



**Key Stage 5 Chemistry
Curriculum Map**

Year 1		Year 2	
Teacher 1	Teacher 2	Teacher 1	Teacher 2
2.1 Atomic structure – isotopes, atomic number, mass number and charge	2.3 ionic formulae and ionic charges, balanced chemical equations	18.1 Orders, rate equations and rate constants	19.2 Kp, mole fractions, partial pressures,
2.2 RAM and RIM, mass spectroscopy		18.2 Concentration time graphs, shapes, half life, half life and k PAG 9	19.3 Kc and position of equilibrium
Assessment: Chapter 2 Test		18.3 rate concentration graphs, shape and order, initial rates method PAG 10	Assessment: Equilibria Test
3.1 The mole concept	4.1 acids and alkalis, neutralisation, strong and weak acids	18.4 rate determining step and mechanisms	19.2 Kp, mole fractions, partial pressures,
3.2 RFM, RMM, empirical formula, molecular formula, water of crystallisation	4.2 Standard solutions and acid base titrations, practical and calculations PAG 2	18.5 Rate constants and temperature, Arrhenius equation, graphical determination of Ea and A	19.3 Kc and position of equilibrium
3.3 Mole calculations involving mass, gas volume, solution volume and concentration. The Ideal Gas equation PAG 1	4.3 oxidation numbers, redox reactions	Assessment: Kinetics Test	Assessment: Equilibria Test
3.4 Percentage yield, atom economy, reacting masses. Practical techniques in measuring quantity	Assessment: Chapter 4 Test	22.1 Lattice enthalpy, definition, Born Haber cycles, calculating lattice enthalpy	Chapter 20 20.1 bronsted – lowry acids and bases, the role of H ⁺ ,
Assessment: Chapter 3 Test	5.1 atomic orbitals, electron configurations	22.2 enthalpy changes in solution,	20.2 pH calculations in strong acids
6.1 Shapes of molecules, VSEPR, bond angles	5.2 Ionic Bonding, dot and cross diagrams, properties of ionic compounds	22.3 factors affecting lattice enthalpy and hydration	20.3 Ka expression for weak acids
		22.4 entropy, std entropy	20.4 pH calculations for weak acids
		22.5 free energy calculations, feasibility	20.5 pH and strong bases, Kw,
6.2 electronegativity, polar bonds and molecules	5.3 Covalent bonding, multiple bonds, dative bonds, average bond enthalpy, dot and cross diagrams	Assessment: Chapter 22 Test	
6.3 London forces and permanent dipole interactions	Assessment: Chapter 5 Test	Chapter 23	Chapter 21

		23.4 electrode potentials, standard electrode potential, hydrogen half cell, calculating cell voltage	21.1 buffer solutions, definition and production, mechanism, calculating the pH
6.4 Hydrogen Bonding and properties of water		23.2 manganate titrations, techniques, calculations	21.3 neutralisation curves, choice of indicator for a titration
Assessment: Chapter 6 Test		23.3 iodine/thiosulfate titrations, techniques and calculations PAG 12	Assessment: Chapter 20 and 21 Test
Assessment: Module 2 Exam			
7.1 The periodic table	11.1 11.2 IUPAC nomenclature, homologous series, functional groups key organic terminology	23.5 predicting redox reactions using electrode potentials, limitation of method PAG 8	Chapter 24 24.1 d block elements, definitions, properties 24.2 formation and shapes of complex ions, ligands
7.3 first Ionisation energies, trends and patterns, successive ionisation energies	11.3 formulae in organic chemistry	23.6 storage and fuel cells	24.3 stereoisomerism in complex ions, cis-trans, optical isomerism.
7.3 Periodic trends in bonding and structure, giant covalent, metallic, melting points	11.4 Structural isomerism	Assessment: Chapter 23 Test	24.1 d block elements, definitions, properties 24.2 formation and shapes of complex ions, ligands
8.1 group 2 reactions, group 2 compounds	11.5 Bond fission and mechanisms	Chapter 25 25.1 aromatic compounds, benzene, kekule structure, delocalised model	24.3 stereoisomerism in complex ions, cis-trans, optical isomerism.
8.2 group 7 properties, reactivity and displacement, disproportionation PAG 11	Assessment: Chapter 11 Test	25.2 electrophilic substitution mechanism, halogenation, acylation, alkylation, nitration	Assessment: Chapter 24 Test
8.3 qualitative analysis PAG 4	12.1 alkanes, shapes and physical properties	25.3 chemistry of phenol, phenol as a weak acid, electrophilic substitution reactions of phenol	Chapter 26 26.1 carbonyl compounds, oxidation, nucleophilic addition mechanism, reduction with NaBH ₄ , reaction with HCN
Assessment: Chapter 7 and 8 Test	12.2 reactivity, combustion and free radical substitution of alkanes	25.4 directing groups, activation/deactivation, directing groups in synthesis.	26.2 identifying aldehydes and ketones, 2,4 -DNP, Tollens reagent
9.1 Enthalpy changes, enthalpy profiles, standard conditions, definitions	13.1 Alkenes, bonding, shapes and physical properties	Assessment: Chapter 25 Test	26.3 carboxylic acids, solubility, strength, reactions
9.2 Measuring enthalpy changes, $q=mcT$, apparatus PAG 3	13.2 stereoisomerism, E/Z isomerism	Chapter 29 29.1 chromatography and functional group analysis, TLC, gas	26.4 esters, acyl chlorides, acid anhydrides, esterification, hydrolysis of esters

