

Year 13 Chemistry Curriculum

Core knowledge/skill development: YEAR 13	Core knowledge/skill development: YEAR 13	Sequence:	Assessment:	Literacy, numeracy, PSHE, FBV, other links	ACP and VAA development:	Home learning and enrichment
TERM 1 Module 5 Physical chemistry and transition elements		<p>TEACHER 1 Module 5 Physical chemistry and transition elements</p> <p>5.1 Rates, equilibrium, and pH <u>Chapter 22.3, 22.4 & 22.5 – Enthalpy & Entropy</u></p> <ul style="list-style-type: none"> Enthalpies of hydration and solution Entropy Gibbs free energy <p><u>Chapter 18 Rates of reactions</u></p> <ul style="list-style-type: none"> Concentration time graphs Rate-concentration graphs Rate determining step Arrhenius equation 	<p>End of Chapter 22 & 18 assessments.</p> <p>60 min assessment made up of exam questions</p> <p>Year 13 Mock Assessments</p>	<p>Understand and use the symbol =</p> <p>Change the subject of an equation</p> <p>Use an appropriate number of significant figures.</p> <p>Find arithmetic means.</p> <p>Use calculators to find and use logarithmic functions – A level only.</p> <p>Plot two variables from experimental or other data.</p> <p>Understand and use the symbol ></p>	<p>1. Analysing, 2. Linking, 3. Meta-thinking, 4. Creating and 5. Realising.</p> <p>Core Practicals – ACPs – Analysing – Complex and multistep problem solving</p> <p>VAA – Agile – Enquiring & Hard working – Practice.</p>	<p>Homework: Kerboodle – practice exam questions.</p> <p>Uplearn tasks</p> <p>Revision for End of Chapter Tests.</p> <p>Independent study booklets</p>

<p>Module 6 Organic chemistry and analysis</p>		<p>PAG 9 – Rates of reaction – continuous monitoring method 9.1 Rate of decomposition of hydrogen peroxide (suggested)</p> <p>PAG 10 Rates of reaction – initial rates method 10.3: Rates – activation energy</p> <p>TEACHER 2</p> <p>Module 6</p> <p>PAG 6 – Synthesis of an organic solid 6.1 Synthesis of aspirin OR PAG 6 – Synthesis of an organic solid 6.2 Preparation of benzoic acid</p> <p>6.2.1 – Amines</p> <p><u>Chapter 27 Amines</u></p> <ul style="list-style-type: none"> • Introduction to amines • Reaction of amines • Amides 	<p>End of Chapter 26, 27, 28 & 29 Assessments</p> <p>60 min assessment made up of exam questions</p>	<p>Use ratios, fractions and percentages.</p> <p>Use an appropriate number of significant figures.</p> <p>Substitute numerical values into algebraic equations using appropriate units for physical quantities.</p> <p>Recognise and make use of appropriate units in calculation.</p> <p>Recognise and use expressions in decimal and ordinary form.</p> <p>Find arithmetic means.</p> <p>Recognise and use expressions in decimal and ordinary form</p>	<p>Using knowledge of Structure of Organic Compounds and linking to their behaviour in mechanisms – ACPs – Linking - generalisation and Analysing – Complex and Multi-step problem solving</p> <p>Core Practicals – ACPs – Analysing – Complex and multistep problem solving</p> <p>VAA – Agile – Enquiring & Hard working – Practice.</p>	
---	--	--	--	---	---	--

	<p>6.2 Nitrogen compounds, polymers and synthesis</p> <p>PAG 7 – Qualitative analysis of organic functional groups</p> <p>7.3 Identifying organic unknowns 3</p> <p>PAG 4 – Qualitative analysis of ions –</p> <p>4.3 Identifying unknowns 3</p> <p>Organic chemistry and analysis</p> <p>From 6.2.2 Amino acids, amides and chirality</p> <p>6.3 Analysis</p> <p><u>Chapter 28 Organic synthesis</u></p> <ul style="list-style-type: none"> • Further practical techniques • Increasing carbon chain length <p><u>Chapter 29 Chromatography and spectroscopy</u></p> <ul style="list-style-type: none"> • Thin layer chromatography • Gas chromatography • NMR spectroscopy • Carbon-13 NMR • Proton NMR 				<p>Homework: Kerboodle – practice exam questions.</p> <p>Uplearn tasks</p> <p>Revision for End of Chapter Tests.</p> <p>Independent study booklets</p>
--	--	--	--	--	--

