COMBINED SCIENCE

YEAR 11

AUTUMN 1

Chemistry – Quantitative Chemistry Reacting masses, empirical formulae, moles.	**Biology - Inheritance, Variation and evolution** Sexual / asexual Reproduction. Meiosis, Classification of living organisms.	**Physics – Forces** Velocity/time graphs, Terminal velocity, Newton's laws of motion, Momentum.	Prior Learning Atomic structure, electronic configuration, conservation of mass, mass numbers on Periodic Table, genetic crosses, Punnett squares, reproduction, variation topics.

AUTUMN 2

Chemistry – Quantitative Chemistry Atom economy, percentage yield.	**Biology - Inheritance, Variation and evolution** Sexual / asexual Reproduction. Meiosis, Classification of living organisms.	**Physics – Waves** Wave types, Measuring Waves, Reflection & refraction.	Prior Learning Percentage calculations from maths. Populations introduced throughout KS2 and studied in more detail in Y7&8. Transverse and longitudinal waves introduced in Y7&8.

SPRING 1

Chemistry – Using Resources Potable water, alt methods of extracting metals, life cycle assessment.	**Biology - Ecology** Adaptations, communities, ecosystems, sustainability, Role of Biotechnology.	**Physics – Waves** Sound Waves, Electromagnetic spectrum, Uses and Dangers of EM waves	Prior Learning Metal extraction, recycling. Students have studied basic plants in Y7 and interdependence including carbon cycle, food chains in Y8.

SPRING 2

Chemistry – Using Resources Life cycle assessment, corrosion, alloys, ceramics, polymers and composites, fertilisers.	**Biology - Ecology** Adaptations, communities, ecosystems, sustainability, Role of Biotechnology.	**Physics – Magnets** Magnetic materials, Magnetic fields, Electromagnets and their uses, The Motor Effect & Fleming Left hand rule, Motors.	Prior Learning Students have studied basic plants in Y7 and interdependence including carbon cycle, food chains in year 8. Magnetism in Y7.

SUMMER 1

Chemistry: Paper 1&2 topics focusing on fundamentals and AO1.	Biology: Revision Topics 1-4 (Cell biology. Organisation, Immunity, Bioenergetics).	Physics: Definitions and Equations, Required Practical work, Exam Techniques.	Prior Learning Linking to all topics from the previous 2 years from Biology, Chemistry and Physics.

SUMMER 2

Chemistry: Revision AO2 looking at required practical's for paper 1 and 2.	Biology: Revision Topics 5-7 (Homeostasis and response, Variation, evolution, inheritance, Ecology).	Physics: Exams	Prior Learning Linking to all topics from the previous 2 years from Biology, Chemistry and Physics.

CAREERS LINKS

Research scientist, laboratory technician, dentist, nurse, dietitian, sports scientists, genetic disease research, taxonomist, wildlife forensics, civil engineer, environmental scientist. engineering, data analyst, healthcare, aviation, defence, construction.

CHARACTER LINKS

Motivation, resilience, and teamwork (performance virtues).
Confidence and determination
Listening, critical thinking and problem solving (intellectual virtues).
Evaluation of ideas and process and seeking improvement through better knowledge and techniques (intellectual virtues).
Consideration and construction of moral and ethical arguments in Science (moral virtues).

KEY ASSESSMENT DATES

End of topic tests are completed in addition to exam assessments in Oct, Dec and April according to the KS4 assessment calendar.