



Year 13 PHYSICS

Subject and Year Group	Autumn Year 11	Autumn 2 Year 11	Spring 1 Year 11	Spring 2 Year 11	Summer 1 Year 11	Summer 2 Year 11
Topic/Unit to be studied	19 Thermal Physics 20 Gases 17 Motion in a circle 18 Simple Harmonic Motion	21 Gravitational Fields 22 Electric Fields 26 Radioactivity	23 Capacitors 27 Nuclear Physics 28.1 Astrophysics (Telescopes)	24 Magnetic Fields 25 Electromagnetic induction 28.2 Astrophysics (Stars) 28.3 Astrophysics (Cosmology)		
Core Knowledge and skills	<ul style="list-style-type: none"> Internal energy Specific heat capacity and temperature changes Latent heat and changes of state The experimental and ideal gas laws RP8: Boyle's and Charles' laws Kinetic theory Describing circular motion Centripetal acceleration Applying ideas about circular motion Principles of SHM Describing SHM mathematically RP7: SHM in springs and pendulums Resonance 	<ul style="list-style-type: none"> Gravitational field strength & potential Applying Newton's law of gravitation Planetary fields and satellites Electric field strength and potential Coulomb's law Motion of charges in an electric field Comparing fields Discovery of the nucleus Types of radiation Theory of radioactive decay and calculating half life/activity RP12: radiation and the inverse square law Uses and dangers of radioactive decay Decay modes 	<ul style="list-style-type: none"> Capacitance Storing energy in capacitors RP9: Charge and discharge of a capacitor Dielectrics Energy and mass ($E = mc^2$) Binding energy and nuclear stability Fission and Fusion Lenses and ray diagrams Refracting and reflecting telescopes Non optical telescopes 	<ul style="list-style-type: none"> The motor effect Moving charges in B fields RP10: magnetic force Electromagnetic induction laws AC Generators RP11: Electromagnetic Induction Transformers Astronomical distances Stellar magnitudes Spectral classes and H-R diagrams Life Cycles of stars Doppler effect and Hubble's Law Big Bang theory and CMBR Exoplanets Quasars 		
Assessment	End of Unit assessment (MCQ/short answer/long answer) with interleaved content from previous units. Feedback on assessed practicals (in lab books)					