

Year:10 Subject: Chemistry

IMPLEMENTATION

<p style="text-align: center;">INTENT (including key concepts and skills)</p>	<p>Half Term 1 Context: C2 Part 2 Chemical Calculations</p> <p>Key Vocabulary: Law of conservation of mass, balanced symbol equation, relative atomic mass, relative formula mass, mole, Avogadro constant, reacting mass, limiting factor, theoretical yield, actual yield, percentage yield, atom economy, concentration, titration, neutralisation, acid/base indicator, volumetric pipette, burette, titre, concordant results, molar gas volume</p> <p>Prior Learning Y7 R1 Acids and Alkalis Y9 R5 Reactions with Metals (word and symbol equations)</p> <p>Cultural Capital: How Chemists work out reacting masses in a chemical process. Why certain factors mean reaction yield is never 100%. The importance of maximising atom economy in industrial processes to conserve the Earth's resources and minimise pollution.</p>	<p>Half Term 2 Context: C3 Part 1 Chemical Changes</p> <p>Key Vocabulary: Metal ore, reactivity series, oxidation, reduction, displacement reaction, ion, ionic equation, half-equation, pH scale, neutralisation, indicator, hydrogen ion, hydroxide ion, weak acid, strong acid</p> <p>Prior Learning Y7 R1 Acids and Alkalis Y8 R4 Reactivity Y9 R5 Reactions with Metals C1 Atomic structure and ions</p> <p>Cultural Capital: How commonly used metals are extracted. How pH value relates to hydrogen ion concentration.</p>	<p>Half Term 3 Context: C3 Part 2 Electrolysis</p> <p>Key Vocabulary: Electrolysis, electrolyte, electrode, anode, cathode, aqueous solutions, half equation, oxidation and reduction in terms of electrons, aqueous solution, aluminium, molten</p> <p>Prior Learning C2 Ionic Compounds C3 Part 1 half-equations</p> <p>Cultural Capital: How useful aluminium is extracted and the environmental implications. Many useful products are made from the electrolysis of brine.</p>	<p>Half Term 4 Context: C3 Part 3 Energy Changes</p> <p>Key Vocabulary: Energy transfer, exothermic, endothermic, reaction profile, bond energy, electrical cell, battery, voltage, hydrogen fuel cell</p> <p>Prior Learning C2 Covalent Bonding</p> <p>Cultural Capital: Everyday applications of exothermic and endothermic reactions. The chemical reactions taking place inside electrical cells and batteries. The advantages and disadvantages of using hydrogen fuel cells as a renewable alternative to fossil fuels.</p>	<p>Half Term 5 Context: C4 Rate of reaction</p> <p>Key Vocabulary: Rate of reaction, gradient, tangent, particle, collision theory, activation energy, surface area, concentration, pressure, temperature, catalyst</p> <p>Prior learning: Y7 P1 Particles and States of Matter C2 Reaction profiles and activation energy</p> <p>Cultural Capital: How Chemists can alter conditions to change the rate of everyday reactions. How catalysts can be used to improve the rate and profit of chemical reactions.</p>	<p>Half Term 6 Context: C4 Reversible Reactions and Equilibrium</p> <p>Key Vocabulary: Reversible reaction, hydrated, anhydrous, equilibrium, Le Chatelier's Principle</p> <p>Prior Learning C3 Endothermic and Exothermic Reactions</p> <p>Cultural Capital: Use of anhydrous copper sulfate as a test for water. How altering conditions in industrial processes can affect yield</p>
Applying knowledge and understanding to explain observations	X	X	X	X	X	X
Use different types of scientific enquiry to answer scientific questions	X	X	X	X	X	X
Use technical terminology with confidence accuracy and precisely	X	X	X	X	X	X
Apply mathematical knowledge to scientific understanding	X	X	X	X	X	X

Aware of some of the social and economic implications of science	X	X	X	X	X	X
IMPACT	Assessment: C2 End of Topic Test	Assessment: At end of C3	Assessment: At end of C3	Assessment: C3 End of Topic Test	Assessment: At end of C4	Assessment: C4 End of Topic Test Summer Summative on Paper 1 Content.

Cultural Capital is the body of knowledge a student needs so that they can flourish in the future and not be left behind.