

Year 12 Chemistry T1

Learning Programme 3

<p>The LORIC skill focus for his LP is: RESILIENCE The Moral Virtues focus for this LP are: RESPECT and JUSTICE</p> <p>Respect - treat others how you would wish to be treated yourself. Justice - our College rules are fair and reasonable.</p> <p>What will I be learning about in this Learning Programme? The chemical and physical properties of alkanes, alkene and alcohols; How to draw reaction mechanisms to describe the reactions of alkanes, alkenes and alcohols; What isomerism is, how it occurs and how to identify isomerism in alkenes.</p> <p>Where have I seen this learning before? You have covered alkanes, alkenes and alcohols at KS4 and you have been introduced to nomenclature and reactions mechanisms in LP2</p> <p>What could I use it for? Yr13 further study of organic reactions and functional groups; Careers in chemical synthesis and productions</p>		<p>Literacy:</p> <ul style="list-style-type: none"> Capital letters must be used at the start of sentences and for the first letter of proper nouns Full stops must be used at the end of a sentence Question marks must be used at the end of a question Apostrophes should only be used for possession or omission Days of the week and months must be spelled correctly Key words must be spelled correctly
<p>In LP3.1, I will know: 06/01/25 - (WK 2)</p> <p>the low reactivity of alkanes with many reagents in terms of the high bond enthalpy and very low polarity of the σ-bonds present; the reaction of alkanes with chlorine and bromine by radical substitution using ultraviolet radiation, including a mechanism involving homolytic fission and radical reactions in terms of initiation, propagation and termination.</p>	<p>Key Vocabulary</p> <p>homolytic fission</p>	<p>Homework</p> <p>homolytic fission</p>
<p>In LP3.2, I will know: 13/01/25 - (WK 1)</p> <p>alkenes as unsaturated hydrocarbons containing a C=C bond comprising a π-bond and a σ-bond ; with restricted rotation of the π-bond; how to explain isomerism in alkenes.</p>	<p>Key Vocabulary</p> <p>Isomerism</p>	<p>Homework</p> <p>Alkenes practice questions</p>
<p>In LP3.3, I will know: 20/01/25 - (WK 2)</p> <p>how to use Cahn-Ingold-Prelog (CIP) priority rules to identify the E and Z stereoisomers; how to determine possible E/Z or cis-trans stereoisomers of an organic molecule, given its structural formula.</p>	<p>Key Vocabulary</p> <p>Stereoisomerism</p>	<p>Homework</p> <p>Isomerism questions</p>
<p>In LP3.4, I will know: 27/01/25 - (WK 1)</p> <p>how to describe the reactivity of alkenes in terms of the relatively low bond enthalpy of the π-bond; how to describe addition reactions of alkenes with halogens to form dihaloalkanes, including the use of bromine to detect the presence of a double C=C bond as a test for unsaturation in a carbon chain.</p> <p>Extended Task.</p>	<p>Key Vocabulary</p> <p>Alkene</p>	<p>Homework</p> <p>Alkene reactions practice questions</p>
<p>In LP3.5, I will know: 03/02/25 - (WK 2)</p> <p>how to describe addition reactions of alkenes with steam in the presence of an acid catalyst (e.g. H₃PO₄) to form alcohols; how to describe addition polymerisation of alkenes and substituted alkenes.</p>	<p>Key Vocabulary</p> <p>Polymerisation</p>	<p>Homework</p> <p>Alkenes reactions questions</p>
<p>In LP3.6, I will know: 10/02/25 - (WK 1)</p> <p>the benefits for sustainability of processing waste polymers. Describe benefits to the environment of development of biodegradable and photodegradable polymers; the polarity of alcohols and explain, in terms of hydrogen bonding, the water solubility and the relatively low volatility of alcohols compared with alkanes.</p>	<p>Key Vocabulary</p> <p>Alcohols</p>	<p>Homework</p> <p>Alcohols practice questions</p>
<p>LP3 RLW, I will: 24/02/25 - (WK 2)</p> <p>review my learning, recalling and applying key knowledge, and focus on closing any gaps in my knowledge.</p>		
<p>In LP3.7, I will know: 03/03/25 - (WK 1)</p> <p>the polarity of alcohols and explain, in terms of hydrogen bonding, the water solubility and the relatively low volatility of alcohols compared with alkanes; how to explain the oxidation of alcohols by an oxidising agent.</p> <p>Extended Task.</p>	<p>Key Vocabulary</p> <p>Polarity</p>	<p>Homework</p> <p>Alcohols practice questions</p>
<p>Resources to support learning: Knowledge organiser, Microsoft TEAMS, machem guy YouTube videos. Knock hardy and a-levelchemistry.co.uk</p>		
<p>FFET Award Challenge for this Learning Programme: Complete three independent learning tasks and evaluate how they have helped you</p>		

PRT Task 1

PRT Task 2