Physics Overview – Combined Science

Year 10										
	Half Term 1	Half Term 2	Half Term 3	Half Term 4	Half Term 5	Half Term 6				
Topic	· Waves	· Light and the Electromagnetic Spectrum	· Conservation of Energy	· Radioactivity	· Motion	· Motion and Forces				
Key concept	Energy	Energy	Energy	Matter and Materials	Forces and Fields	Forces and Fields				
Learning Objectives	· State that waves transfer energy and information. · Describe the characteristics of waves. · Explain methods for calculating the speed of waves.	· Explain reflection and refraction. · Describe forms of radiation we cannot see identifying their uses and dangers.	 Describe ways in which energy can be transferred and stored. State ways of reducing energy transfers. Discuss renewable and non-renewable resources. 	· Describe atomic structure. · State the effect different types of radiation have on atoms. · Describe the uses and dangers of radiation.	 Identify scalar and vector quantities. Calculate speeds and accelerations. 	· Describe Newton's Laws of Motion · Describe factors that affect stopping distances.				
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	glossaries, targeted questions, knowledge organisers, recall quizzes				
Key Vocabulary	transverse, longitudinal, period, frequency, amplitude, wavelength	refraction, reflection, interface	chemical, thermal, strain, kinetic, gravitational potential, dissipated, conduction, convection, radiation	alpha particles, beta particles, gamma rays, isotopes, nucleons, ionisation, Geiger- Muller tube	Vectors, scalars, displacement, acceleration, deceleration	Vectors, scalars, displacement, acceleration, deceleration				
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	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	End of unit test
	neuroscientist,	neuroscientist,	robotist,	Forensic scientist,	robotist,	robotist,
Careers	· · · · · · · · · · · · · · · · · · ·	·	· ·	,	*	,
	optician, urologist,	optician, urologist,	aeronautical	lab technician,	aeronautical	aeronautical
	telecoms technician	telecoms technician	engineer	geoscientist	engineer, sports	engineer, sports
					scientist	scientist
Links	To build on light	To build on light	To build on	To build on atomic	To build on	To build on
	and sound waves.	transfers energy.	conduction,	structure.	balanced and	balanced and
			convection, and		unbalanced forces.	unbalanced forces.
	To prepare for the	To prepare for	radiation.	To prepare for		
	light spectrum.	absorption and		nuclear fuel being a	To prepare for	To prepare for
		reflection.	To prepare for	non-renewable	resultant forces,	resultant forces. In
			energy stores and	energy resource.	energy stores and	addition, energy
			transfers.		transfers.	stores and transfers.