

## KS5 Curriculum Plan 2024-2025

TOPIC	LP1	LP2	LP3	LP4	LP5
	Atoms, ions and compounds	Shapes of molecules and intermolecular forces, periodicity	Reactivity trends	Bond enthalpies and Hess' law	Reaction rates and equilibrium
	Atomic structure and isotopes, relative mass, formulae and equations, electron structure, ionic bonding and structure, covalent bonding.	Shapes of molecules and ions, electronegativity and polarity, intermolecular forces, hydrogen bonding, periodic table, ionisation energies, periodic trends in bonding and structure	Group 2, The halogen, Qualitative analysis. Qualitative analysis of ions <b>PAG</b>	Enthalpy changes Measuring enthalpy changes Enthalpy determination <b>PAG</b> Bond enthalpies Hess' law and enthalpy cycles	Reaction rates, catalysts, The Boltzmann distribution, Dynamic equilibrium and Le Chatelier's principle, Equilibrium constant. Measuring the rate of a reaction, continuous method <b>PAG</b>
<b>Year 12</b> Skills	Standard form conversions MS Rearranging of equations and formula MS Conversions between units MS Drawing electron configuration Balancing equations and formulae MS Standard form conversions MS Drawing molecules Explaining trends Balancing equations Oxidation states CPAC investigative skills Drawing electron configuration Standard form conversions MS Rearranging of equations and formula MS Conversions between units MS Plotting and interpreting graphs MS Conversions between units MS Rearranging of equations and formula MS				
Key Vocab	Atomic structure, isotopes, relative mass, mass spectroscopy, ions, electron structure, orbitals, ionic bond, covalent bond	Electron-pair repulsion, tetrahedral, pyramidal, non-linear, trigonal planar, octahedral, electronegativity, polarity, dipoles, London forces, Hydrogen bonding, periodicity, ionisation energy	Group 2, Halides, trends, displacement reactions, anions, precipitate tests, carbonate, sulfate	Enthalpy change, exothermic, endothermic, activation energy, standard enthalpy change, enthalpy change of combustion, enthalpy change of formation, enthalpy change of neutralisation, bond enthalpy, Hess' law	Rate equation, catalysts, Boltzmann distribution curve, dynamic equilibrium, Le Chatelier's principle, equilibrium constant

TOPIC	LP1	LP2	LP3	LP4	LP5
	Rates of Reactions	Equilibrium	Enthalpy and entropy	Redox and electrode potentials	
<b>Year 13</b> Knowledge	Orders, rate equations and rate constants, concentration-time graphs, rate concentration graphs, rate determining step, rate constants and temperature. Calculating rate using initial step method <b>PAG</b>	Equilibrium constant $K_c$ , Equilibrium constant $K_p$ , controlling the position of equilibrium	Lattice enthalpy, Born Haber cycles, Enthalpy changes in solution, factors affecting lattice enthalpy and hydration. Free energy, Entropy	Redox potentials, Manganate (VII) redox titrations, Iodine/thiosulfate redox titrations, electrode potentials, predictions from electrode potentials, Electrochemical cells <b>PAG</b> . Investigative skills <b>PAG</b>	
Skills	Interpretation of graphs MS Standard form conversions MS Rearranging of equations and formula MS CPAC investigative skills				
Key Vocab	Rate of reaction, order of reaction, Rate constant, Concentration-time graph, half life, rate-concentration graph, initial rate.	Equilibrium, Equilibrium constant $K_c$ , Equilibrium constant $K_p$ , Equilibrium shift	Lattice enthalpy,, Born Haber cycle, enthalpy change of formation, enthalpy change of atomisation, Ionisation energy, electron affinity, enthalpy change of solution, enthalpy change of hydration, Entropy, Free energy, feasibility.	Redox and electrode potentials, Oxidising agents, Reducing agents, half cells	