Curriculum Map Year 10 Combined Science - Physics

Topic Name	**Term**	**Skills** developed with link to NC Subject content	Reflection on previous link in the curriculum	Progress to future link in the curriculum
Energy	*Autumn HT1*	**Understanding of:** ● Gravitational potential, kinetic and elastic potential energy ● Work done and energy transfers ● Power ● Specific heat capacity ● Energy dissipation ● Efficiency ● Reducing unwanted energy transfers in a system ● Energy resources and global energy supplies	Year 8: Energy ● What is energy ● Energy stores and transfers ● Gravitational potential energy ● kinetic energy ● Work done	HT2: Particle model of matter ● Specific heat capacity Year 11: Forces ● Forces and energy in springs ● Kinetic energy and momentum
Particle Model of Matter	*Autumn HT2*	**Understanding of:** ● Density ● Measuring density of regular and irregular shapes ● Changes of state ● Internal energy ● Specific heat capacity ● Specific latent heat ● Particle motion in gases	Year 9: Particle model of matter topic ● Density ● States of matter and changes in state ● Specific heat capacity ● Specific latent heat	Year 13: Thermal physics ● Specific heat capacity ● Specific latent heat ● Pressure of an ideal gas
Atomic Structure	*Spring HT3*	**Understanding of:** ● Atomic structure and the history of the atom ● Background radiation ● The types of radioactive decay ● Nuclear equations (transmutations) ● Radioactive half-life ● Hazards and uses of radiation ● Irradiation	Year 9: Atomic structure topic: ● The atom ● History of the atom and plum pudding ● Three types of radiation ● decay equations ● half-life	Year 12: Particles and radiation ● Atomic structure ● Stable and unstable nuclei (alpha, beta-minus and beta-plus decay)
Electricity	*Spring HT4*	**Understanding of:** ● Circuit symbols and drawing electric circuits ● Key terms and definitions ● Electricity equations ● Series and parallel circuits ● Investigating circuits components ● I-V graphs for fixed resistor, filament lamp and diode ● The effect of length of a wire on resistance ● Electricity in the home ● Transmitting electricity ● Power and energy transfers	Year 7: Electricity ● Building circuits and measuring current ● Series and parallel circuits ● The test circuit - finding resistance ● Maths skills in V=IR and Q=It	Year 11: Electromagnetism ● Electromagnets ● Electric motors Year 12: Electricity ● Circuit diagrams ● Current, p.d. and resistance ● I-V graphs ● Power and electrical energy ● Resistivity of a wire
Reflection and preparation for end of year assessments	*Summer HT5*	Recap and reflection on content learnt during the year Exam question focus Application question focus Mathematical skills focus Scientific skills focus		

Waves	*Summer HT6*	**Understanding of:** ● Describing and labelling waves ● Longitudinal and transverse waves ● Measuring wave speeds ● Reflection and refraction, including wave fronts ● The electromagnetic spectrum ● Explaining the parts of the electromagnetic spectrum	Year 8: Waves ● What is a wave? ● Longitudinal waves ● Transverse waves and light ● Properties of waves ● Electromagnetic spectrum ● Maths skills in the wave speed	Year 12: Waves ● Progressive waves ● Wave speed ● Transverse and longitudinal ● Diffraction ● Refractive index ● Critical angle and TIR