Combined Science Curriculum Overview		Cycle		
		1	2	3
Year7*	Topic	**Cells, cell transport & Microscopy, Particles & States of Matter, Energy stores and transfers**	**Atomic structure, elements mixtures & compounds, Power and Energy resources, separating techniques**	**Specialised cells & how we move, Forces and movement**
	Key knowledge	Eukaryotic and prokaryotic cell structure, microscope use and preparation of specimens, particle theory, changes of state, gas pressure, energy stores and transferring energy between stores.	Atoms, elements and compounds & mixtures, the structure of the atom, chemical symbols and formula, power, fossil fuels, generating electricity, filtration, distillation, chromatography, crystallisation	Specialised animal and plant cells, muscles and bones, distance-time graphs, measuring the speed of objects, forces – types and their interactions with objects, moments and levers.
	Key vocabulary	Cell membrane, mitochondria, ribosomes, cytoplasm, cell wall, vacuole, chloroplast, nucleus, microscope, cover slip, magnification, melting, evaporation, condensation, freezing, thermal, kinetic, chemical, gravitational potential, elastic potential	Proton, neutron, electron, nucleus, element, compound, energy transferred, coal, oil, gas, boiling points, soluble, insoluble, evaporation	Adaptation, function, sperm cell, egg cell, ciliated epithelial cell, antagonistic pairs, velocity, friction, drag, upthrust, weight, gravitational field strength
Year8*	Topic	**Healthy balanced diets, the digestive system, Physical and chemical reactions, Pressure**	**Plant reproduction & seed dispersal, conservation of mass and balancing equations, reactions of acids & bases, waves, the rock cycle**	**Energy changes in reactions, uses of sound waves, light waves – properties and interactions, the solar system**
	Key knowledge	Food groups, malnutrition and deficiency diseases, structure and function of all organs in the digestive system, enzymes, pressure in liquids and gases	Plant structures for reproduction, law of conservation of mass, acids, alkalis, bases, indicators, neutralisation reactions, sound and light wave characteristics, how are sound waves generated, the rock cycle.	Endothermic and exothermic reactions, microphones and speakers, transmission, reflection and absorption of wave, planets in the solar system & seasons
	Key vocabulary	Carbohydrates, proteins, lipids, enzymes, villi, collisions, force, area, weight, upthrust	Anther, pollen, stigma, style, acid, base, alkali, neutralisation, pH, universal indicator, transverse waves, longitudinal wave, igneous, metamorphic, sedimentary, erosion, weathering	Endothermic, exothermic, vibrations, compression, rarefaction, absorption, transmission, reflection, refraction, orbit, gravitational pull, seasons, rotate, axis
Year9*	Topic	**Ecosystems & Biodiversity, Separation Techniques, Motion & Energy**	**Cells & Photosynthesis, Atoms & the Periodic Table, Waves & Electromagnetic Spectrum**	**Transporting Substances & Enzymes, Rates of Reaction & Chemistry Calculations, Newton's Laws**
	Key knowledge	Sampling Techniques, Material Cycles, Filtration, Crystallisation, Chromatography, Distillation, Distance-Time Graphs, Velocity-Time Graphs, Energy Stores, GPE, KE, Renewable and Non-Renewable	Microscopes, Specialised Cells, Factors that affect photosynthesis, Structure of the Atom, Groups of the Periodic Table, Measuring wave speeds, The EM Spectrum Uses and Dangers	Osmosis, Diffusion and Active Transport, Transport in plants, Enzymes, Factors affecting rates of Reactions, Relative Formula Mass, Empirical Formula, Newton's 1st, 2nd and 3rd Law, Momentum, Stopping Distances
	Key vocabulary	Quadrat, Abiotic, Biotic, Pure, Impure, Vector, Scalar, Renewable, Non-Renewable	Magnification, Resolution, Photosynthesis, Proton, Neutron, Electron, Period, Group, Displacement, Transverse, Longitudinal, Refraction, Wavelength, Frequency, Ionising	Concentration, Transpiration, Translocation, Catalyst, Empirical Formula, Acceleration, Momentum, Circular Motion
Year10*	Topic	**Cell Division & Nervous System, Bonding, Electricity & Forces**	**DNA, Inheritance & Evolution, Acids & Alkalis, Density & Specific Heat Capacity**	**Health and Disease, Electrolysis, Radiation ****
	Key knowledge	Mitosis & Meiosis, Growth and Cell Differentiation, Reflex Arc and Neurones, Ionic Bonding, Covalent Bonding, Metallic Bonding, Series and Parallel Circuits, Resistance, AC/DC, Power, Electrical Safety, Contact and Non-Contact Forces, Vector Diagrams	DNA Structure & Extraction, Punnett Squares, Natural Selection & Evolution, Selective Breeding, Genetic Engineering, Making Salts, Solubility, Calculating and Measuring Density, Gas Pressure, Specific Heat Capacity and Specific Latent Heat	Communicable and Non-Communicable Diseases, The Immune System, Electrolysis, Oxidation & Reduction, Extracting Metals, Life Cycle Assessments and Recycle, Moles, Chemistry Calculations, Types of Radiation, Radioactive Decay, Half Life

	Key vocabulary	Prophase, Metaphase, Anaphase, Telophase, Sensory Neurone, Motor Neurone, Relay Neurone, Ammeter, Voltmeter, Ohms	Homozygous, Heterozygous, Dominant, Recessive, Variation, Soluble, Insoluble, Neutralisation, Titration	Lymphocyte, Phagocyte, Antigens, Antibodies, Oxidation, Reduction, Alpha, Beta, Gamma, Half Life
Year11	Topic	**The Heart & Respiration, Hydrocarbons, Types of Reaction & Atmosphere**	**Hormones, Magnetism, Bending & Stretching**	GCSE EXAM WINDOW, Individual teachers revise content/skills needed for their pupils.
	Key knowledge	Structure of the Heart, Blood Vessels, Aerobic and Anaerobic Respiration, Fractional Distillation, Alkanes, Complete and Incomplete Combustion, Fuels & Pollution, The changing atmosphere, Greenhouse Effect & Climate Change, Endothermic and Exothermic Reaction, Dynamic Equilibrium	Menstrual Cycle, Control of Blood Glucose, Magnets, Electromagnetism, Induction, National Grid, Hooke's Law	
	Key vocabulary	Atrium, Ventricle, Vein, Artery, Capillary, Hydrocarbon, Exothermic, Endothermic, Dynamic Equilibrium	Thyroxine, Adrenaline, Oestrogen, Progesterone, FSH, LH, Attract, Repel, Extension,	
	Assessments	Biology Paper 1 – Mid Cycle Chemistry Paper 1 and Chemistry Paper 2 – End of Cycle	Chemistry Paper 2 – Mid Cycle Physics Paper 2 and Biology Paper 2 – End of Cycle	

***Year 7-10 have the same assessment structure during cycles – a midcycle assessment consisting of multiple-choice questions and a longer answer question and during assessment week a 50-minute exam paper.**

**** Year 10 will sit a full GCSE mock paper at the end of cycle 3**