




<p><b>This half term: Skills, Knowledge and Understanding to be developed:</b></p> <ul style="list-style-type: none"> <li>• <b>Skills (students <u>WILL BE ABLE</u> to by the end of the Learning Programme):</b> Students will be able to: calculate enthalpy changes using Hess' Law, Bond Energies, Calorimetry and use Mass Spectrometry, Infra Red Spectroscopy and NMR Spectrometry to identify molecules</li> <li>• <b>Knowledge (students <u>WILL KNOW</u> by the end of the Learning Programme):</b> Students will be know: students will know the definitions of enthalpy change of reaction, enthalpy change of formation and enthalpy change of combustion.</li> <li>• <b>Understanding (students <u>WILL DEMONSTRATE THEIR UNDERSTANDING</u> by the end of the Learning Programme):</b> Students will demonstrate their understanding by answering past paer questions.</li> </ul>		<p><b>Key Terms / Words:</b> Enthalpy, formation, combustion, energy cycle, mass spectra, ifra red spectroscopy, nuclear magnetic resonance.</p>	
<p><b>LP 5 – Week 1&amp;2 Learning Outcomes:</b></p> <p><b>1. Enthalpy change or reaction and formation.</b> Enthalpy change of reaction, and standard molar enthalpy change of formation, <math>\Delta_f H^\ominus</math></p> <p><b>2. Enthalpy change of combustion</b> Enthalpy change of combustion</p> <p><b>3. Hess' Law (2 lessons)</b> Hess's law and energy cycles</p>		<p>Success criteria:</p> <ol style="list-style-type: none"> <li>1. Define of enthalpy change of reaction, enthalpy change of formation and enthalpy change of combustion.</li> <li>2. Calculate Hess' law Cycles</li> </ol>	<p><b>Homework LP 5 1/3</b></p> <p><b>HOMEWORK 1</b> Revise for APP1</p>
<p><b>LP 5 – Week 3&amp;4 Learning Outcomes:</b></p> <p><b>5. Average bond enthalpies</b> Concept of average bond enthalpies and how they are used to carry out simple calculations</p> <p><b>6. Calorimetry</b> How to calculate enthalpy changes</p> <p><b>7. Practice Questions</b> Students will practice using Hess' Law and being able to answer Calorimetry questions</p> <p><b>8. CDG1</b></p>	<p style="text-align: center;"></p> <p style="text-align: center; border: 2px solid blue; padding: 5px;"><b>CDG</b></p> <div style="border: 2px solid red; padding: 5px; margin: 5px auto; width: 60px; text-align: center;">Mark</div> <div style="border: 2px solid red; padding: 5px; margin: 5px auto; width: 60px; text-align: center;">Grade</div>	<p>Success criteria:</p> <ol style="list-style-type: none"> <li>3. To be able to calculate average bond enthalpies</li> <li>4. To be able to calculate average bond enthalpies.</li> <li>5. To be able to calculate calorimetry.</li> </ol>	<p><b>Homework LP 5 2/3</b></p> <p><b>HOMEWORK 2</b> Complete examination questions on learning outcome</p>
<p><b>LP 5 – Week 5&amp;6 Learning Outcomes:</b></p> <p><b>9. Mass Spectra</b> use of mass spectra in identification of chemical structure</p> <p><b>10. IR Spectra</b> use of IR spectra in identification of chemical structure</p> <p><b>11.Low Res NMR</b> low resolution H NMR spectra in identification of chemical structure</p> <p><b>12.High Res NMR</b> high resolution H NMR spectra in identification of chemical structure.</p>		<p>Success criteria:</p> <ol style="list-style-type: none"> <li>6. Be able to identify structures using Mass Spectrometry</li> <li>7. Be able to identify structures using Infra red Spectroscopy.</li> <li>8. Be able to identify structures using High and Low Res Sectrometry.</li> </ol>	<p><b>Homework LP 5 3/3</b></p> <p><b>HOMEWORK 3</b> Answer past paper questions on Structure identification</p>
<p><b>LP 5 – Week 7 Learning Outcomes.</b></p> <p><b>13. Carbon-13 NMR</b> Students will be able to describe the structures of diamond and graphite and relate their properties and uses to their bonding and structure.</p> <p><b>13. Chemical Analysis Practice Questions</b> Students will know practice combining all 3 techniques to find the chemical composition.</p>		<p>Success criteria:</p> <ol style="list-style-type: none"> <li>9. Be able to identify structures using Carbon - 13 Spectrometry.</li> <li>10. Be able to identify structures using a variety of techniques</li> </ol>	