Science

SCIENCE	Content
Year 10 HT 1	This term students will be learning the following: Chemical quantities and calculations; Balancing equations, relative formula mass, moles, amounts of substances in equations, concentrations of solutions. Students in the X population also cover titrations, percentage yield, atom economy, moles and volumes of gases. Electricity; Circuit diagrams, resistors in series and parallel circuits, domestic use and safety, energy transfers in appliances and The National Grid
Year 10 HT 2	This term students will be learning the following: Moving and changing materials; Osmosis, the digestive system including organs, optimum conditions for enzyme activity, the circulatory system including the heart and blood vessels, blood, coronary heart disease, lifestyle, how plants use minerals, the respiratory system. Students in the X population also cover the respiratory systems of other animal types. Chemical changes; the reactivity series, oxidation and reduction, reactions with acids, electrolysis including half equations.
Year 10 HT 3	This term students will be learning the following: Atomic structure (radiation); Atoms and isotopes, the development of the periodic table, radioactive decay and radiation, nuclear equations and half-life, contamination and irradiation. Students in the X population also cover nuclear fusion and fission. Energy changes; Energy transfers during endothermic and exothermic reactions, reaction profiles, calculating energy changes. Students in the X population will also cover fuel cells.
Year 10 HT 4	This term students will be learning the following: Coordination and control; homeostasis, the nervous system, the endocrine system, blood sugar control, diabetes, negative feedback, human reproduction, IVF, contraception. Students in the X population also cover the brain, the structure and function of the eye and kidney structure and function. 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, Le Chatelier's principle.
Year 10 HT 5	This term students will be learning the following: 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, momentum. 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.
Year 10 HT 6	This term students will be learning the following: Hydrocarbons; crude oil, alkanes, fractional distillation, cracking and alkenes, properties of hydrocarbons. Students in the X population also cover alcohols, carboxylic acids, addition and condensation polymerisation and amino acids

Science

SCIENCE	Content
Year 11 HT 1	This term students will be learning the following: Hydrocarbons; crude oil, alkanes, fractional distillation, cracking and alkenes, properties of hydrocarbons. Students in the X population also cover alcohols, carboxylic acids, addition and condensation polymerisation and amino acids Ecology: We will be learning about 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. Chemical analysis; Pure substances, formulations, chromatography and gas testing. Students in the X population also cover ion identification.
Year 11 HT 2	This term students will be learning the following: Electromagnetism; permanent and induced magnetism, magnetic fields, the motor effect, Fleming's left hand rule. Students in the X population also cover the principles behind transformers and loudspeakers. The atmosphere; The Earth's early atmosphere, greenhouse gases, atmospheric pollutants In preparation for the mocks students will also have the opportunity to revise Paper One content.
Year 11 HT 3	This term students will be learning the following: Sustainable development; using the Earth's resources and obtaining potable water, alternative methods of extracting metals, life cycle assessment and recycling.
Year 11 HT 4	This term students will have focused revision lessons covering identified areas of content where further support is required. These lessons will also include revisiting the required practicals and practising maths and extended writing skills. Students will also practise exam questions.
Year 11 HT 5	See Year 11 HT4