

Year 10 Chemistry	Half Term 1	Half Term 2	Half Term 3	Half Term 4	Half Term 5	Half Term 6
Knowledge	<p><b>Recap particle model</b></p> <p><b>Quantitative Chemistry</b></p> <ul style="list-style-type: none"> <li>Relative mass and moles</li> <li>Equations and calculations</li> <li>Masses to balanced equations</li> <li>Percentage yield</li> <li>Atom economy</li> <li>Concentration</li> <li>Titration and calculations</li> <li>Volume of gases</li> </ul> <p><b>The Earth's Resources</b></p> <ul style="list-style-type: none"> <li>Potable water and treating wastewater</li> <li>RP13 Purification of water x2</li> <li>HT extracting metals</li> <li>Life cycle assessment x2</li> <li>Reducing the use of resources</li> </ul>	<p><b>Chemical Analysis</b></p> <ul style="list-style-type: none"> <li>Pure substances and mixtures</li> <li>Chromatography</li> <li>RP6 Chromatography x2</li> <li>Identifying gasses x2</li> <li>Tests for positive ions</li> <li>Tests of negative ions</li> <li>Instrumental analysis</li> <li>RP7 Unknown chemicals test x2</li> </ul> <p><b>Structure and Bonding</b></p> <ul style="list-style-type: none"> <li>States of matter</li> <li>Atoms into ions</li> <li>Ionic bonding</li> <li>Giant ionic structures</li> <li>Covalent bonding</li> <li>Structure of simple molecules</li> <li>Giant covalent structures</li> <li>Fullerenes and graphene</li> <li>Giant metallic structures</li> <li>Nanoparticles and application</li> </ul>	<p><b>Periodic Table</b></p> <ul style="list-style-type: none"> <li>Periodic table</li> <li>Electron structure</li> <li>Groups 1,7, and 0</li> <li>Transition metals</li> </ul> <p><b>Crude oil and fuels</b></p> <ul style="list-style-type: none"> <li>Crude oil, Hydrocarbons and Alkanes</li> <li>Fractional distillation</li> <li>Properties of hydrocarbons</li> <li>Cracking and Alkenes</li> </ul> <p><b>Organic reactions</b></p> <ul style="list-style-type: none"> <li>Reactions of Alkenes</li> <li>Structures of alcohols,</li> <li>Reactions and uses of alcohols</li> <li>Carboxylic acids and esters</li> </ul>	<p><b>Polymerisation</b></p> <ul style="list-style-type: none"> <li>Addition polymerisation</li> <li>Condensation polymerisation</li> <li>Natural polymers</li> <li>DNA</li> </ul> <p><b>Chemical Changes</b></p> <ul style="list-style-type: none"> <li>Oxidation and Reactivity Series</li> <li>Displacement</li> <li>Extracting metals x2</li> <li>HT Oxidation and reduction</li> </ul>	<p><b>Chemical Changes Continued</b></p> <ul style="list-style-type: none"> <li>Acids and metals (Zn, Fe and Mg with HCl + H<sub>2</sub>SO<sub>4</sub>)</li> <li>Neutralisation and salt production x2</li> <li>Soluble salts</li> <li>RP1 Making a soluble salt x2</li> <li>HT Strong and weak acids</li> </ul> <p><b>Electrolysis</b></p> <ul style="list-style-type: none"> <li>Electrolysis of molten ionic compounds</li> <li>Extracting metals</li> <li>Electrolysis of aqueous solutions x2</li> <li>RP3 Electrolysis x2</li> <li>HT Half equations</li> </ul>	<p><b>Energy Changes</b></p> <ul style="list-style-type: none"> <li>Exothermic and endothermic reactions</li> <li>RP4 Temperature change x2</li> <li>Reaction Profiles x2</li> <li>HT Bond energy calculations</li> <li>Chemical cells and batteries</li> <li>Fuel cells</li> </ul>
Working Scientifically Skills	<ul style="list-style-type: none"> <li>safe use of a range of equipment to purify and/or separate chemical mixtures including evaporation, distillation</li> </ul>		<ul style="list-style-type: none"> <li>safe use of a range of equipment to purify and/or separate chemical mixtures including chromatography</li> <li>safe use of appropriate heating devices and techniques including use of a Bunsen burner</li> <li>use of appropriate qualitative reagents and techniques to analyse and identify unknown samples or products including gas tests, flame test and precipitation reactions</li> </ul>	<ul style="list-style-type: none"> <li>use of appropriate apparatus to make and record a range of measurements accurately including mass</li> <li>safe use of appropriate heating devices and techniques including use of a Bunsen burner and a water bath or electric heater</li> <li>use of appropriate apparatus and techniques for the measurement of pH in different situations</li> </ul>		<ul style="list-style-type: none"> <li>use of appropriate apparatus to make and record a range of measurements accurately including volume of liquids</li> <li>use of appropriate qualitative reagents and techniques to analyse and identify unknown samples or products including the determination of concentrations of strong acids and strong alkalis</li> </ul>
