



Year 11

Subject and Year Group	Autumn 1 Year 11	Autumn 2 Year 11	Autumn 2 Year 11	Spring 1 Year 11	Spring 2 Year 11	Summer 1 Year 11
Topic/Unit to be studied	C8: Chemical analysis	C2: Structure, bonding, and properties C5: Energy changes	C3: Quantitative chemistry	C4: Chemical change part 2 - Salts and Electrolysis	Revision for examination	Revision for examination
Core Knowledge (Substantive knowledge)	Purity of substances and how to test for purity. Chromatography as an analytical technique in chemistry. Testing for gases. <i>Testing for unknown ions and spectroscopic techniques (T)</i> RP6 - Separation of coloured compounds with paper chromatography RP7 - Chemical tests to identify unknown ions (T)	Learning to represent types of bonding with dot cross diagrams. Forming links between the structure and properties of different compounds. Uses of polymers and nanotechnology (T) To observe, describe and calculate energy change in reactions in terms of exothermic and endothermic reactions. <i>Chemical and fuel cells (T)</i> RP4 - Temperature change in solutions	Applying knowledge of atoms to calculate Mr and to balance equations. Amounts of substance as masses, concentrations, and gas volumes (T) <i>Yield and atom economy (T)</i>	Synthesis and name salts from neutralisation reactions. Build on knowledge of reactivity of metals to describe extraction by electrolysis. RP1 -Preparation of a soluble salt RP2 - Titration (T) RP3 - Electrolysis of solutions	Students use this time to consolidate their learning and practise exam technique.	Students use this time to consolidate their learning and practise exam technique.



<p>Core Skills (Disciplinary Knowledge)</p>	<ul style="list-style-type: none"> - Use appropriate techniques, apparatus, and materials to carry out chromatography and gas tests. - Apply mathematical concepts to calculate Rf values. - Use of decimals, and significant figures in calculations for chromatography. - Present and record observations from gas tests and positive and negative ion tests. 	<ul style="list-style-type: none"> - Using models to develop understanding, and to help explain properties - <i>Apply mathematical concepts to calculate SA:V ratios (T)</i> - Identify anomalies and apply mathematical concepts to calculate means. - Present data using appropriate methods, including tables and graphs including those with two lines of best fit - Make predictions using scientific knowledge and understanding. - Select, plan and carry out the most appropriate types of scientific enquiries to test predictions, including identifying independent, dependent and control variables. - Make and record observations and measurements using a range of methods; and evaluate the reliability of methods and suggest possible improvements. - Interpret data to draw accurate conclusions. - Apply mathematical concepts to calculate bon 	<ul style="list-style-type: none"> - Apply mathematical concepts to use and rearrange equations to calculate A_r, M_r masses, moles, concentration, % mass - Understand, use and convert SI units. - Use of decimals, and significant figures - <i>Apply mathematical concepts to use and rearrange equations to calculate atom economy, % yield, gas volumes (T)</i> 	<ul style="list-style-type: none"> - Use appropriate techniques, apparatus, and materials during laboratory work, paying attention to health and safety. - Select, plan and carry out methods to make salts from acids and metals, acids and carbonates and acids and bases - Select, plan and carry out the most appropriate types of scientific enquiries to test predictions, including identifying independent, dependent and control variables for electrolysis of solutions. - Make and record observations and measurements using a range of methods; and evaluate the reliability of methods and suggest possible improvements. - <i>Reading new equipment accurately within a titration (T)</i> 		
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Assessment	End of Unit assessment (MCQ/short answer/long answer) with interleaved content from previous units	End of Unit assessment (MCQ/short answer/long answer) with interleaved content from previous units	End of Unit assessment (MCQ/short answer/long answer) with interleaved content from previous units	End of Unit assessment (MCQ/short answer/long answer) with interleaved content from previous units	End of Unit assessment (MCQ/short answer/long answer) with interleaved content from previous units	End of Unit assessment (MCQ/short answer/long answer) with interleaved content from previous units
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