

	<p><b>Intent</b>  <b>To develop students' understanding of matter and substances, to develop practical skills, to develop skills in data analysis and problem solving, to develop investigative and critical thinking skills, to develop chemical literacy to allow students to make sense of the world around them and scientific issues.</b></p>		
<p><b>Year 10 Chemistry</b></p>	<p><b>Term 1 September to December</b>  C0 Formulae Equations and Hazards  Review of C8a and C8b Fuels and Earth Science  Review of C2 States of Matter and Mixtures  C1a Atomic Structure and the Periodic Table  C6 Groups and the Periodic Table</p>	<p><b>Term 2 January to Easter</b>  C7: Rates and energy  C1b Structure and Bonding  C1c Quantitative Chemistry (Into Term 3)  <b>Triple SC9 Separate Chemistry (9b, 9c , 9d)</b></p>	<p><b>Term 3 Easter to July</b>  Combined C4 Metals and Equilibria  <b>Triple C9e Properties of Matter</b>  <b>Triple C9a Quantitative Chemistry</b></p>
<p><b>Knowledge</b>  (facts, information, concepts and key terminology)</p>	<p>Learns hazards symbols for chemical and precautions  Learn chemical formulas of substances  Describe crude oil formation and the uses and properties of fractions  Describe combustion reactions of hydrocarbons and the problems associated with the products as well as nitrogen oxides and Sulphur dioxide  Describe the composition of today's atmosphere and processes that have changed it in the past and in the modern day  Name the changes of state and describe the arrangement, motion and energy of particles in each state  Describe the structure of the atom in relation to the position of the element and data on the periodic table  Describe the chemical reactions and trends physical properties of the elements in Groups 1 and 7  Explain the physical properties of Group 0 and uses of the noble gases</p>	<p>Explain factors that affect the rates of chemical reactions and energy changes in reactions</p> <p>Explain how covalent and ionic bonds form</p> <p>Link the type of structure and bonding a substance has to its physical properties, such as melting and boiling point, conductivity and malleability</p> <p><b>TRIPLE- Describe the structure , physical properties and chemical reactions of alkanes, alkenes, polymer alcohols and carboxylic acids</b></p>	<p>List properties of metals  List ways of extracting metals  Corrosion and extraction of metals in terms of oxidation and reduction  Describe a use of ammonia  The terms "reversible reaction" and "dynamic equilibrium"</p> <p><b>Triple- Reagents and test used for positive and negative ions and the results.</b>  <b>Triple-Ste the properties and uses of nanoparticulate materials, polymers, metals, composites and ceramics</b></p>
<p><b>Understanding</b>  (ability to connect and synthesise knowledge within a context)</p>	<p>Justify reasons for selecting a particular practical procedure to separate different mixtures.  Interpret data about metal reactions from the reactivity series  Apply patterns on chemical reactions studied for groups 1 and 7 elements</p>	<p>Plan, and select equipment and variables for investigating reaction rates and exothermic and endothermic reactions</p> <p><b>Calculate relative formula mass and concentration and empirical formula (HT- Calculate reacting masses and moles) TRIPLE</b></p>	<p>Link properties of metals to their uses  Interpret data about metal reactions from the reactivity series  Apply patterns on chemical reactions of metals to new situations  HT-Predict how changing temp, pressure and conc. can affect the position of equilibrium</p>
<p><b>Skills</b>  (successful application of knowledge and understanding to a specific task)</p>	<p>Represent any chemical reactions studied using word, balanced and ionic equations. (HT)</p>	<p>Interpret experimental data from table and graphs to draw conclusions about rates and energy of reactions  Represent any chemical reactions studied using word, balanced and ionic equations.(HT) Half equations(HT) including state symbols  Calculate relative formula mass and concentration and empirical formula (HT- Calculate reacting masses and moles) <b>TRIPLE- Calculate concentrations from titration data, atom economy and molar gas volumes</b></p>	<p><b>TRIPLE- Use data about a material and select for a suitable use Interpret results from qualitative ion tests to identify unknown ionic substances</b></p>
<p><b>Formal Assessments</b>  (those done by all/vast majority of the cohort)</p>	<p>End of topic tests  AFL Starter tasks on Year 9 work- Blast form the past resource pool  Verbal feedback</p>	<p>End of topic tests for each unit</p>	<p>Mock 1 on Paper 2 (Triple and Combined)</p>
<p>By the end of the year students on course for at least a grade 5 will...</p> <p>Be able to recall the structure of the atom and have knowledge of the subatomic particles they contain  Understand hazard symbols of substances and be able to take suitable precautions e.g using acids to make salts.  Use chemical equations can be used to represent chemical reactions e.g combustion  Be able the interpret information on the periodic table about elements and apply patterns about the properties of the elements  Describe and select suitable techniques to separate pure substances from mixtures.  Appreciate that the properties of substances arise from their structure and bonding.</p>			