



## Curriculum Overview for Chemistry Year 10

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| <p><b>Half Term 1: Bonding, structure and properties</b></p> <p><b>Substantive Knowledge:</b><br/>Describe states of matter, predict state changes and explain what happens during changes of state.<br/>Identifying and describing ionic, covalent, giant covalent and metallic bonding.<br/>Explaining physical properties of ionic, covalent, giant covalent (diamond, graphene, graphite, silicon dioxide) and metallic bonding.<br/>Describing polymers and their properties.<br/>Describe what an alloy is and explain its properties.<br/>Triple only – describe nanoparticles and their uses.</p> <p><b>Disciplinary Knowledge:</b><br/>Analysis of data<br/>Surface area calculations<br/>Draw dot and cross diagrams to show ionic and covalent bonding</p>  |    | Skim and Scan of source information<br>Decoding terms<br>Etymology of key terms  |
|  |    | Ionic, Covalent, Metallic Bonding, Electrostatic<br>Electrons, Groups, Ions, Delocalised,<br>Solid, Liquid, Gas<br>Symbols, Molecules, Polymers, Alloys,<br>Metals, Carbon, Diamond, Graphite,<br>Graphene, Fullerenes, Triple:<br>nanoparticles |
|  |    | Baseline<br>Recall questions to start every lesson<br>Recall test<br>Review sheet<br>End of unit assessment  |
|  |  | Revision Card preparation for every lesson<br>Recall test<br>Review sheet<br>Repetition of use of revision cards for end of unit assessment  |
| <p><b>Half Term 2: Chemical changes</b></p> <p><b>Substantive Knowledge:</b><br/><u>Reactivity of metals</u><br/>Link oxidation and reduction to chemical reactions. Describe displacement reactions. Explain oxidation, reduction and displacement are used to extract metals. HIGHER – oxidation and reduction in terms of electrons. Describe chemical reactions of metals with acids and acids and metal carbonates. Identify bases. Describe neutralisation reactions. Name salts. REQUIRED PRAC - Describe the practical of soluble salts. Identify the ions in acids and alkalis. Describe the pH scale. Identify the reaction which causes water to made in a neutralisation reaction. TRIPLE – Describe how to carry out titrations. TRIPLE – Calculate chemical quantities in titrations.<br/><u>Electrolysis</u><br/>Predict the products of molten binary ionic substances. Explain why a mixture is used as an electrolyte. Explain why the positive electrode must be replaced. Explain how ions become atoms at electrodes. Predict the products of aqueous solutions containing ionic compounds. REQUIRED PRAC – Describe the practical of aqueous ionic solutions. Describe the test for chlorine gas. HIGHER - Describe reactions using half equations.</p> <p><b>Disciplinary Knowledge:</b><br/>Analysis of data<br/>Describing a method<br/>Identifying variables</p> |  | Skim and Scan of source information<br>Decoding terms<br>Etymology of key terms  |
|  |  | Oxidation, Reduction, Acid, Alkali, Base,<br>Displacement, Neutralisation, Strong,<br>Weak, Dilute, Concentration, Electrode,<br>ions, Electrolyte, Cathode, Anode, Ions,<br>Aqueous, Ionic, Atoms, compound                                     |
|  |  | Baseline<br>Recall questions to start every lesson<br>Recall test<br>Review sheet<br>End of unit assessment  |
|  |  | Revision Card preparation for every lesson<br>Recall test<br>Review sheet<br>Repetition of use of revision cards for end of unit assessment  |