

Subject:

Chemistry

SUBJECT NAME Intent:

The chemistry department aims to nurture students to have an understanding of how society makes decisions about scientific issues. Students will also recognise how science contributes to the success of the economy and society as a whole. We strive to foster enthusiasm in our students for the subject as well as to develop an interest in further study and careers associated with chemistry.

Our Exam Board is: OCR

The Big Questions...

Year 12	Year 13
<p>Foundations in Chemistry:</p> <p>How do chemists use symbols to communicate? How much product can be made in a chemical reaction? What is a redox reaction? What is an orbital, subshell and energy level? How does a chemical bond affect the structure and properties of substances? Why is methane a tetrahedral molecule? Why does ice float?</p> <p>Periodic table and energy:</p> <p>How can the periodic table be used to predict properties of unknown elements? Why is the periodic table arranged in rows and columns? What defines the reactivity of elements? How can Le Chatelier's principle be used to maximise the profits of a company? Why are some reactions spontaneous? Are all chemical bonds equal?</p> <p>Core organic chemistry:</p> <p>How do IUPAC rule the world? How do we use fuels to supply the world's energy? How do organic molecules interact with the environment? What can be done to solve the plastic disposal problem facing the modern world?</p>	<p>Physical chemistry and transition elements:</p> <p>How will cars of the future be fuelled? Are battery powered planes science fiction or a future reality? What is the quantitative effect of temperature and pressure on industrial processes? What is the essential role of acids and bases on health and wellbeing? Why is your bedroom always untidy and the second law of thermodynamics?</p> <p>Organic chemistry and analysis:</p> <p>How do we synthesis useful compounds? Using modern spectroscopic techniques, how do we identify unknown compounds? What purification processes can be employed to produce high quality pharmaceutical products? How is benzene important in the production of new pharmaceutical materials? What is the role of different polymers in synthetic fibres and modern plastics?</p>

What skills will I develop?

- Students will gain and develop practical skills that are fundamental to understanding the nature of chemistry.
- Students will be able to analysis and collect empirical data.
- Students will develop problem solving skills.
- Students will learn how to evaluate results and draw conclusions.

What great resources can I use?

- <https://www.ocr.org.uk/qualifications/as-and-a-level/chemistry-a-h032-h432-from-2015/>
- <https://www.chemistryworld.com/podcasts>
- <http://www.a-levelchemistry.co.uk/>
- <https://www.senecalearning.com/>
- <https://www.chemguide.co.uk/>

How will I be assessed?

At Key stage 5 you will be assessed often in lessons by completing end of topic assessments. Teacher feedback is given both verbally as well as written feedback on required practical write ups.

Examinations:

Yr12 will complete a 4/5 week exam and two mock exams: one after Christmas and one at the end of Year 12.

Yr13 will complete a 4/5 week exam then mock exams after Christmas.

Yr13 will sit 3 exam papers in the summer term.

Three ways that parents/carers can help...

1. Keep an eye on SMHW.
2. Keep in contact with the class teacher.
3. Have your child discuss the new things they have learnt this week.