

National curriculum or specification coverage

- ☐ 4.2.1.1 Chemical bonds
- ☐ 4.2.1.2 Ionic bonding
- ☐ 4.2.1.3 Ionic compounds
- ☐ 4.2.1.4 Covalent bonding
- ☐ 4.2.1.5 Metallic bonding
- ☐ 4.2.2.1 The three states of matter
- ☐ 4.2.2.2 State symbols
- ☐ 4.2.2.3 Properties of ionic compounds
- ☐ 4.2.2.4 Properties of small molecules
- ☐ 4.2.2.5 Polymers
- ☐ 4.2.2.6 Giant covalent structures
- ☐ 4.2.2.7 Properties of metals and alloys
- ☐ 4.2.2.8 Metals as conductors
- ☐ 4.2.3.1 Diamond
- ☐ 4.2.3.2 Graphite
- ☐ 4.2.3.3 Graphene and fullerenes
- ☐ 4.2.4.1 Sizes of particles and their properties (*Chemistry only*)
- ☐ 4.2.4.2 Uses of nanoparticles (*Chemistry only*)
- ☐ 4.4.1.1 Metal oxides
- ☐ 4.4.1.2 The reactivity series
- ☐ 4.4.1.3 Extraction of metals and reduction
- ☐ 4.4.1.4 Oxidation and reduction in terms of electrons (*HT only*)
- ☐ 4.4.2.1 Reactions of acids with metals
- ☐ 4.4.2.2 Neutralisation of acids and salt production
- ☐ 4.4.2.3 Soluble salts
- ☐ 4.4.2.4 The pH scale and neutralisation
- ☐ 4.4.2.5 Titrations (*Chemistry only*)
- ☐ 4.4.2.6 Strong and weak acids (*HT only*)
- ☐ 4.4.3.1 The process of electrolysis
- ☐ 4.4.3.2 Electrolysis of molten ionic compounds
- ☐ 4.4.3.3 Using electrolysis to extract metals
- ☐ 4.4.3.4 Electrolysis of aqueous solutions
- ☐ 4.4.3.5 Representation of reactions at electrodes as half equations (*HT only*)
- ☐ 4.5.1.1 Energy transfer during exothermic and endothermic reactions
- ☐ 4.5.1.2 Reaction profiles
- ☐ 4.5.1.3 The energy change of reactions (*HT only*)

- ☐ 4.5.2.1 Cells and batteries (*Chemistry only*)
- ☐ 4.5.2.2 Fuel cells (*Chemistry only*)
- ☐ 4.3.1.1 Conservation of mass and balanced chemical equations
- ☐ 4.3.1.2 Relative formula mass
- ☐ 4.3.1.3 Mass changes when a reactant or product is a gas
- ☐ 4.3.2.1 Moles (*HT only*)
- ☐ 4.3.2.2 Amounts of substances in equations
- ☐ 4.3.2.3 Using moles to balance equations (*HT only*)
- ☐ 4.3.3.1 Percentage yield
- ☐ 4.3.3.2 Atom economy
- ☐ 4.3.4.1 Concentration of solutions
- ☐ 4.3.4.2 Concentration calculations (*HT only*)
- ☐ 4.3.5.1 Use of amount of substance in relation to volumes of gases (*HT only*)
- ☐ 4.6.1.1 Calculating rates of reaction
- ☐ 4.6.1.2 Factors which affect the rate of reaction
- ☐ 4.6.1.3 Factors affecting the rate of reaction (*HT only*)
- ☐ 4.6.1.4 Catalysts
- ☐ 4.6.2.1 Reversible reactions
- ☐ 4.6.2.2 Energy changes and reversible reactions
- ☐ 4.6.2.3 Equilibrium
- ☐ 4.6.3.1 Le Chatelier's principle (*HT only*)

Date	Exams/ Assessments	Learning Intentions	Core Task/Assessments
09/01/2026	INSET (MON)	No taught chemistry lesson scheduled.	
09/07/2026		• C2.5 Covalent Bonding — Explain covalent bonding as shared pairs of electrons; draw dot-and-cross diagrams for simple molecules. • C2.6 Simple Structures — Relate simple molecular structures to low melting and boiling points and lack of electrical conductivity; distinguish intermolecular forces from covalent bonds.	

