



Science

SCIENCE	Content
Year 10 HT 1 Year 10 HT 2	<p>Health matters; Communicable disease, viruses, bacteria, protists and fungi, human defence systems, vaccinations and antibiotics, discovery and the development of drugs.</p> <p>Chemical changes; Reactivity series, oxidation and reduction, production of salts, reactions with acids, strong and weak acids, electrolysis including half equations.</p> <p>Electricity; Circuit diagrams, resistors in series and parallel circuits, domestic use and safety, energy transfers in appliances and The National Grid</p>
Year 10 HT 3 Year 10 HT 4	<p>Coordination and control which includes homeostasis, the nervous system, the endocrine system, blood sugar control, diabetes, negative feedback, human reproduction, IVF and contraception. Those studying the Triple course will also learn about the brain, the structure and function of the eye and kidneys.</p> <p>Energy changes; Energy transfers during endothermic and exothermic reactions, reaction profiles, calculating energy changes. Those studying the Triple course will also learn about fuel cells.</p> <p>Sustainable development; Using the Earth's resources and obtaining potable water, alternative methods of extracting metals, life cycle assessment and recycling. Triple students also cover preventing corrosion, alloys, ceramics and composites, The Haber Process and NPK fertilisers.</p> <p>Forces; Contact and non-contact forces, resultant forces, work done and energy transfer, forces and elasticity, speed and displacement, uniform acceleration, Newton's laws, road safety and momentum. Triple students also learn about moments, levers and gears, pressure and pressure differences in fluids.</p>
Year 10 HT 5 Year 10 HT 6	<p>Genetics; Role of DNA, genes and chromosomes, DNA structure, The Human Genome Project, tracing human migration, meiosis, sexual and asexual reproduction, genetic crosses and genetic disorders.</p> <p>The rate and extent of chemical change; Calculating rates of reaction, factors affecting rates of reaction, collision theory and activation energy, catalysts, reversible reactions and dynamic equilibrium alongside Le Chatelier's principle.</p> <p>Hydrocarbons; Crude oil, alkanes, fractional distillation, cracking and alkenes, properties of hydrocarbons. Triple students also learn about alcohols, carboxylic acids, addition and condensation polymerisation, amino acids</p> <p>Waves; Properties of waves, reflection of waves and soundwaves, refraction, ultrasound, uses and properties of electromagnetic waves. Triple students will also cover visible light and black body radiation.</p>



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Year 11 HT 1	<p>Sustainable development; Using the Earth's resources and obtaining potable water, alternative methods of extracting metals, life cycle assessment and recycling. Triple students also cover preventing corrosion, alloys, ceramics and composites, The Haber Process and NPK fertilisers.</p> <p>Waves; Properties of waves, reflection of waves and soundwaves, refraction, ultrasound, uses and properties of electromagnetic waves. Triple students will also cover visible light and black body radiation.</p> <p>Ecology; Changing abiotic and biotic factors, competition, predator-prey cycle, population sizes, measuring population sizes, adaptation, cycling materials including carbon, decomposition, the changing landscape, global warming, waste management, investigating pollution and biodiversity. Triple students also learn about trophic levels and food production.</p>
Year 11 HT 2	<p>Chemical analysis; Pure substances, formulations, chromatography and gas testing. Triple students also learn about ion identification.</p>
Year 11 HT 3	<p>Electromagnetism; Permanent and induced magnetism, magnetic fields, the motor effect and Fleming's left hand rule. Triple students will also learn about loudspeakers, generator effect, transformers and the National Grid.</p> <p>The atmosphere; The Earth's early atmosphere, greenhouse gases and atmospheric pollutants.</p> <p>Triple students will also learn the following;</p> <p>Space; Our solar system, the life cycle of a star, red shift and orbital motion</p>
Year 11 HT 4	<p>During this half term students will focus on exam preparation. They will have the opportunity to revisit required practicals, practise their maths skills required for their exam papers and focus on content from the earlier part of the course.</p>
Year 11 HT 5	<p>During this half term students will continue to focus on exam preparation with a greater focus on past paper practice.</p>