

Science Common Curriculum Intent

“All pupils build on a set of observations that other people have made, making informed decisions and being able to ask valid questions leading to a love of understanding about ourselves and the world. The curriculum is implemented through a carefully sequenced programme enabling students to apply their subject knowledge through a breadth of subjects which will be assessed at regular opportunities enabling all students to make progress”

The following sequence was designed by collaboration of several schools to ensure a wide and varied curriculum was taught to all students, not just targeted towards GCSE specifications. The science curriculum is designed to introduce pupils to the fundamental core scientific concepts, providing a solid foundation of knowledge which is built upon.

Some aspects of the NC were not considered vital in enabling the mastery of key concepts required at the end of a 5-year program identified during backwards planning, as they were covered in detail during previous NC years (Rocks and Earth structure - covered in geography NC and taught in KS2, Skeletal and muscular system - covered in detail KS2 (year 3)). Time was also given to increase the attention given to practical skills and experiences.

Each 12 week cycle includes mid-cycle assessment points focusing on literacy in science and on the application of knowledge. At the end of each cycle, pupils complete an end-of-cycle assessment comprised of exam GCSE exam questions to assess knowledge recall, application and analysis. Time is devoted within the cycle frame to enable students to address misconceptions and gaps in knowledge before moving forward.



	Cycle 1	Cycle 2	Cycle 3
	Biology	Chemistry	Physics
Year 7	Cell structure & division Plant, animal and bacterial cells, tissues and organs Specialised Cells (RP: microscopes) Digestive system (RP: Enzymes) Reproduction, STIs and contraception	Introduction to the lab Particles and States of matter Separation Techniques (RP: distillation and RP: Chromatography) Atoms and the periodic table Compounds and Chemical Reactions	Energy stores and transfers (RP: Insulation) and resources Motion Forces (RP: F=ma)
Year 8	Cells - Transport (RP: Osmosis) Mitosis and stem cells Health, pathogens, disease and immune system Variation, inheritance and Meiosis (RP: DNA extraction) Natural Selection and evolution	Reactivity of Groups 1, 7 and 0 Rates of reaction (RP : Rates collect gas method) Reactions of Acids (RP: Neutralisation) Ionic, Covalent and Metallic Bonding Exothermic and Endothermic Reactions Fuels and combustion	Electricity (RP: Resistance) Waves - sound and EM spectrum Density (RP: Density) Space
Year 9	Cells - Transport (RP: Osmosis) Health, pathogens and disease Immune system Variation, inheritance and Meiosis Natural Selection and evolution Mitosis and Meiosis	Particles (brief as covered in physics) (RP: separating techniques) Atomic Structure Periodic Table Bonding Energy (RP: Temperature Changes)	Particle Model (RP: SHC, RP: Density) Energy Motion Forces (RP: F=ma, RP: Hookes' Law)
Year 10	Communicable Diseases Drugs Monoclonal Antibodies Plant Disease Photosynthesis (RP: Light intensity) Respiration Homeostasis Human Nervous System (RP: Reaction Times) Hormonal Control Plant Hormones Reproduction Variation & Evolution Genetics & Evolution Classification	Acids and Alkalis (RP: changing pH, making salts, Neutralisation) Electrolysis (RP: Electrolysis) Rates of Reaction (RP: Rates of Reaction) Equilibrium Life Cycle Analysis Extracting Metals	Electricity DC (RP: IV characteristics, RP: Resistance) Electricity, AC Waves (RP: Refraction, RP: Wave speed) Radioactivity
Year 11	Adaptations, interdependence & competition (RP: Quadrats) Organisation in ecosystems Biodiversity Trophic Levels Food Production	Organic chemistry (RP: Identifying Ions, Temperature Changes) Atmosphere	Electromagnetism, motor effect

