

Year 12 Chemistry T2

Learning Programme 4

<p>The LORIC skill focus for his LP is: INITIATIVE. The Moral Virtues focus for this LP are: INTEGRITY and GRATITUDE.</p> <p>Integrity - Having strong moral principles. I will show integrity by taking responsibility for my actions. Gratitude - Feeling and expressing thanks. I will show gratitude by saying please and thank you.</p> <p>What will I be learning about in this Learning Programme? How energy within a chemical system changes during chemical reactions.</p> <p>Where have I seen this learning before? Definition of enthalpy, endothermic, exothermic, closed system, standard conditions.</p> <p>What could I use it for? Year 13 chemistry in Born Haber cycles, reaction rates and equilibrium.</p>		<p>Literacy Non-Negotiables:</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 Vocabulary to be taught using the Frayer model
<p>In LP4.1, I will know: 09/03/26 - (WK 2)</p> <p>how to determine enthalpy changes directly from appropriate experimental results, including use of the relationship $q = mc\Delta T$; how to describe Hess' law for construction of enthalpy cycles and calculations to determine indirectly enthalpy changes from unfamiliar enthalpy cycles.</p>	<p>Frayer Model Words</p> <p>Energy</p>	<p>Homework</p> <p>Enthalpy change questions</p>
<p>In LP4.2, I will know: 16/03/26 - (WK 1)</p> <p>how to describe the effect of concentration, including the pressure of gases, on the rate of a reaction, in terms of frequency of collisions; how to calculate reaction rate from the gradients of graphs measuring how a physical quantity changes with time; how to explain the role of a catalyst in increasing reaction rate without being used up by the overall reaction.</p>	<p>Frayer Model Words</p> <p>Frequency</p>	<p>Homework</p> <p>Rate of Reaction questions</p>
<p>In LP4.3, I will know: 23/03/26 - (WK 2)</p> <p>how to explain the role of a catalyst in allowing a reaction to proceed via a different route with lower activation energy, as shown by enthalpy profile diagrams; how to explain the role of a catalyst in allowing a reaction to proceed via a different route with lower activation energy, as shown by enthalpy profile diagrams. Extended Task.</p>	<p>Frayer Model Words</p> <p>Catalyst</p>	<p>Homework</p> <p>Catalyst and RoR questions</p>
<p>In LP4.4, I will know: 13/04/26 - (WK 1)</p> <p>how to explain that catalysts have great economic importance and benefits for increased sustainability by lowering temperatures and reducing energy demand from combustion of fossil fuels with resulting reduction in CO₂ emissions; how to calculate reaction rate from the gradients of graphs measuring how a physical quantity changes with time.</p>	<p>Frayer Model Words</p> <p>Equilibrium</p>	<p>Homework</p> <p>Le Chateliers Principle questions</p>
<p>In LP4.5, I will know: 20/04/26 - (WK 2)</p> <p>how to list and describe the techniques and procedures used to investigate changes to the position of equilibrium for changes in concentration and temperature;</p>	<p>Frayer Model Words</p> <p>Concentration</p>	<p>Homework</p> <p>Equilibrium in Industry based questions</p>
<p>In LP4.6, I will know: 27/04/26 - (WK 1)</p> <p>how to give expressions for the equilibrium constant, K_c for homogeneous reactions and calculations of the equilibrium constant, K_c from provided equilibrium concentrations. Extended Task.</p>	<p>Frayer Model Words</p> <p>Homogeneous</p>	<p>Homework</p> <p>Equilibrium constant questions</p>
<p>In LP4.7, I will know: 04/05/26 - (WK 2)</p> <p>how to explain the importance to the chemical industry of a compromise between chemical equilibrium and reaction rate in deciding the operational conditions.</p>	<p>Frayer Model Words</p> <p>Heterogeneous</p>	<p>Homework</p> <p>Equilibrium constant questions</p>
<p>Resources to support learning: Revision booklets/Text book. MaChem Guy on YouTube</p>		
<p>FFET Award Challenge for this Learning Programme: Independently complete a past paper</p>		

