



# Curriculum Map



**Subject:** SCIENCE - CHEMISTRY

**Year group:** 11

	<b>Autumn 1</b>	<b>Autumn 2</b>	<b>Spring 1</b>	<b>Spring 2</b>	<b>Summer 1</b>	<b>Summer 2</b>
<b>Content</b> <i>Declarative Knowledge – ‘Know What’</i>	Chem 7: The formation, composition and separation of crude oil. Properties of different size hydrocarbons. Reactions of hydrocarbons. Fermentation to produce alcohol, structure and use of carboxylic acids. Formation of polymers through addition and condensation reactions. The naturally occurring polymers – starch, DNA, amino acids. How intermolecular forces affect properties.	Chem 8: Determining if a substance is pure. Different colours represent different elements in a flame test. Different products in reactions to produce hydroxide precipitates. Different products formed by halides in reactions with silver ions. Use of instrumental techniques to provide fast and accurate identification.	Chem 9: Composition of the Earth’s early atmosphere. Explanation of how the Earth’s atmosphere changed and the factors that affected it. Consequences of the Greenhouse Effect. How we can reduce the impact of human activity. Effects of atmospheric pollution: sulphur dioxide, oxides of Nitrogen and particulates.	Chem 10: Treatment of waste water to convert it to drinking water. Explanation of desalination. Explain how resource wastage is reduced through recycling, reducing energy consumption and reducing corrosion. Use of fertilisers to increase food yield. Production of ammonia as feedstock for fertiliser. Extracting metals through phytomining and bioleaching.		
<b>Skills</b> <i>Procedural Knowledge – ‘Know How’</i>	Chem 7: The test of saturated and unsaturated hydrocarbons. How fractional distillation works. Process of cracking. Naming and structure of organic chemicals.	Chem 8: Using filtration or distillation to separate mixtures. Use of chromatography to separate dyes. Use flame tests to analyse Gp1 [and 2] metals]. How to conduct tests for positive and negative ions.		Chem 10: How we can use resources sustainably to support future generations. Conduct Life Cycle Assessment [LCA]. Analysis and purification of water samples.		
<b>Key Questions</b>	How do we separate the fractions of crude oil?	What does this compound consist of? How can we separate...?	What processes lead to the changes in the Earth’s atmosphere?	What developments enable our activities to be more sustainable?		



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	How can we remember the structure of different homologous series?		How can we reduce the negative impacts of human activities?			
<b>Assessment</b>	Chem 7 and 6 topic test – exampro.	Chem 8, 7 and 6 test – exampro. Year 11 PPE – Paper 1 [Chem 1 to 5 assessment]	Chem 9, 8, 7, 6 test – Exampro.	Chem 10, 9, 8, 7, 6 test. March – Final Year 11 PPEs.		
<b>Literacy / Numeracy / SMSC / Character</b>	Representing chemicals using different structures: symbol, displayed formula. Sustainability of crude oil usage.	Calculation of Rf values from chromatograms. Working with specific numbers of significant figures.	Use ratios, fractions and percentages.	Switch between graphical and numerical form.		