



Curriculum Plans – Key Stage 5 Chemistry

Please find below a detailed outline of the curriculum covered in Chemistry through Year 13 in Key Stage 5.

Year 13

Block 1	Block 2	Block 3	Block 4	Block 5	Block 6	Block 7
<p>Unit 19 – Lattice energy</p> <ul style="list-style-type: none"> • Lattice energy • Enthalpy change of atomisation and electron affinity • Born-Haber cycles • Factors affecting the value of lattice energy • Ion polarisation • Enthalpy changes in solution <p>Unit 20 – Electrochemistry</p> <ul style="list-style-type: none"> • Redox reactions • Electrolysis • Quantitative electrolysis • Electrode potentials • Measuring standard electrode potentials • Using E values • Cells and batteries 	<p>Unit 21 – Further aspects of equilibria</p> <ul style="list-style-type: none"> • Ionic product of water • pH calculations • Dissociation constant • Indicators • Titrations • Buffers • Equilibrium and solubility • Partition coefficients <p>Unit 22 – Reaction kinetics</p> <ul style="list-style-type: none"> • Factors affecting rate • Rate of reaction • Rate equations • Reaction orders • Rate constant • Reaction mechanisms • Catalysis <p>Unit 23 – Entropy and Gibbs free energy</p> <ul style="list-style-type: none"> • Introduction • Spontaneous change • Calculating entropy changes • Entropy and temperature • Entropy, enthalpy and free energy • Gibbs free energy 	<p>Unit 24 – Transition elements</p> <ul style="list-style-type: none"> • What are transition elements? • Physical properties • Redox reactions • Ligands and complex formation <p>Unit 25 – Benzene and its compounds</p> <ul style="list-style-type: none"> • Benzene ring • Reactions of arenes • Phenol and its reactions <p>Unit 26 – Carboxylic acids and their derivatives</p> <ul style="list-style-type: none"> • Acidity • Oxidation • Acyl chlorides 	<p>27 – Organic nitrogen compounds</p> <ul style="list-style-type: none"> • Amines • Formation of amines • Amino acids • Peptides • Reactions of amides • Electrophoresis <p>Unit 28 – Polymerisation</p> <ul style="list-style-type: none"> • Condensation polymerisation • Synthetic polyamides • Biochemical polymers • Importance of H-bonding in DNA • Polyesters • Polymer design • Degradable polymers • Polymer deductions 	<p>Unit 29 – Analytical chemistry</p> <ul style="list-style-type: none"> • Chromatography • H¹NMR • C¹³NMR • Mass spectrometry <p>Unit 30 – Organic synthesis</p> <ul style="list-style-type: none"> • Designing new medicinal drugs 	<p>Revision lessons</p> <p>A-level Exam</p> <p>Revision lessons</p>	<p>Revision Lessons</p> <p>A-level Exam</p>
End of Unit Assessment	End of Unit Assessment	End of Unit Assessment	End of Unit Assessment	End of Unit Assessment	External assessment	External assessment
		Data Average for Autumn Report		Data average for Spring Report	Cambridge exam	Cambridge exam
Autumn		Spring		Summer		