Core Practical			Chromatography Identifying ions	Purification of Water		Neutralisation using titration method
Independent Learning Link	<a href="#">Atomic Structure and the Periodic Table</a>	<a href="#">Bonding and Matter</a>	<a href="#">Quantitative Chemistry</a>	<a href="#">The Atmosphere</a> <a href="#">Sustainability</a>	<a href="#">Organic Chemistry</a>	<a href="#">Titrations</a>

Year 11 Chemistry	Half Term 1	Half Term 2	Half Term 3	Half Term 4	Half Term 5	Half Term 6
Knowledge	<p><b>Metals, Acids and Bases</b></p> <ul style="list-style-type: none"> <li>Oxidation and reactivity series</li> <li>Displacement</li> <li>Extracting metals</li> <li>Redox OILRIG</li> <li>Acids and metals ( Zn, Fe, Mg and Cu with H<sub>2</sub>SO<sub>4</sub>)</li> <li>Neutralisation and salt production</li> <li>Soluble salts with acids and insoluble base</li> <li>Strong and weak acids pH</li> </ul>	<p><b>Electrolysis</b></p> <ul style="list-style-type: none"> <li>Electrolysis of molten ionic compounds</li> <li>Extracting metals</li> <li>Electrolysis of aqueous solutions</li> <li>RP Electrolysis</li> <li>HT Half equations</li> </ul>	<p><b>Energy Changes</b></p> <ul style="list-style-type: none"> <li>Exothermic and Endothermic reactions</li> <li>RP Temperature change</li> <li>Reaction profiles ( Energy level diagrams)</li> <li>HT Bond Energy calculations</li> <li>Chemical cells and batteries</li> <li>Fuel cells</li> </ul> <p><b>Rates of Reaction</b></p> <ul style="list-style-type: none"> <li>Collision theory</li> <li>Temperature and rate</li> <li>Concentration/ pressure and rate</li> <li>Surface area, catalyst and rate</li> </ul>	<p><b>Equilibria</b></p> <ul style="list-style-type: none"> <li>Reversible reactions</li> <li>Dynamic equilibria</li> <li>Changing conditions on equilibrium</li> <li>Haber process</li> <li>Fertilisers in the lab and industry</li> </ul> <ul style="list-style-type: none"> <li>Rusting; Alloys</li> <li>Polymers, glass, ceramics and composites</li> </ul>	<p><b>Consolidation</b></p>	
Working Scientifically Skills	<ul style="list-style-type: none"> <li>safe use of appropriate heating devices and techniques including the use of a Bunsen burner and water bath or electric heater</li> <li>safe use of a range of equipment to purify and/or separate a chemical mixture including evaporation, filtration and crystallisation</li> <li>safe use and careful handling of gases, liquids and solids, including careful mixing of reagents under controlled conditions, using appropriate apparatus to explore chemical changes and/or products</li> </ul>	<ul style="list-style-type: none"> <li>use of appropriate apparatus and techniques for conducting and monitoring chemical reactions including appropriate reagents and/or techniques for the measurement of pH in different situations</li> <li>use of appropriate apparatus and techniques to draw, set up and use electrochemical cells for separation and production of elements and compounds</li> </ul>	<ul style="list-style-type: none"> <li>use of appropriate apparatus to make and record a range of measurements accurately, including mass, temperature and volume of liquids</li> <li>making and recording appropriate observations during chemical reactions including changes in temperature</li> <li>making and recording appropriate observations during chemical reactions including the measurement of rates of reaction by a variety of methods such as production of gas and colour change</li> </ul>			
Core Practical	Making salts	Electrolysis	Temperature Change Rates of reaction			
Independent Learning Link	<a href="#">Reactions of Metals</a>	<a href="#">Electrolysis</a>	<a href="#">Exothermic and Endothermic reactions</a>  <a href="#">Rates of Reaction</a>	<a href="#">Reversible Reactions</a>	<a href="#">AQA Chemistry GCSE</a>	<a href="#">AQA Chemistry GCSE</a>