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| <b>Exam Board:</b>                             | AQA  |
| <b>Qualification:</b>                          | GCSE Combined Science: Trilogy 8464                              |
| <b>Assessment Information:</b>                 | 6 exams (2 biology, 2 chemistry, and 2 physics), each 75 minutes |
| <a href="#">Link to official specification</a> |  |

**Department Information:**

*Physics, Biology and Chemistry are popular and successful subjects at Furze Platt. The Department aims to provide a supportive, stimulating, dynamic and academically challenging experience for all students. Over recent years, the Department has gone from strength to strength, and standards and students' results are high. In Year 11, those students studying the Combined Science Trilogy course will receive 9 hours of science each fortnight, 3 of which will be chemistry lessons. Students sit the AQA exam board for GCSE Science examinations.*

**ACHIEVE in the curriculum:**

*The curriculum has been designed with the ACHIEVE values at its core. Lessons have been written to encourage ambition through careers links and highlighting historic role models and pioneers in science. They have also been written with the intent of being enjoyable and giving opportunities for students to celebrate their own successes. Collaboration is a key aspect of the scientific method and students will develop this and their versatility through the use of class practical activities, as well as through paired and group theory work. Students will develop integrity through their completion of independent home learning and through self-marking and peer-marking their work.*

**Curriculum Aims & Intent:**

*The course is designed to develop students' appreciation and understanding of how chemistry and science underpin our everyday lives, with the aspiration of inspiring the next generation of chemists and innovators. Over the full course, students will learn things such as how the different types of chemical bonds and structures influence a material's properties and uses, how the speed of chemical reactions can be controlled to enable greater efficiencies and economical viability, and how chemical analysis enables forensic identification of unknown substances.*

**Resources:**

*Textbooks and revision guides: Oxford University Press GCSE Chemistry for Combined Science (Trilogy) textbook (available online via Kerboodle), Oxford University Press GCSE Chemistry for Combined Science (Trilogy) revision guide, Oxford University Press GCSE Chemistry for Combined Science (Trilogy) workbook (Foundation and higher tier editions available).*

*Websites: BBC Bitesize, GCSEPod, Focus eLearning, Physics and Maths Tutor*

**How we keep parents informed:**

*Year 11 - Progress reports are published 4 times per year, in October, December, February and March, with a face-to-face parents' evening in October.*

**How parents can help their child:**

*Regularly check Class Charts to keep track of homework that has been set and make sure that test dates are noted.*

*Assist with homework where possible and make sure that students are revising for tests using revision guides, Kerboodle and BBC Bitesize.*

*Liaise with teachers and attend Parents' evening.*

*Secure copies of the Oxford University Press GCSE Chemistry for Combined Science (Trilogy) revision guide and workbook, available through the school via parentmail.*

*Encourage students to create and use revision resources for their current and previous learning, such as flash cards, and to source and attempt past paper questions via the Physics and Maths Tutor website.*

| What we study and when: |  |   |   |  |  |
|-------------------------|--|---|---|--|--|
| Term                    | Unit, Topic Or Summary Of Work Covered | Knowledge, Understanding & Skills Developed   | ACHIEVE / Personal Development Focus  | How The Work Is Assessed   | Careers Links  |
| 1                       | <b>C12: The Earth's resources</b>      | <p>The major aims of this unit are for students to understand:</p> <ul style="list-style-type: none"> <li>• The difference between renewable and finite resources</li> <li>• The advantages and disadvantages of recycling, landfill, and incineration of waste</li> <li>• How a life cycle assessment is used to evaluate sustainable practices</li> <li>• The processes involved in treating and purifying water to make it suitable for human consumption</li> <li>• The processes involved in treating wastewater so that it can be released back into the environment</li> </ul>   | This topic's pioneer is Erin Brockovich, whose integrity led her to take the largest case action in US history against PG&E for chromium contamination of drinking water. | Mid-topic 6 mark practice exam question and end of topic assessment.   | Links to numerous careers linked to environmental sciences, the example given is sustainability consultancy.             |
| 2                       | <b>C5: Chemical changes</b>            | <p>The major aims of this unit are for students to:</p> <ul style="list-style-type: none"> <li>• Understand the reactivity series and use it predict how different metals will react.</li> <li>• Describe the extraction of metals from ores depending on the position of the metal in the reactivity series.</li> <li>• Describe how acids react with metals, bases, and carbonates using word and symbol equations.</li> <li>• Explain the concept of pH and ionisation with regards the neutralisation reactions of acids and alkalis.</li> <li>• Understand the process of making soluble and insoluble salts and how to purify these salts using crystallisation.</li> </ul> | This topic's pioneer is Jabir ibn Hayyan, whose ambition and versatility led him to develop the earliest known systematic classification system of chemical substances.   | Mid-topic 6 mark practice method question and end of topic assessment. | The ability to design materials reactivity is essential to a career in chemical engineering.                             |
| 3                       | <b>C5: Chemical changes</b>            | <p>The major aims of this unit are for students to:</p> <ul style="list-style-type: none"> <li>• Describe electrolysis as the breakdown of an ionic compound using electricity.</li> <li>• Predict the products formed at the electrodes during the electrolysis of molten or aqueous ionic compounds.</li> <li>• Describe how electrolysis is used in the extraction of aluminium from aluminium oxide using cryolite.</li> <li>• Define the terms oxidation and reduction, applying these terms to electrolysis.</li> <li>• Describe the equipment and setup used for a simple electrolysis experiment.</li> </ul>  | This topic's pioneer is Gregory L Hillhouse, whose integrity led him to become a LGBTQIA+ advocate and mentor with the scientific community..                             | Mid-topic 6 mark practice exam question and end of topic assessment.   | Electrolysis is an important process to those working with metallurgy, it is how pure samples of metal can be extracted. |
| 4                       | <b>C6: Electrolysis</b>                | <p>The major aims of this unit are for students to:</p> <ul style="list-style-type: none"> <li>• Describe electrolysis as the breakdown of an ionic compound using electricity.</li> <li>• Predict the products formed at the electrodes during the electrolysis of molten or aqueous ionic compounds.</li> <li>• Describe how electrolysis is used in the extraction of aluminium from aluminium oxide using cryolite.</li> <li>• Define the terms oxidation and reduction, applying these terms to electrolysis.</li> <li>• Describe the equipment and setup used for a simple electrolysis experiment.</li> </ul>  | This topic's pioneer is Gregory L Hillhouse, whose integrity led him to become a LGBTQIA+ advocate and mentor with the scientific community..                             | Mid-topic 6 mark practice exam question and end of topic assessment.   | Electrolysis is an important process to those working with metallurgy, it is how pure samples of metal can be extracted. |
| 5                       | <b>Revision and exam preparation</b>   | Content retrieval and practice of content from the course. Students will attempt practice of exam questions, and develop their exam technique and revision skills to  | Students will require all the ACHIEVE values  | PPE  | The study skills developed will  |

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|   |     | maximise recollection and understanding of the course in preparation for their final examinations. | but most significantly ambition and endurance as pupils prepare for the final exams. |  | be useful in any further education or career that involves further assessments. |
| 6 | n/a |  |  |  |   |