

Key Stage Four Curriculum – Carre’s Grammar School

Subject						
	Autumn 1	Autumn 2	Spring 3	Spring 4	Summer 5	Summer 6
Year 10	<p><b># Chemical calculations #</b></p> <ol style="list-style-type: none"> <li>1. Relative masses and moles</li> <li>2. Equations and calculations</li> <li>3. From masses to balanced equations.</li> <li>4. The yield of a chemical reaction.</li> <li>5. Atom economy</li> <li>6. Concentrations</li> <li>7. Titrations</li> </ol>	<ol style="list-style-type: none"> <li>8. Titration calculations</li> <li>9. Volumes of gases</li> </ol> <p><b>Chemical changes</b></p> <ol style="list-style-type: none"> <li>1. Reactivity series</li> <li>2. Displacement reactions</li> <li>3. Extracting metals</li> <li>4. Salts from metals</li> <li>5. Salts from insoluble bases</li> <li>6. Making more salts</li> </ol>	<ol style="list-style-type: none"> <li>7. Neutralisation and the pH scale</li> <li>8. Strong and weak acids</li> </ol> <p><b>Electrolysis</b></p> <ol style="list-style-type: none"> <li>1. Introduction</li> <li>2. Changes at the electrodes</li> <li>3. Extraction of aluminium</li> <li>4. Electrolysis of aqueous solutions</li> </ol>	<p><b>Energy changes</b></p> <ol style="list-style-type: none"> <li>1. Exothermic and endothermic reactions.</li> <li>2. Using energy transfers from reactions</li> <li>3. Reaction profiles</li> <li>4. Bond energy calculations</li> <li>5. Chemical cells and batteries</li> <li>6. Fuel cells</li> </ol>	<p><b># Rates and equilibrium #</b></p> <ol style="list-style-type: none"> <li>1. Rate of reaction</li> <li>2. Collision theory and surface area.</li> <li>3. The effect of temperature</li> <li>4. The effect of concentration and pressure</li> <li>5. The effect of catalysts</li> </ol>	<ol style="list-style-type: none"> <li>6. reversible reactions</li> <li>7. Energy and reversible reactions</li> <li>8. Dynamic equilibrium - Le Chatelier’s Principle.</li> <li>9. Altering conditions</li> </ol>
	<p><b>Assessment</b>  <b>October – End of term test. This test covers topics taught in Autumn 1.</b>  <b>December – End of term test. This test covers topics taught in Autumn 2</b></p>			<p><b>Assessment</b>  <b>February – End of term test. This test covers topics taught in Spring 3.</b>  <b>April- End of term test. This test covers topics taught in Spring 4.</b></p>		<p><b>Assessment</b>  <b>May – End of term test. This test covers topics taught in Summer 5.</b>  <b>End of year test – Covers any topics taught from Autumn Y9 to Summer Y10</b></p>
Year 11	<p><b>Crude oil and fuels</b></p> <ol style="list-style-type: none"> <li>1. Hydrocarbons</li> <li>2. Fractional distillation of crude oil</li> <li>3. Burning hydrocarbon fuels</li> <li>4. Cracking hydrocarbons</li> </ol> <p><b>Organic reactions</b></p> <ol style="list-style-type: none"> <li>1. Reactions of the alkenes</li> <li>2. Structures of alcohols, carboxylic acids and esters</li> <li>3. Reactions and uses of alcohols,</li> </ol>	<ol style="list-style-type: none"> <li>4. Carboxylic acids and esters</li> </ol> <p><b>Polymers</b></p> <ol style="list-style-type: none"> <li>1. Addition polymerisation</li> <li>2. Condensation polymerisation</li> <li>3. Natural polymers</li> <li>4. DNA</li> </ol> <p><b>Chemical analysis</b></p> <ol style="list-style-type: none"> <li>1. Pure substances and mixtures</li> </ol>	<ol style="list-style-type: none"> <li>2. Analysing chromatograms</li> <li>3. Testing for gases</li> <li>4. Tests for positive ions</li> <li>5. Tests for negative ions</li> <li>6. Instrumental analysis</li> </ol>	<p><b># Using our resources #</b></p> <ol style="list-style-type: none"> <li>1. Rusting</li> <li>2. Useful alloys</li> <li>3. The properties of polymers</li> <li>4. Glass ceramics and composites</li> <li>5. Making ammonia – the Haber process</li> <li>6. The economics of the Haber process</li> <li>7. Making fertilisers in the lab</li> <li>8. Making fertilisers in industry</li> </ol>	Structured revision time	Study leave and exams
	<p><b>Assessment</b>  <b>October – End of term test. This test covers topics taught in Autumn 1.</b>  <b>November – Mock test 1. This test covers topics taught from Term 1 Y9 to end of chapter 7 (paper 1 GCSE).</b></p>			<p><b>Assessment</b>  <b>February – End of term test. This test covers topics taught in Spring 3.</b>  <b>March - Mock test 2 – all topics covered to date relevant to paper 2.</b></p>		<p><b>Additional assessments by topic as necessary to assist with revision.</b>  <b>Note # in case of lock down do not do Chemical calculations” but do “rates from summer term 5 in Y10 KS4” or “Using our resources” from term 4 Y11.</b>  <b>Chemical calculations needs to be carefully taught.</b></p>

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