CHEMISTRY – Combined Science to Triple Award

GCSE Combined Science (taught to all students if Triple Science has not been opted for at GCSE). All three sciences are taught continuously throughout a term to ensure content is clearly sequenced and knowledge is built/interleaved.

Y10

Autumn Term

Bonding, structure, properties of matter: Chemical Bonds, Ionic bonding, Ionic compounds, Covalent bonding, Metallic bonding, The three states of matter, State symbols, Properties of Ionic compounds, Properties of small molecules, Polymers, Giant covalent structures, Properties of metals and alloys, Metals as conductors, Structure and bonding of carbon
Triple: Bulk/surface properties of matter and nanoparticles
Chemical changes: Reactivity of metals, RP Preparation of pure, dry sample of soluble salt, Strong and weak acids.
Triple: Titrations, RP Determination of the reacting volumes of solutions by titration

Spring Term

Chemical changes (including electrolysis): Reactivity of metals, Reactions of acids, Gain and loss of electrions (Higher), RP Preparation of pure, dry sample of soluble salt, Strong and weak acids, Electrolysis, RP Investigating what happens when aqueous solutions are electrolysed.
Triple: Titrations, RP Determination of the reacting volumes of solutions by titration
Quantitative: Chemical measurements, conservation of mass and the quantitative interpretation of chemical equations, Use of amount of substance in relation to masses of pure substances
Triple: Yield and atom economy, using concentrations of solutions, Volumes of gases

Summer Term

Energy Changes: Exothermic and endothermic reactions, RP Investigating the variables that affect temperature changes
Triple: Chemical cells and fuels cells
Rates of Reaction: Rate of reaction, RP Investigate how changes in concentration affect rates of reactions, Reversible reactions and dynamic equilibrium.

Y11

Autumn Term

Rates of Reaction: Rate of Reaction, RP Investigate how changes in concentration affect the rates of reactions, Reversible reactions and dynmaice equilibrium
Organic Chemistry: Carbon compounds as fuels and feedstock
Triple: Reactions of alkenes and alcohols, Synthetic and naturally occuring polymers
Chemical Analysis: Purity, formulations and chromatography, RP Investigate how paper chromatography can be used, Identifcation of common gases
Triple: Identification of ions by chemical and spectroscopic means, RP use chemical tests to identify ions

Spring Term

Chemistry of the atmosphere: The Composition and evolution of Earth's atmosphere, Carbon dioxide and methane as greenhouse gases, Common atmospheric pollutants and their sources
Using Resources: Using Earth's resources and obtaining potable water, RP analysis and purification of water samples, Life cycle assessment and recyling
Triple: Using materials, The Haber process and the use of NPK fertilisers

Summer Term

Class-specific revision and interventions
Atoms and PT, Bonding, Quantitative, Chemical Changes, Energy Changes, Rates of Reaction, Organic Chemistry, Chemical Analysis, Chemistry of the atmosphere, Using Rescources

Final Exams

KS5
Studying GCSE Science can lead you to a wide variety of courses at KS5. Chemistry, Chemical Engineering, Medicine, Dentistry, Pharmacy, and Veterinary science.

CHEMISTRY SKILLS:
Chemistry provides the foundations for understanding the material world. Scientific understanding is changing our lives and is vital to the world's future prosperity, and all learners are taught essential aspects of the knowledge, methods, processes and uses of science. They should be helped to appreciate how the complex and diverse phenomena of the natural world can be described in terms of a small number of key ideas relating to the sciences which are both inter-linked and are of universal application.