<p>TERM 2</p> <p>Module 5 Physical chemistry and transition elements</p>		<p>TEACHER 1</p> <p>Module 5 Physical chemistry and transition elements <u>Chapter 19 Equilibrium</u></p> <ul style="list-style-type: none"> • Kc calculations • Position of equilibrium • Kc & Kp calculations <p><u>Chapter 20 Acids, bases and pH</u></p> <ul style="list-style-type: none"> • Acid and base conjugate pairs • pH scale • Ka and strong acids • pH and weak acids • pH and strong bases <p>PAG 11: pH measurement 11.2: pH – titration curves</p> <p>5.2 Energy <u>Chapter 21 Buffers and neutralisation</u></p> <ul style="list-style-type: none"> • Buffers • Buffers in the body • neutralisation and pH curves <p>TEACHER 2</p> <p>Remainder of Module 5</p>	<p>Chapter 19, 20, 21 Assessments</p> <p>60 min assessment made up of exam questions</p>	<p>Understand and use the symbol =</p> <p>Change the subject of an equation.</p> <p>Use an appropriate number of significant figures.</p> <p>Find arithmetic means.</p> <p>Use calculators to find and use logarithmic functions – A level only.</p> <p>Plot two variables from experimental or other data.</p> <p>Understand and use the symbol ></p> <p>Use ratios, fractions and percentages.</p> <p>Use an appropriate number of significant figures.</p> <p>Substitute numerical values into algebraic equations</p>	<p>1. Analysing, 2. Linking, 3. Meta-thinking, 4. Creating and 5. Realising.</p> <p>Core Practicals – ACPs – Analysing – Complex and multistep problem solving</p> <p>VAs – Agile – Enquiring & Hard working – Practice.</p>	<p>Homework: Kerboodle – practice exam questions.</p> <p>Uplearn tasks</p> <p>Revision for End of Chapter Tests.</p> <p>Independent study booklets</p>
--	--	---	--	--	--	---

		<p><u>Chapter 23 Redox and electrode potentials</u></p> <ul style="list-style-type: none"> • Redox reactions • Iodine thiosulfate titrations • Electrode potentials • Fuel cells <p>PAG 8 – Electrochemical cells 8.1 Electrochemical cells 1 PAG 12 – Research skills</p> <p><u>Chapter 24 Transition elements</u></p> <ul style="list-style-type: none"> • d-block elements • formation and shapes of complex ions • ligand substitution and precipitation reactions • redox and qualitative analysis • Condensation polymers • Polymer hydrolysis • Thin layer chromatography • Gas chromatography • NMR spectroscopy • Carbon-13 NMR • Proton NMR 	<p>Chapter 23, 24 Assessments</p> <p>60 min assessment made up of exam questions</p>	<p>using appropriate units for physical quantities.</p> <p>Recognise and make use of appropriate units in calculation.</p> <p>Recognise and use expressions in decimal and ordinary form.</p> <p>Find arithmetic means.</p> <p>Recognise and use expressions in decimal and ordinary form</p>	<p>Core Practicals – ACPs – Analysing – Complex and multistep problem solving</p> <p>VAA's – Agile – Enquiring & Hard working – Practice.</p>	<p>Homework: Kerboodle – practice exam questions.</p> <p>Uplearn tasks</p> <p>Revision for End of Chapter Tests.</p> <p>Independent study booklets</p>
<p>TERM 3</p> <p>Consolidation</p>		<p>Thorough revision and consolidation of all A Level content.</p>			<p>1. Analysing, 2. Linking, 3. Meta-thinking, 4. Creating and</p>	<p>Homework: Kerboodle – practice exam questions.</p>

		Synoptic Paper practice (main focus)			5. Realising.	Uplearn tasks Revision for Final examinations
--	--	---	--	--	----------------------	--