves - Explain the uses and dangers of electromagnetic waves.						
Inspire Opportunities	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 Opportunities	End of Topic Tests						