

Curriculum Intent Chemistry: **Providing knowledge of atoms and elements that underpin the Periodic Table and how chemicals react and interact with the environment.**

End Points for end of Year 11 Chemistry : Key knowledge – Skills – Character

Key Knowledge: Atoms, the Periodic Table and chemical bonding, energy changes and electrolysis, the speed of reactions, organ chemistry and fuels, analysis chemicals and the earth's resources.

Skills: Investigative Skills (Required Practicals) Method Writing. Maths Skills: Plotting and interpreting graphs, evaluating tables, calculating means and identifying abnormalities, determining the gradient of a graph, percentages, ratios, fractions, significant figures, surface area and volume.

Character: Developing Independence And Resilience

Term	Module (number of lessons)	Essential Knowledge, Key words and skills learnt in this module (How this module contributes to the intent)	Links to Prior Learning	Links to future learning
Y10 Term 1	C4. Chemical Cals (9)	- Relative formula and molecular masses. - Balancing equations. - Calculating moles in equations. - Calculating concentration of solutions. - The yield and atom economy of a reaction (Separates). - Titrations and their calculations (Separates). - Calculating volumes of gases (Separates).	Y9 – C1 Atomic Structure Y9 – C2 The Periodic Table Y9 – Biomimicry	BTEC Applied Science or A-Level in Chemistry Degree in Chemistry or Natural Sciences
Y10 Term 1	C5. Chemical Changes (7,8)	- The reactivity series - Displacement reactions. - Extracting metals from ores. - Salts from metals and insoluble salts - Experiment to extract salts. - Neutralisation and the pH scale.	Y9 – C1 Atomic Structure Y9 – C2 The Periodic Table Y10 – C3 Structure and Bonding	BTEC Applied Science or A-Level in Chemistry Degree in Chemistry or Natural Sciences Materials Technical

		- Strong and weak acids.		
Y10 Term 3	C6. Electrolysis (5)	- The basics of electrolysis. - Changes that occur at the electrodes. - Electrolysis of aluminium. - Practical electrolysis of sodium chloride. - Electrolysis of aqueous ionic solutions.	Y9 – C1 Atomic Structure Y9 – C2 The Periodic Table Y10 – C3 Structure and Bonding	BTEC Applied Science or A-Level in Chemistry Degree in Chemistry or Natural Sciences Vehicle Body Repair
Y10 Term 2	C7. Energy Changes (5, 7)	- Exothermic and endothermic reactions. - Energy profile diagrams and activation energy. - Bond energy calculations. - Chemical cells and batteries (Separates). - Fuel cells (Separates).	Y9 – C1 Atomic Structure Y9 – C2 The Periodic Table Y10 – C3 Structure and Bonding	BTEC Applied Science or A-Level in Chemistry Degree in Chemistry or Natural Sciences Electrician Motor vehicle fitter
Y10 Term 3	C8. Rates and Equilibrium (10)	- Collision theory. - Calculating the rates of reaction. - Effect of surface area on rate. - Effect of temperature on rate. - Effect of concentration on rate. - Effect of pressure on rate. - Effect of catalysts on rate. - Reversible reactions. - Dynamic equilibrium and changing temperature and pressure.	Y9 – C1 Atomic Structure Y9 – C2 The Periodic Table Y10 – C3 Structure and Bonding	BTEC Applied Science or A-Level in Chemistry Degree in Chemistry or Natural Sciences Chemical technician
Y11 Term 1	C9. Crude Oil and	- Understanding hydrocarbons. - Fractional distillation. - Combustion of hydrocarbons.	Y9 – C1 Atomic Structure Y9 – C2 The Periodic Table	BTEC Applied Science or A-Level in Chemistry

	Hydrocarbons (5)	- Cracking hydrocarbons.	Y10 – C3 Structure and Bonding	Degree in Chemical engineering Oil and Gas Operations Chemical Engineer
Y11 Term 1	C10 Organic reactions (4) (Separate Science only)	- Structure of alkenes - Reactions of alkenes - Alcohols - Carboxylic acids	Y9 and Y10 – C3 Y11 – C9	
Y11 Term 1	C11 Polymers (4) (Separate Science only)	- Polymers - Addition and Condensation polymerisation - Amino acids - BNA and other naturally occurring polymers	Y9 and Y10 – C3 Y11 – C9 Y11 – C10	
Y11 Term 1	C12. Chemical Analysis (3, 7)	- Pure substances, formulations and mixtures. - Analysing chromatograms. - Testing for gases. - Tests for positive and negative ions (Separates). - Instrumental analysis (Separates).	Y9 – C1 Atomic Structure Y9 – C2 The Periodic Table Y10 – C3 Structure and Bonding	BTEC Applied Science A-Level in Chemistry Degree in Applied Chemistry Food Scientists Fingerprint Officer Environmental engineer
Y11 Term 1	C13 The Earth and the Atmosphere (6 lessons)	- The history and evolution of the atmosphere - Greenhouse gases - Climate change - Atmospheric pollution	Y7 – Acid and Alkalis Y8 – Earth and the Atmosphere	Y10 – C5 Chemical changes
Y11 Term 2	C14. The Earth's Resources (7)	- Finite and renewable resources - Potable water - Treating waste water	Y9 – C1 Atomic Structure Y9 – C2 The Periodic Table Y9 – Biomimicry	BTEC Applied Science A-Level in Chemistry

		- Extracting metals from ores - Life cycle assessments - Reduce, reuse and recycle.		Degree in environmental Chemistry Environmental consultant
Y11 Term 2	C15 Using our resources (Separate Science only)	- Preventing corrosion - Alloys and their uses - Ceramics and composites - The Harber process - Making profits from products - NPK fertilizers	Y9 – C1 Atomic Structure Y9 – C2 The Periodic Table Y11 – C14	