PHYSICS – Combined Science to Triple Award

GCSE Combined Science (taught to all students if Triple Science has not been opted for at GCSE). All three sciences are taught continuously throughout a term to ensure content is clearly sequenced and knowledge is built/interleaved.

Y10

Autumn Term

Particle model of matter: Changes of state and the particle model, RP Calculating the density of regular, irregular shapes and liquids, Internal energy and energy transfers, Particle model in pressure
Triple: Pressure changes in gases

Energy Stores and Transfers: Energy changes in a system, and the ways energy is stored before and after such changes, RP Investigating Specific Heat Capacity, Conservation and dissipation of energy, National and global energy resources
Triple: RP Investigating effectiveness of thermal insulators
Electricity: Current, potential difference and resistance, RP Investigating Resistance of the wire and Combinations of resistors, RP Investigating IV characteristics of lamp, diode and resistor, Series and parallel circuits, Domestic uses and safety, Energy transfers
Triple: Static electricity

Spring Term

Summer Term

Atomic structure : Atoms and isotopes, Atoms and nuclear radiation
Triple: Hazards and uses of radioactive emissions and of background radiation, Nuclear fission and fusion
Forces: Forces and their interactions, Work done and energy transfer, Forces and elasticity, RP Investigating the relationship between force and extension, Moments, Forces and motion, RP Investigating relationship between Force, mass and acceleration, Momentum
Triple: levers and gears, Pressure and pressure difference in fluids, Changes in momentum

Y11

Autumn Term

Forces continued
Waves: Waves in air, fluids and solids, RP Observing the suitability of equipment to measure wave speed, Electromagnetic waves, RP Investigate how infrared radiation is absorbed and radiated by different surfaces
Triple: Reflection of waves, RP investigate the reflection and refraction of light, Sound waves, Waves for detection, Lenses, Visible Light, Black body radiation

Spring Term

Electromagnetism: Permanent and induced magnetism, magnetic forces and fields, The Motor effect
Triple: Loud Speakers, Induced potential, transformers and the National Grid
Space Triple: Solar System; stability of orbital motions; satellites, Red shift.
Combined Science: Revision of Energy and Electricity

Summer Term

Class-specific revision and interventions
Energy, Electricity, Particles, Atomic Structure, Forces, Waves, Electromagnetism

Final Exams

KS5
Studying GCSE Science can lead you to a wide variety of courses at KS5.
Physics, Engineering, Maths, Further Maths, Accounting, Economics, Computer Science and Design Technology

PHYSICS SKILLS:
Physics stands out as an incredibly useful subject, and its benefits extend far beyond the classroom. In a rapidly advancing world, the skills and knowledge gained from studying Physics are more relevant than ever.
Critical Thinking: Physics challenges students to think critically and analytically, skills highly prized in any profession.
Problem Solving: The subject is all about solving complex problems, a transferable skill across numerous careers.