Year 10 Long Term Scheme of Learning 2026-2027

Subject: Combined Science: Chemistry (Foundation and Higher)

Date	Exams/ Assessments	Learning Intentions	Core Task/Assessments
9/14/2026		C2.7 Giant Covalent Compounds — Describe giant covalent structures including diamond, graphite and graphene; explain hardness, melting point and conductivity from bonding and structure.	
9/21/2026		- C2.8 Metallic Bonding — Describe metallic bonding as attraction between positive metal ions and delocalised electrons. - C2.9 Properties of Metals and Alloys — Explain metal conductivity and malleability; compare pure metals with alloys and explain why alloys are harder.	
9/28/2026		C2.10 Bonding Overview — Compare ionic, covalent and metallic bonding, structure and physical properties using particle models.	
10/05/2026		- C2.13 Bonding Standard Task — Review and improve assessed work. - C2.14 Bonding Feedback — Review and improve assessed work.	C2.13 Bonding Standard Task C2.14 Bonding Feedback
10/12/2026		C4.1 The Reactivity Series - link to properties of metals — Place common metals and carbon in the reactivity series; compare reactions with water and dilute acids and relate observations to reactivity.	
10/19/2026		- C4.2 Displacement Reactions - PRAC — Predict and explain displacement reactions using the reactivity series; record observations and write word and balanced symbol equations. - C4.3 Extracting Metals — Explain metal extraction by reduction with carbon for metals below carbon and electrolysis for more reactive metals; define oxidation and reduction.	
11/02/2026	INSET (MON)	C4.4 Salts from Metals — Describe metal + acid reactions that form a salt and hydrogen; name salts and write equations.	
11/09/2026	Assessment	- C4.5 Salts from Insoluble Bases — Explain acid reactions with insoluble metal oxides and hydroxides to make salts and water; select suitable reactants. - C4.6 Req Prac Making Salts (copper sulfate) — Required practical: prepare pure, dry copper sulfate crystals from copper oxide and dilute sulfuric acid by warming, adding excess solid, filtering, evaporating and crystallising; evaluate safety and yield.	C4.6 Req Prac Making Salts (copper sulfate)
11/16/2026	Assessment	C4.7 Neutralisation — Describe neutralisation and acid reactions with alkalis, bases and carbonates; use pH and indicators and write balanced equations.	
11/23/2026		- C4.8 Strong and Weak Acids — Higher tier: distinguish strong/weak acids by extent of ionisation, and concentrated/dilute acids by amount per volume; relate hydrogen-ion concentration to pH. - C4.10 Chemical Changes Standard Task — Apply reactivity, extraction and acid/salt chemistry to exam-style explanations, equations and practical analysis.	C4.10 Chemical Changes Standard Task
11/30/2026		C4.11 Chemical Changes Feedback — Review standard-task responses, correct misconceptions and practise extended explanations.	C4.11 Chemical Changes Feedback
12/07/2026		- C4.12 Introduction to Electrolysis — Explain electrolysis of ionic compounds: ions move to oppositely charged electrodes and undergo reduction/oxidation. - C4.13 Changes at the Electrodes - link to ionic equations — Predict products at electrodes in molten ionic compounds; represent electrode reactions using half-equations (HT).	
12/14/2026		C4.14 Electrolysis of Aluminium — Explain aluminium extraction from molten aluminium oxide dissolved in cryolite; identify electrode products and why carbon anodes need replacement.	
01/04/2027		- C4.15 Electrolysis of Aqueous Solutions — Predict products of electrolysis of aqueous solutions using competing ions and electrode rules. - C4.16 Req Prac Electrolysis of Aq Solutions — Required practical: investigate electrolysis of an aqueous solution using inert electrodes; identify products with suitable tests and explain observations.	C4.16 Req Prac Electrolysis of Aq Solutions
01/11/2027		Assessment 1 (C1,C2, and C4)	Assessment 1 (C1,C2, and C4)

