Key Stage 5

Subject: Physics

Intent

In Physics we aim to develop conscientious problem solvers who challenge themselves and the world around them. In our school, students will receive top class teaching and support to help them grow into the Physicists of tomorrow. Building on prior knowledge from GCSE, students will be able to explain basic Physics concepts in full, developing confidence using contextual examples and practice questions. Students will build their mathematical abilities and acquire practical skills through stimulating activities that will take them further in their studies of Physics. Students will gain access to a wide range of university courses, including Engineering, Medicine and Space and Earth Sciences.

Programme of study and assessment

	Autumn Term	Spring Term	Summer Term
Year 12	Working as a Physicist Mechanics Electric Circuits	Materials Waves and the particle nature of light	Further Mechanics Nuclear and Particle Physics Nuclear Radiation
Assessment	Year 12 Settling in Exam • Working as a Physicist End of Topic Tests Mechanics, including: • Free Fall • Projectile Motion • Newton's Laws of Motion • Terminal Velocity, etc. Electric Circuits, including: • Resistance and Resistivity • E.m.f and Internal Resistance • The Potential Divider, etc.	End of Topic Tests Materials, including: • Hooke's Law • The Young Modulus • Density, Upthrust and Viscosity, etc. Waves and the particle nature of light, including: • Polarisation of waves • Superposition and coherence • Diffraction gratings • The Photoelectric Effect, etc.	End of Topic Tests Further Mechanics, including: • 2D collisions • Impulse • Circular Motion, etc. Nuclear and Particle Physics • Particle Accelerators • Classification of Particles • Quarks, etc. Nuclear Radiation, including: • Exponential Law of Decay • Nuclear Fission and Fusion, etc. Year 12 Mock

			ALL YEAR 12 TOPICS TO BE INCLUDED
Year 13	Gravitational Fields Electric and magnetic fields Thermodynamics	Space Oscillations	Preparation for Exams
Assessment	<u>End of Topic Tests</u> Gravitational Fields, including: • Gravitational Fields, etc. Electric and magnetic fields, including: • Electric Fields • Capacitors • Electromagnetic Induction, etc. Thermodynamics, including: • Internal Energy, • Thermal Properties of Materials, • Ideal Gases • Black Body Radiators, etc.	<u>End of Topic Tests</u> Space, including: • Determining Astronomical Distances • H-R Diagrams • Doppler Effect, etc. Oscillations, including: • Simple Harmonic Motion • Free and Forced Oscillations, etc. <u>Year 13 Mock</u> ALL CONTENT TO BE ASSESSED	<u>End of Year Exams</u>