Science Curriculum Overview: 2022/2023

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
KS3	Cells Particle model Periodic table Elements Voltage and resistance Current Breathing	Digestion Acids and Alkalis Types of reaction Light sound Heating and cooling Gravity weight and mass	*Ecosystems* *variation* Earth' s resources Chemical energy Energy cost and energy transfer Speed and velocity	**Photosynthesis** **Metals and nonmetals** **Universe** **Magnetism** **Contact forces** **Separating mixtures** **Electromagnets**	Evolution Work Wave effects Wave properties	**Inheritance** **climate**
KS4	**OCR Biology and Chemistry 2021-22**					
	Biology B1 • Cells and Microscopy • Light Microscopy • DNA • Enzymes • Enzyme activity • Respiration • Biological molecules • Photosynthesis • Investigating photosynthesis B2 • Cell cycle and mitosis • Cell differentiation and stem cells • Diffusion and active transport • Osmosis • Exchange of materials • Exchange of surfaces • Circulatory system, blood vessels and blood • Transport in plants, transpiration and stomata B3 • The nervous system • Hormones • The Menstrual Cycle • Contraception • Controlling blood sugar level		Biology B4 • Ecosystems and competition • Abiotic and Biotic factors • Interactions between organisms • Recycling and the water cycle • The Carbon cycle • The Nitrogen cycle B5 • Genes and variation • More on variation and genetic variants • Sexual reproduction and meiosis • Genetic diagrams • More genetic diagrams and sex determination • Classification • Evolution and natural selection • Evidence and evolution Chemistry C4 • Group 1 Alkali metals • Group 7 Halogens • Halogen displacement reactions • Group 0 Noble gases • Predicting properties of elements • Reactivity of metals		Biology B6 • Investigating distribution and abundance • Population size • Using transects, keys and factors affecting distribution • Human impacts on ecosystems • Maintaining biodiversity • Selective breeding • Genetic engineering • Health and disease • How disease spreads • Reducing and preventing spread of disease • Human immune system • Vaccinations and medicines • Investigating antimicrobials • Comparing antimicrobials • Developing new medicines • Communicable and non-communicable diseases • Treating cardiovascular disease • Stem cells in medicine • Using genomic research in medicine Chemistry C6 • Extracting metals from their ores	

	Chemistry C1 • States of matter • The history of the atom • The atom • Atomic numbers and mass numbers • Ions and isotopes C2 • Periodic table • Electron shells • Ions, ionic bonding, covalent molecules and bonding • Polymers and metals • Purity • Separation techniques: filtration, chromatography, crystallization, distillation, fractional distillation • Relative masses, molecular and empirical formulae C3 • Conservation of mass • Chemical formulae and equations • Endothermic and exothermic reactions • Acids and bases, reaction of acids , neutralization and making salts • Electrolysis: oxidation and reduction • Testing gases Preparation for Mock GCSE exam Biology and Chemistry	• Reactivity series and displacement C5 • Reaction rates • Rate experiments • Calculating rates • Collision theory and catalysts • Identifying catalysts • Dynamic equilibrium	• Extracting metals from electrolysis • Life-cycle assessments • Recycling materials • Crude oil • Hydrocarbons • Cracking • The Atmosphere • The Greenhouse effect • Global warming • Pollutants • Water treatment Preparation for GCSE exam Biology and Chemistry GCSE examination