

Year (Lesson per fortnight)	Autumn 1 (7 wks)	Autumn 2 (7)	Spring 1 (7)	Spring 2 (6)	Summer 1 (5)	Summer 2 (7)
Year 11 (4)  Approx 64 Lessons total	<p>Approx 14 Lessons</p> <p><b>C2b-Rates of reaction</b></p> <p><b>What will be learnt</b></p> <ol style="list-style-type: none"> <li>1-Measuring the rate of reaction</li> <li>2-Effect of concentration</li> <li>3-Effect of temperature</li> <li>4-Effect of surface area</li> <li>5-Effect of a catalyst</li> <li>6-Effect of pressure</li> <li>7-Collision theory</li> <li>8-Reversible reactions</li> <li>9-Le Chatelier's principle</li> <li>10-Revision</li> <li>11-Test</li> </ol> <p><b>Main outcomes</b></p> <p>To understand the role that different factors can have on the rate and extent of chemical reactions. To understand how to collect and analyse data to assess the rate of a reaction and how that may impact chemical production in the real world. Application of the theory of equilibrium on chemical reactions.</p> <p><b>Skills involved</b></p> <p><b>Practical skills</b></p> <p>Writing methods. Making observations. Use of different concentrations. Making solutions to</p>	<p>Approx 14 Lessons</p> <p><b>C2c-Organic Chemistry</b></p> <p><b>What will be learnt</b></p> <ol style="list-style-type: none"> <li>1-Crude oil and alkanes</li> <li>2-Fractional distillation</li> <li>3-Properties of hydrocarbons</li> <li>4-Cracking and alkenes</li> <li>5-Alkenes and alcohols</li> <li>6-Alcohols</li> <li>7-Carboxylic acids</li> <li>8-Polymers</li> <li>9-Addition polymerisation</li> <li>10-Condensation polymerisation</li> <li>11-Amino acids and DNA</li> <li>12-Revision</li> <li>13-Test</li> </ol> <p><b>Main outcomes</b></p> <p>To understand the impact of crude oil on our day to day lives, how it is processed and separated and the uses it has. To understand the different chemical families that can be produced and used to make a variety of compounds.</p> <p><b>Skills involved</b></p> <p><b>Practical skills</b></p> <p>Combustion of fuels. Reactions of carboxylic acids. Polymer synthesis.</p> <p><b>Maths skills</b></p>	<p>Approx 14 Lessons</p> <p><b>C2d-Chemical analysis</b></p> <p><b>What will be learnt</b></p> <ol style="list-style-type: none"> <li>1-Pure substances, mixtures and formulations</li> <li>2-Chroatography</li> <li>3-Testing for gases</li> <li>4-Flame tests</li> <li>5-Testing with sodium hydroxide</li> <li>6-Testing for negative ions</li> <li>7-Instrumental analysis</li> <li>8-Revision</li> <li>9-Test</li> </ol> <p><b>Main outcomes</b></p> <p>To understand how chemistry is used to analyse substances all around us, to identify unknown compounds, for quality controls, for food labelling and energy analysis. To be able to describe a number of different chemical tests and evaluate their effectiveness compared to instrumental techniques.</p> <p><b>Skills involved</b></p> <p><b>Practical skills</b></p> <p>Chromatography and calculating R<sub>f</sub> values. Testing for a range of gases. Flame tests and identifying substances by</p>	<p>Approx 10 Lessons</p> <p><b>C2e-The Earth's resources</b></p> <p><b>What will be learnt</b></p> <ol style="list-style-type: none"> <li>1-Using Earth's resources</li> <li>2-Water treatment</li> <li>3-Waste water treatment</li> <li>4-Alternative extraction methods</li> <li>5-Life cycle assessments</li> <li>6-Ways of reducing resources</li> <li>7-Corrosion and prevention</li> <li>8-Alloys as useful materials</li> <li>9-Glass, ceramics and composites</li> <li>10-Haber process</li> <li>11-Production and use of NPK fertilisers</li> <li>12-Revision</li> <li>13-Test</li> </ol> <p><b>Main outcomes</b></p> <p>To appreciate how the world around us provides all of our resources. To understand the difference between finite and renewable resources and understand our role in a sustainable future and what part Chemistry plays in that.</p> <p><b>Skills involved</b></p> <p><b>Practical skills</b></p>	<p>Approx 12 Lessons</p> <p><b>Revision</b></p>	<p>Approx 14 Lessons</p> <p><b>Exam Leave</b></p>

	<p>different concentrations. Collection of gases by 2 different methods.</p> <p><b>Maths skills</b> Data analysis. Graphs. Predictions using data and graphs. Gradients. Ratios.</p> <p><b>How will it be assessed?</b> Exam Q booklet. End of half term synoptic test. 1xRequired practical.</p>	<p>Balanced equations. Data analysis and comparison. Patterns linked to properties of compounds.</p> <p><b>How will it be assessed?</b> Exam Q booklet. End of half term synoptic test.</p>	<p>their coloured flames. Classification trees.</p> <p><b>Maths skills</b> Ratios, fractions and percentages. Graphs. Decision trees. Orders of magnitude.</p> <p><b>How will it be assessed?</b> Exam Q booklet. End of half term synoptic test. .2xrequired practicals.</p>	<p>Water analysis. Distillation. Extraction of metals.</p> <p><b>Maths skills</b> Comparing data. Mean calculations. Identifying anomalies. Ratios, fractions and percentages. Graphs. Orders of magnitude. Standard form.</p> <p><b>How will it be assessed?</b> Exam Q booklet. End of half term synoptic test. 1xrequired practical.</p>		
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