

| Unit Overview: Practical scientific procedures and techniques   |       |       |   |       |       |   |                |    |
|---|-------|-------|---|-------|-------|---|----------------|----|
| Half- Term:   | AUT 1 | AUT 2 | SPR 1   | SPR 2 | SUM 1 | SUM 2   | No of Lessons: | 78 |
| <p><b><u>Key Focus for Unit:</u></b><br/> <i>What is the key knowledge being delivered?<br/>           What is the intent of this unit?</i></p>   |       |       |   |       |       |   |                |    |
| <p>In this topic students explore a range of techniques and practical's used in the real world of science. Carrying out practical laboratory techniques correctly and accurately is an important part of the work of the laboratory technician. Techniques developed over a century ago are still used in modern analytical chemistry and are the basis for analysis in a range of occupations related to the chemical industry, medicine, pharmaceuticals, education, forensic investigation and many more. Following the correct laboratory practice will improve your analytical skills, develop your transferable skills and help to appreciate the need for attention to detail in an area that affects all our lives.</p>   |       |       |   |       |       |   |                |    |
| <p><b><u>Key Knowledge and Big Ideas:</u></b><br/> <i>What <b>Powerful Knowledge</b> and <b>Big Ideas</b> are explored in this Unit?<br/>           How have these progressed from previous learning? What <b>gaps in knowledge</b> have you identified from <b>baselining</b> and how are the being closed?</i></p>  |       |       |   |       |       |   |                |    |
| <p>Chemical Reactions - to understand how atoms are rearranged either my releasing or taking in energy<br/>           Atoms: atoms make up everything and in all reactions atoms are rearranged but never created or destroyed.</p>   |       |       |   |       |       |   |                |    |
| <p><b><u>Unit Assessment:</u></b><br/> <i>How will this unit be assessed?<br/>           What is the frequency of assessments – baselines etc?</i></p>  |       |       |   |       |       |   |                |    |
| <p>The unit is assessed using internally assessed tasks assigned by the teacher. Throughout this unit, students' complete tasks enabling them to complete their assignments. Completing these activities will not mean that you have achieved a particular grade, but you would have carried out the useful research and experimentation to enable you to complete your assignment.<br/>           The assignments set will consist of a number of tasks designed to meet specific criteria. The assignment will be written as a laboratory report to show that students can:</p> <ul style="list-style-type: none"> <li>• Demonstrate correct and appropriate practical techniques</li> <li>• Present findings to your peers and review procedures and applications of your work during class discussion</li> <li>• Analyse, evaluate and review your own performance in a critique that highlights your strengths and weaknesses</li> </ul> |       |       |   |       |       |   |                |    |
| <b><u>Key Skills Explored</u></b>   |       |       | <b><u>Vocabulary Selected for DVI</u></b>   |       |       | <b><u>Links to Previous Unit</u></b>  |                |    |
| Practical skills<br>Interpreting results<br>Analysing results<br>Investigative skills   |       |       | Cell, tissue, Neuron, Epithelial,<br>electron, trend, displacement, wave,<br>amplitude, frequency, wavelength |       |       | Students build upon their understanding from the following GCSE topics:<br>- Chemical calculations<br>- Chemical analysis |                |    |
| <b><u>Links to Careers/Employability</u></b>  |       |       | <b><u>How does this unit prepare students for the next unit?</u></b>  |       |       |   |                |    |

- Laboratory technicians

Knowledge and skills developed over the course of this unit enables students to access courses around the following areas:  
Chemical industry, medicine, pharmaceuticals, education and forensic investigation.