		chromatography, qualitative organic analysis (synoptic) PAG 7	
9.3 Bond Enthalpies	13.3 electrophilic addition reactions of alkenes	29.2 NMR spectroscopy, chemical shift, TMS, deuterated solvents.	Assessment: Chapter 26 test
9.4 Hess' Law and Enthalpy cycles,	13.4 The mechanism of electrophilic addition	29.3 carbon -13 NMR, interpretation	Chapter 27 27.1 amines, primary, secondary, tertiary, reactions of amines, preparation of aliphatic and aromatic amines
Chapter 10 10.1 Rates of reaction, factors, collisions, experimental methods	13.5 addition polymerisation	29.4 Proton NMR, equivalent protons, integration, spin spin coupling, proton exchange in OH/NH groups	27.2 amino acids, reactions, amides, optical isomerism and chirality
10.2 Catalysts	Assessment: Chapter 12 and 13 test	29.5 interpreting NMR spectra	27.3 condensation polymers, polesters, polyamides, hydrolysis.
10.3 Boltzmann distribution, temperature and catalysts	14.1 physical properties of the alcohols, primary, secondary and tertiary alcohols	29.6 combined spectroscopic techniques (synoptic content from chapters 17 and 29)	Chapter 28 28.1 carbon carbon bond formation, nitriles, alkylation of benzene
10.4 dynamic equilibrium and Le Chatelier's principle. Pressure, temperature, concentration and catalysts	14.2 reactions of alcohols, combustion, oxidation, substitution, elimination	Assessment: Chapter 29 Test	28.2 practical techniques, filtration under vacuum, recrystallisation, melting point determination PAG 6
10.5 Kc part 1	15.1 hydrolysis of haloalkanes, nucleophilic substitution mechanism, rates of hydrolysis		Assessment: Chapter 27 and 28 Test
	15.2 halogen radical catalysis of ozone depletion		
	Assessment: Chapter 14 and 15 Test		
	16.1 practical techniques using quickfit apparatus, preparation and purification of an organic liquid PAG 5		
	16.2 complex organic synthesis		
	Assessment: Chapter 16 test		
	17.1 mass spectroscopy as an analytical tool		
	17.2 IR Spectroscopy		
	Assessment: Chapter 17 Test		

Year 12 End of Year Exam

Module 1	Practical skills, synoptic, assessed in all three papers	Module 5	Physical chemistry and transition elements, paper 1
Module 2	Foundations in chemistry, assessed in all three papers	Module 6	Organic chemistry and analysis, paper 2
Module 3	Periodic table and energy, paper 1	Paper 3 is synoptic and focuses on longer, unstructured questions	
Module 4	Core organic chemistry Paper 2		

Practical Work is assessed throughout the course and in the terminal exams. Practicals in 12 different Practical Assessment Groups (PAG) are teacher assessed for competence in a wide range of skills. This leads to the award of a separate Practical Endorsement that sits alongside the A Level

In addition to the assessments shown, there are mock exams in January Year 12, November Year 13 and February Year 13.