Curriculum Planning

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 7	Introduction to science Speed	Gravity Particle model	Separating mixtures Skeleton and muscles Cells in organisms	Potential difference and resistance in circuits Current	Acids and alkalis Metals and non-metals	Ecosystems and food chains Plant reproduction Careers in physics
	Trip to National Space centre *Links to environment, disruption to food webs, crop fertilisation, circuits at home, astronomy, chemicals at home and safe use, experiments that link to application of physics in careers. All topics promote working together and discussion through practical work.*					
Year 8	Earth structure and Universe Climate and Earth's resources	Contact forces and pressure Elements and periodic table Breathing	Digestion Electromagnets Types of chemical reactions	Chemical energy Respiration Photosynthesis	Energy and energy transfer Sound Light Wave effects Wave properties	Energy and energy transfer Variation and human reproduction Evolution and inheritance Careers in biology
	Trip to Yorkshire Wildlife park *Links to adolescence and biological changes, discussions on different theories and proving theories, predictions, healthy diet, uses of electromagnets in industry and at home, recycling, use of organisms in industry, experiments that link to application of biology in careers. All topics promote working together and discussion through practical work.*					
Year 9	Sound Light Wave effects Wave properties	Variation and human reproduction Evolution and inheritance Careers in chemistry	Energy stores and pathways Introduction to electric circuits	Atomic structure Balancing equations	Using and understanding the periodic table	Cells Ecology Energy changes
	Links to uses of waves in different industries, how chemical energy changes can be used in students life, genetic modification and uses of, experiments that link to application of chemistry in careers, different energy resources and suitability to surroundings. All topics promote working together and discussion through practical work.					

Curriculum Planning

Year 10	Electric circuits Electricity in the home Organisation and the digestive system Structure and bonding	Molecules and matter Transport in animals and plants Structure and bonding	Forces in balance Transport in animals and plants Chemical calculations	Forces in balance Preventing and treating diseases Chemical changes	Forces in motion Photosynthesis Electrolysis	Forces in motion Respiration The human nervous system Rates of Reaction
	<u>These topics are split between two teachers and for terms 1-4 two subjects(out of biology, chemistry or physics) will be taught concurrently. After the completion of these units, the remaining subject will be split between the two teachers. This is done to maximise subject expertise by teachers delivering the content to each group.</u> *Links to electrical circuits in residential properties, nuclear power stations, use of levers, understanding digestive diseases and radiography, disease transmission and information, cancer treatment, extraction of metal ores, industry requirements for successful chemical reactions, mathematical calculations to understand the viability and purity of reactions in industry. All topics promote working together and discussion through practical work.*					
Year 11	Force and motion Rates and equilibrium Crude oil and fuels *Organic reactions* Hormonal coordination	*Force and pressure* Electromagnetic waves *Light* Wave properties *Homeostasis in action* Reproduction *Organic reactions* *Polymers* Chemical analysis	Electromagnetic waves Variation and evolution The Earth's atmosphere *Light*	Electromagentism Genetics and evolution Adaptations, interdependence and competition Earth's resources *Space*	Biodiversity *Using our resources* *Space*	Exams
	Links to aerodynamics, collision forces in design of cars, uses of waves in different settings and their ability to transfer energy, uses of electromagnets in industry, reproduction and medicine, uses of different polymers and how they are made, impact of crude oil usage on the environment and how industry reduces waste of crude oil, different theories and how to prove/disprove, how industry affects the atmosphere, how to analyse mixtures in industry, how industry extends the life of resources and making fertilisers and the impact on the world population. All topics promote working together and discussion through practical work.					

Year 12	**Chemistry** Atomic Structure Amount of Substance Bonding **Biology** Biological molecules Cell structure **Physics** Forces Momentum **Applied Science** Cells Enzymes Diffusion Waves in communication	**Chemistry** Energetics Kinetics **Biology** Nucleic acids Transport across cell membranes **Physics** Work, energy and power Materials Electric current **Applied Science** Cells Plants Periodicity and Elements	**Chemistry** Equilibria Redox equations Group 2 metals **Biology** Cell recognition and the immune system Exchange Mass transport DNA, Genes and protein synthesis **Physics** Direct current circuits Waves **Applied Science** Planning an investigation Analysis	**Chemistry** Group 7 Periodicity Introduction to organic chemistry Alkanes Halogenoalkanes Alkenes Alcohols **Biology** Genetic diversity and adaptation Biodiversity Photosynthesis **Physics** Optics Matter and Radiation **Applied Science** Plants Investigations of fuels	**Chemistry** Alkanes Halogenoalkanes Alkenes Alcohols Periodicity Organic analysis **Biology** Respiration Response to stimuli **Physics** Quarks and Leptons Quantum Phenomena **Applied Science** Investigation of circuits	**Chemistry** Thermodynamics Acids and bases **Biology** Energy and ecosystems **Physics** Motion in a circle Simple harmonic motion **Applied Science** Investigation of chromatography Investigation of cooling curves
	Trips to university labs for chemical analysis. Links to chromatography and forensics, organic chemistry and drug manufacture,					

Year 13	**Chemistry** Acids and bases Rate equations Optical isomers Aldehydes and ketones Carboxylic acids **Biology** Homeostasis Inherited change Nervous coordination and muscles **Physics** Thermal physics Gasses Gravitational fields **Applied Science** Musculoskeletal disorders	**Chemistry** Electrode potentials Transition metals Aromatic chemistry Amines Amino acids and DNA **Biology** Populations and evolution Gene expression **Physics** Electric Fields Capacitors Magnetic fields **Applied Science** Lymphatic system	**Chemistry** Reactions of ions in aqueous solutions Equilibrium NMR analysis **Biology** Populations in ecosystems **Physics** EM Induction Radioactivity Nuclear Decay **Applied Science** Titrations	**Chemistry** Properties of period 3 oxides Chromatography **Biology** Recombinant DNA technology **Physics** Optional Unit **Applied Science** Scientific skills Digestive system	**Chemistry** Organic synthesis **Biology** Revision **Physics** Optional Unit **Applied Science** Diet Scientific skills	
	Trips to university labs for chemical analysis. Links to chromatography and forensics, organic chemistry and drug manufacture,					