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Date	Exams/ Assessments	Learning Intentions	Core Task/Assessments
1/18/2027		- Assessment 1 (C1,C2, and C4) Feedback - C4.16 Redox Reactions — Define oxidation and reduction in terms of oxygen and, at HT, electron transfer; identify oxidised and reduced species.	Assessment 1 (C1,C2, and C4) Feedback
1/25/2027		C5.1 Exothermic and Endothermic Reactions — Distinguish exothermic and endothermic reactions; explain energy transfer and interpret temperature changes.	
02/01/2027		- P5.2 Req Prac Endothermic and Exothermic Reactions — Required practical: investigate temperature changes in reacting solutions; record measurements, control variables and evaluate heat loss. - C5.3 Reaction Profiles — Draw and interpret reaction profiles showing reactants, products, activation energy and overall energy change.	P5.2 Req Prac Endothermic and Exothermic Reactions
02/08/2027		C5.4 Bond Energy Calculations — Higher tier: calculate overall energy changes using bond energies; explain energy needed to break bonds and released on bond formation.	
2/22/2027		- C5.5 Electrolysis and Energy Changes Standard Task — Assess electrolysis and energy-change concepts through calculations, graphs and extended responses. - C5.6 Electrolysis and Energy Changes Feedback — Review assessment feedback and improve explanations, calculations and practical evaluation.	C5.5 Electrolysis and Energy Changes Standard Task C5.6 Electrolysis and Energy Changes Feedback
03/01/2027		C3.1 Writing and Balancing Chemical Equations — Write word, formula and balanced symbol equations; apply conservation of mass and appropriate state symbols.	
03/08/2027		- C3.2 Relative Formula Mass — Calculate relative formula mass using relative atomic masses from the periodic table. - C3.3 % Element in a Compound — Calculate percentage by mass of an element in a compound using relative formula mass.	
3/15/2027		C3.4 Equations and Calculations — Use balanced equations and relative formula masses to relate reactant and product masses; introduce amount of substance where appropriate (HT).	
3/22/2027		- C3.5 From Masses to Balanced Equations — Determine balanced equations from masses and formulae; use reacting-mass ratios and moles where appropriate (HT). - C3.6 Uncertainty — Identify measurement uncertainty, repeatability and anomalous results; select appropriate precision for chemical calculations.	
04/12/2027		- Off timetable - C3.12 Calculations Standard Task — Complete the chemical calculations standard task, showing working, units and balanced equations.	C3.12 Calculations Standard Task
4/19/2027		C3.13 Calculations Feedback — Use feedback to correct calculation errors and revisit conservation of mass and formula mass.	C3.13 Calculations Feedback
4/26/2027	INSET (MON)	- C6.1 Rates of Reaction — Define rate of reaction; describe measuring gas volume, mass loss or precipitate formation over time and interpreting graphs. - C6.2 Limiting Reactants - link to mole calculations — Explain limiting reactants and calculate reactant/product quantities from balanced equations where appropriate (HT).	
05/03/2027		C6.3 Collision Theory and Surface Area — Use collision theory to explain the effect of surface area on rate of reaction.	
5/24/2027		- C6.4 Factors affecting Rate of reaction — Explain effects of concentration, pressure (gases), temperature and surface area on rate using collision theory. - C6.5 Calculating Rate of Reaction — Calculate mean reaction rate from amount of reactant used or product formed per unit time; interpret gradients of graphs.	

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Date	Exams/ Assessments	Learning Intentions	Core Task/Assessments
06/07/2027		C6.6 Req Practical Effect of Concentration — Required practical: investigate the effect of concentration on reaction rate, such as sodium thiosulfate with acid; control variables, collect repeat data and analyse graphs.	C6.6 Req Practical Effect of Concentration
6/14/2027	Assessment in Hall	- End of Year Assessment (Full Paper 1) - Off timetable	End of Year Assessment (Full Paper 1)
6/21/2027	Assessment in Hall	No taught chemistry lesson scheduled.	
6/28/2027		End of Year Assessment - Feedback	End of Year Assessment - Feedback
07/05/2027	6th Form Taster	Off timetable	
07/12/2027	sports day	- C6.7 The effect of Catalysts - link to reaction profiles — Explain catalysts as substances that increase reaction rate without being used up; interpret alternative reaction profiles with lower activation energy. - Off timetable	