Chemistry — Key Stage 3 Curriculum Plan — Year 9

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 9, students begin the fundamental content that will build towards their GCSE. They will receive 9 hours of science each fortnight, 3 of which will be chemistry lessons, with all students studying content that will form part of the AQA exam board's GCSE Chemistry specification.

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 9 - Progress reports are published 4 times per year, in October, December, March and July, with a face-to-face parents' evening in January. GCSE Options Evening is also in January.

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	**C1: Atomic structure**	The major aims of this unit are for students to: • Describe the basic structure of an atom. • Explain the historical development of atomic theory. • Perform and interpret simple chemical equations. • Understand and apply methods for separating mixtures. • Identify and define ions, atoms, isotopes.	This topic's pioneer is Maria Goeppert-Mayer, whose ambition led her to win the 1963 Nobel prize for physics.	There are two mid-topic online assessments and an end of topic written assessment.	Atomic structure continues to be explored and investigated by nuclear scientists.
2	**C2: The periodic table**	The major aims of this unit are for students to: • Understand the historical development of the periodic table. • Describe the electronic structure of atoms and how this relates to their position on the periodic table. • Identify and explain the properties and reactions of elements in Group 1 and 7. • Discuss and explain the trends in reactivity down groups. • Describe the characteristics and applications of transition elements.	This topic's pioneer is Marie Curie, whose versatility enabled her to win Nobel prizes in both chemistry and physics.	There is one mid-topic online assessment and an end of topic written assessment.	The ability to identify and predict patterns in nature is key to research scientists.
3	**C3: Structure & bonding**	The major aims of this unit are for students to: • Understand and describe the three states of matter. • Explain the formation of ions and the nature of ionic bonding and ionic lattices. • Identify covalent bonds and describe the properties of simple and giant covalent structures. • Describe the structure and bonding in giant metallic lattices. • Discuss the applications of nanoparticles, and potential environmental impacts.	This topic's pioneers are crystallographer Nina Vedeneyeva and Ruth Benerito. Nina's integrity to be true to herself led her to be an LGBTQIA+ advocate within the scientific community of the early 20th century. Ruth's versatility meant she was able to use chemistry to invent wrinkle-free cotton fibres.	There two mid-topic online assessments and a written mid-topic assessment. It assessed at the end of the topic in the end of year PPE.	This chapter explores how the properties of a material are dependent on its chemical structure, it is therefore fundamental to material scientists and designers.
4	**C3: Structure & bonding**				
5	**C3: Structure & bonding**				

6	**C9: Crude oil & fuels**	The major aims of this unit are for students to: • Understand the formation, composition, and extraction methods of crude oil. • Explain the process of fractional distillation. • Identify the structures, properties, and uses of alkanes and alkenes. • Describe the purpose, conditions and products of cracking • Compare and contrast complete and incomplete combustion	This topic's pioneer is Thomas Midgley Jr. We can learn from his story that we need to have integrity to face up to our mistakes and take account from our responsibilities.	There is one mid-topic online assessment and an end of topic written assessment.	Energy engineers manage production sites and budgets, they also work to meet environmental standards.