Chemistry Department	Key Stage 4 Curriculum Plan	Year 11 (Separate Chemistry GCSE)

Exam Board:	*AQA*
Qualification:	*GCSE Chemistry 8462*
Assessment Information:	*2 exams, each 105 minutes*
Link to official specification:	*https://www.aqa.org.uk/subjects/science/gcse/chemistry-8462/specification-at-a-glance*

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 separate chemistry GCSE course will receive 4 hours of chemistry each fortnight. 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 textbook (available online via Kerboodle), Oxford University Press GCSE Chemistry revision guide, Oxford University Press GCSE Chemistry 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 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	**C15: Using our resources** **C6: Electrolysis**	The major aims of C15 are for students to understand: • Corrosion and methods to prevent it, such as galvanizing and sacrificial protection • Thermosetting and thermosoftening polymers • Composite materials and their advantages • The Haber process, it's conditions and the compromise between yield and rate • Fertilisers and how they are manufactures The major aims of this unit are for students to: • Describe electrolysis as the breakdown of an ionic compound using electricity. • Predict the products formed at the electrodes during the electrolysis of molten or aqueous ionic compounds. • Describe how electrolysis is used in the extraction of aluminium from aluminium oxide using cryolite. • Define the terms oxidation and reduction, applying these terms to electrolysis. • Describe the equipment and setup used for a simple electrolysis experiment.	C15's pioneer is Yvonne Brill, whose ambition led to the development of new rocket and jet propulsion systems in a male dominated area of science. This topic's pioneer is Gregory L Hillhouse, whose integrity led him to become a LGBTQIA+ advocate and mentor with the scientific community.	End of topic written assessment. Mid-topic 6 mark practice method question and end of topic assessment. Term 2 PPE	C15 has explicit links to agrochemistry, material science, and design. Electrolysis is an important process to those working with metallurgy, it is how pure samples of metal can be extracted.
2	**C12: Chemical analysis**	The major aims of this unit are for students to understand: • The concept of pure substances and mixtures. • Chromatography and how to perform it. • The tests for hydrogen, oxygen, carbon dioxide, and chlorine gases. • How to identify ions in compounds using flame tests and precipitation reactions. • Qualitative and quantitative analysis techniques.	This topic's pioneers are Ada Yonarth & Venki Ramakrishnan whose collaboration won them the 2009 Nobel prize for the structure and function of ribosomes.	Mid-topic 6 mark practice method question and end of topic assessment.	The ability to identify substances is crucial to forensic science and quality assurance.
3	**C14: The Earth's resources**	The major aims of this unit are for students to understand: • The difference between renewable and finite resources • The advantages and disadvantages of recycling, landfill, and incineration of waste	This topic's pioneer is Erin Brockovich, whose integrity led her to take the largest case action	Mid-topic 6 mark practice exam question and	Links to numerous careers linked to environmental sciences, the example given is

		• How a life cycle assessment is used to evaluate sustainable practices • The processes involved in treating and purifying water to make it suitable for human consumption • The processes involved in treating wastewater so that it can be released back into the environment	in US history against PG&E for chromium contamination of drinking water.	end of topic assessment.	sustainability consultancy.
4	**C13: The Earth's atmosphere**	The major aims of this unit are for students to understand: • The composition of the earth's current and early atmosphere • The evolution of the earth's atmosphere • The greenhouse effect • Human impact on the atmosphere • Common atmospheric pollutants, their causes and impacts	This topic's pioneer is Inge Lehmann, whose versatility led her to use her knowledge of physics and waves to discover the Earth's solid inner core.	Mid-topic 6 mark practice exam question and end of topic assessment.	The ability to understand and study the atmosphere underpins environmental science.
5	**Revision and exam preparation**	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 maximise recollection and understanding of the course in preparation for their final examinations.	Students will require all the ACHIEVE values but most significantly ambition and endurance as pupils prepare for the final exams.	PPE	The study skills developed will be useful in any further education or career that involves further assessments.
6	**n/a**				