

KS5 Curriculum Plan 2022-2023

Year 12	TOPIC	LP1 <i>Amounts of substance</i>	LP2 <i>Acids, bases and redox</i>	LP3 <i>Basic concepts of organic chemistry</i>	LP4 <i>Core organic chemistry, alkenes, alcohols and halogenalkanes</i>	LP5 <i>Organic synthesis and spectroscopy</i>
		Moles, empirical formula, determination of formula, moles and volume, Mr of gases, reacting masses, atom economy, identifying unknown metals PAG.	Acids, bases and neutralisation, titrations PAG. Redox, redox reactions, oxidation and reduction.	Nomenclature, organic, molecular formula, displayed formula, skeletal formula, aliphatic, alicyclic, aromatic, alkyl, isomerism, radical, homologous series, heterolytic fission.	Alkenes, alkene reactions, polymers, properties of alcohols, reactions of alcohols, halogenalkanes, reactions of halogenalkanes, Organic synthesis techniques, preparation of and organic liquid PAG	Identifying functional groups, synthetic routes, mass spectroscopy and infra red spectroscopy continuous method PAG
	<i>Skills</i>	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				
	<i>Key Vocab</i>	Mole, Mr, empirical formula, molecular formula, Avogadro's constant, molar gas volume, atom economy	Acid, base, proton, strong acid, weak acid, alkali, neutralisation, titration, burette, pipette, indicator, redox, oxidation, reduction, oxidation state	Nomenclature, organic, molecular formula, displayed formula, skeletal formula, aliphatic, alicyclic, aromatic, alkyl, isomerism, radical, homologous series, heterolytic fission, functional group, stereoisomerism	Alkene, unsaturated, double bond, addition reactions, polymerisation, alcohols, functional group, dehydration, combustion, halide substitution, hydrolysis, ozone, quickfit apparatus	Quickfit apparatus, Synthetic routes, Mass spectroscopy, molecular ion peak, fragmentation peaks, infra red spectroscopy

Year 13	TOPIC	LP1 <i>Aromatic chemistry, carbonyls and carboxylic acids</i>	LP2 <i>Amines, amino acids and proteins, organic synthesis</i>	LP3 <i>Chromatography and spectroscopy, acids, bases and pH</i>	LP4 <i>Acids, bases and pH continued, buffers and neutralisation</i>	LP5
	<i>Knowledge</i>	Benzene, electrophilic substitution reactions of benzene, chemistry of phenol, directing groups, carbonyl compounds, aldehydes and ketones, carboxylic acids and derivatives Drawing organic molecules using structural, displayed and skeletal formula Drawing reaction mechanisms	Amines, Amino acids, isomerism of amino acids, condensation polymers, carbon-carbon bond formation, further practical techniques, further synthetic routes, Synthesis of and organic solid PAG. Qualitative analysis of functional groups PAG Drawing organic molecules using structural, displayed and skeletal formula Drawing reaction mechanisms CPAC Investigative skills This unit builds on from LP1 and yr12 organic to look at carbonyl compounds and their reactions. It then moves on to carboxylic acids their reactions and the compounds which can be derived from them. The unit also covers synthetic routes which builds on from yr12 to look at multistep synthesis reactions	TLC chromatography, testing for functional groups, Carbon NMR, Proton NMR, Bronsted -Lowry acids and bases, pH scale, acid dissociation constant, weak acids. This unit builds on the organic analysis unit in Yr12 to further explore analytical techniques such as TLC, Testing for functional groups Carbon NMR and Proton NMR.	pH and strong bases, pH measurement PAG, Buffer solutions, Buffer solutions in the body, neutralisation.	
	<i>Skills</i>	Drawing organic molecules using structural, displayed and skeletal formula Drawing reaction mechanisms Drawing organic molecules using structural, displayed and skeletal formula Drawing reaction mechanisms CPAC Investigative skills Rf calculations Interpretation of graphs MS Standard form conversions MS Rearranging of equations and formula MS Conversions between units MS CPAC Investigative skills Standard form conversions MS Rearranging of equations and formula MS Conversions between units MS Plotting and interpretation of graphs				
	<i>Key Vocab</i>	Benzene, aromatic, kekulé model, Pi bond, electrophilic substitution, nitration and halogenation, phenol, acidity, directing groups, carbonyl, aldehyde, ketone, oxidising agent, carboxylic acid, esterification, acyl chlorides	Amine, Amino acid, protein, functional group, optical isomerism, monomer, polymer, repeating unit, addition polymer, condensation polymer	TLC, mobile phase, stationary phase, solvent, Rf value, chromatogram, carbon NMR, Proton NMR, Splitting pattern, coupling, chemical shift, TMS, Bronsted-Lowry acid and base, proton donor, proton acceptor, monobasic, dibasic and tribasic acids, acid dissociation constant, K_a , pK_a .	pH, base, alkali, pH curve, titration, neutralisation	