



Long Term Plan Year 11 Chemistry

Half Term	Unit Title	Key Knowledge/Content to learn and retain	Essential Skills to acquire (subject & generic)	Link to intent and ethos	Anticipated misconceptions	Links to previous KS	Link to future KS	Opportunity for stretch and high prior attainers	SMSC & British Values	Cultural Capital	Career Link
One	Organic Chemistry	The structure and properties of alkanes and alkenes Fractional Distillation and Cracking Complete and incomplete combustion (Triple Only) The structure and properties of alcohols, carboxylic acids, esters and polymers.	Using and deriving the general formula of a homologous series Predicting the properties of a compound Writing and balancing chemical equations		Students often confuse alkanes and alkenes	Students have previously looked at chemical equations as the rearrangements of atoms throughout KS3.	At A-Level students will study organic chemistry in more detail, forming most of the content of Paper Two	Explaining the properties of organic compounds linking to their structure.	The environmental impact of fossil fuels and crude oil use. Discussion of the benefits and disadvantages of the oil industry in the UK	The social, economic and environmental impact of the oil industry worldwide. A deeper understanding of how many modern materials are derived from oil.	As the central science, Chemistry opens doors to a wide range of STEM field careers
Two	Atmospheric Chemistry	The composition of the modern atmosphere and how this has changed from the formation of the Earth Human impact on the atmosphere, including greenhouse gases, climate change and global warming. The impact of major atmospheric pollutants on human health and the environment	Use of timelines Extended Writing Reading for comprehension. Evaluating the accuracy of data Using data to make predictions about the outcome of experiments Interpreting data presented in tabular or graphical form		Many students believe that oxygen is the most plentiful gas in the atmosphere, rather than Nitrogen. Many students overestimate the concentration of carbon dioxide in the atmosphere Many students confuse global warming with climate change	In KS3 students studied the atmosphere and discussed the impact of human activity on the climate. This unit builds on this by introducing a more analytical and quantitative approach to exploring human impact on the atmosphere and environment	At A-Level, students will study the impact of CFCs and the mechanism by which they have contributed to loss of ozone.	Students may be asked to compare interventions based on compromise between their environmental and economic impacts.	The effects of climate change, how every day actions contribute to climate change and what interventions can be put in place to prevent climate catastrophe	The effects of climate change, how every day actions contribute to climate change and what interventions can be put in place to prevent climate catastrophe	Climate scientist Environmental campaigner Meteorologist
Three	Using Resources	Finite and infinite resources Potable water and water treatment Life cycle assessments (Triple Only) Bioleaching and phytomining The use of alloys, polymers and composite materials The Harber Process	Safe use of laboratory equipment Interpreting data presented in tabular or graphical form Recording accurate data Simple calculations involving addition and subtraction Extended Writing Using data to evaluate and compare		The differences between potable and pure water	Students have previously studied the difference between finite and infinite resources, and this is extended in this unit; alongside the new concepts that are introduced.	At A-Level students will study processes such as the Harber Process in greater depth, and place it in its chemical and economical context.	Students could be tasked to carry out life cycle assessments of varying complexities	The social, economic and environmental impact of modern products, including how individual actions can have an impact on the environment	The social, economic and environmental impact of modern products, including how individual actions can have an impact on the environment	As the central science, Chemistry opens doors to a wide range of STEM field careers
Four		PPE's in November and February may mean that Ecology can often be taught in the first few weeks of term 4. After this is completed students will be led in detailed and planned revision sessions by staff. These will focus on paper 1 topics for the end of term 4 and paper 2 topics at the beginning of term 5.									
Five											
Six											