Year 10 Curriculum Overview [2022-2023]
Subject – Separate Science - Physics

Autumn Term	Knowledge & Understanding			Literacy Skills Opportunities for developing literacy skills	Employability Skills [if any]	Assessment Opportunities
	Composites	**Components** [includes understanding of KEY concepts & subject specific vocab]	**Formal Retrieval** [if any]			
HT1	P1 Motion	• Vectors and scalars • Distance/time graphs • Acceleration • Velocity/time graphs	• Y9 review • D-T graphs • Speed Equation • Resultant Forces Acceleration	• Keywords map Extracting data	• Engineers – Car design • Crash investigators	
	P2 Motion and forces	• Resultant Forces • Newton's Laws of Motion • Investigating acceleration • Momentum • Stopping distance • Braking distance and energy • Crash Hazards	• P1 Acceleration calculations • Y9 review • Resultant Forces • Acceleration	• Extracting data • Explanations that include application of Newton's Laws	• Engineers – Car design • Crash investigators	
HT2	P3 Conservation of Energy	• Energy Stores and transfers • Energy efficiency • Keeping warm • Stored energies • Non-renewable resources • Renewable resources	• Physics Formula Recall • Particle Theory • Energy stores review	• Description of changes of energy	• Energy Production • Insulation installation • Nuclear Power • Structural engineer	**Assessment point 1** P1-2 Motion and forces
	P4 Waves	• Describing waves • Wave speeds • Investigating waves	• Y8 review • Light • Y7 review • Sound	• 6-mark question on refraction	• Sound engineer • Game audio implementor	

		• Refraction • Waves crossing boundaries • Ears and hearing • Ultrasound • Infrasound			• Studio engineer/producer • Audiologist	

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Spring Term	Knowledge & Understanding			Literacy Skills Opportunities for developing literacy skills	Employability Skills [if any]	Assessment Opportunities
	Composites	**Components** [includes understanding of KEY concepts & subject specific vocab]	**Formal Retrieval** [if any]			
HT3	P5 Light and the Electromagnetic Spectrum	• Ray diagrams • Investigating refraction • Colour • Lenses • Electromagnetic waves • The electromagnetic spectrum • Using the long wavelengths • Radiation and temperature • Investigating radiation • Using the short wavelengths • EM Radiation Dangers	• KS3 Review • Sound • Light • P4 Wave Properties • P4 Refraction	Comparisons of different waves.	• Astronauts • Radiology technicians • Nuclear power plant	**Assessment Point 2** Class Teacher Assessment on last and current topic
	P6 Radioactivity	• Atomic models • Inside atoms	• KS3 review • C3 Structure of the atom	• Extended writing: • How evidence has changed the atomic model over time.	• Nuclear Engineer • Decommissioning	
HT4	P6 Radioactivity	• Electrons and orbits • Background radiation • Types of radiation • Radioactive decay • Half-life	• KS3 review • C3 Structure of the atom	• Explain how measurements of background radiation help make results valid	• Nuclear Engineer • Decommissioning • Radiologist	

		• Using radioactivity • Dangers of radioactivity • Radioactivity in medicine • Nuclear energy • Nuclear fission • Nuclear fusion		• Describe the processes of nuclear fission and fusion • Explain how different precautions improve safety when working with radiation. • Key terminology: irradiation vs contamination, fission vs fusion		
	P7 Astronomy	• The Solar System • Gravity and orbits • Life cycles of stars • Red-shift • Origins of the Universe	• Calculating speed	• Life of a star • Comparison of the big bang theory with steady state theory.	• Astronomer • Atmospheric Scientists • Aerospace engineer • Mechanical engineer • Physicist	

Year 10 Curriculum Overview [2022-2023] Subject – Separate Science - Physics						
Summer Term	**Knowledge & Understanding**			**Literacy Skills** **Opportunities for developing literacy skills**	**Employability Skills** **[if any]**	**Assessment Opportunities**
	Composites	**Components** **[includes understanding of KEY concepts & subject specific vocab]**	**Formal Retrieval** **[if any]**			
HT5	P7 Astronomy	• The Solar System • Gravity and orbits • Life cycles of stars • Red-shift • Origins of the Universe	• P1-2 Calculating speed • KS3 review • Earth and Space	• Life of a star • Comparison of the big bang theory with steady state theory.	• Astronomer • Atmospheric Scientists • Aerospace engineer • Mechanical engineer • Physicist	
	EXAM PREPARATION PAPER 1					**Assessment point 3** Mock Examination Physics Paper 1
HT6	P8 Energy-forces doing work, P9 Forces and their effects	• Work and power • Objects affecting each other • Vector diagrams • Rotational forces	• P3 Energy • Physics formula • Calculations	• Key terminology	• Structural Engineering • Personal Trainer • Aerospace engineer	