

## Science KS4 Curriculum Intent, Implementation and Impact Overview

Year: 11 Subject: Separate Chemistry IMPLEMENTATION							
<b>INTENT</b>  (AQA GCSE Chemistry (9-1) GCSE specification coverage key concepts and skills ('Big ideas'))	Half Term 1 (7)	Half Term 2 (7)	Half Term 3 (7)	Half Term 4 (6)	Half Term 5 (5)	Half Term 6 (6)	
	<b>Context:</b> Review of paper 1 concepts C1 – C5 C7 Organic Chemistry  <b>Key Vocabulary:</b> Atom, electron, proton, neutron, ionic, covalent, hydrocarbons, melting, property, mole, mass, yield, concentration  <b>Prior Learning / LTM:</b> Y9 Chem 1, Y10 C7 1- 4  <b>Cultural Capital:</b>  Applications of chemistry in industry.	<b>Context:</b> C7 Organic Chemistry C8 Analysis <b>Key Vocabulary:</b> Carboxylic acid, alcohol, ester, combustion, incomplete, hydrolysis, condensation, polymers, chromatography, formulation  <b>Prior Learning / LTM:</b> Y9 Chem 2, C7, C1  <b>Cultural Capital:</b>  Uses of polymers and plastics	<b>Context:</b> C8 Analysis C9 Atmosphere <b>Key Vocabulary:</b> Ions, flame emission, spectroscopy, climate change, greenhouse gas, methane, global warming <b>Prior Learning / LTM:</b> Y8 earth, Y9 Chem 1, Y10 C1, C4  <b>Cultural Capital:</b>  Scientist profile Angela Lamb. Global warming and climate change impact	<b>Context:</b> C9 Atmosphere C10 Using Resources <b>Key Vocabulary:</b> Alloy, rusting, reactivity, ore , extraction , , finite , composite, polymer, phytomining , bioleaching  <b>Prior Learning / LTM:</b> Y8 Earth, Y9 Chem 2, Y10 C6, C7  <b>Cultural Capital:</b>  Green chemistry and use of resources. Carbon footprint. Communication of science ideas and concepts	<b>Context:</b> C10 Using Resources  <b>Key Vocabulary:</b> potable, desalination Reactivity, acid, alkali, ammonia, Haber process, equilibrium, reversible, fertiliser  <b>Prior Learning / LTM:</b> Y9 Chem 2, C1, C3, C4  <b>Cultural Capital:</b>  Atom economy in industry. Practical techniques, safety and development of skills.	N/A	
	All material in the Universe is made of very small particles	X	X	X	X	X	
	Objects can affect other objects at a distance				X	X	
	Changing the movement of an object requires a net force to be acting on it						
	The total amount of energy in the Universe is always the same	X		X	X	X	
	The composition of the Earth and its atmosphere			X	X		
	Our solar system is a very small part of one of millions of galaxies in the Universe						
	Organisms are organised on a cellular basis						
Organisms require a supply of energy and materials	X	X	X				
Genetic information is passed down from one generation of organisms to another							

The diversity of organisms, living and extinct, is the result of evolution						
Apply knowledge and understanding to explain observations.	x	x	X	X	X	
Use different types of scientific enquiry to answer scientific questions.	x		X	X	X	
Use technical terminology with confidence accurately and precisely.	x	x	X	X	X	
Apply mathematical knowledge to scientific understanding.	x	x	X	X	X	
Awareness of some of the social and economic implications of science	x	x	x	x	x	
<b>IMPACT</b>	<p>Assessment: Trial exam 1 - Paper 1 Extended writing salts <b>Maths skills 1</b></p> <p>Progression to KS5:  Foundations in chemistry. Periodicity and bonding. Scientific enquiry.</p>	<p>Assessment: Trial exam 2 Extended writing chromatography <b>Maths skills 2</b></p> <p>Progression to KS5:  Organic chemistry and analysis. Scientific enquiry.</p>	<p>Assessment: Trial exam 3 Extended writing changing atmosphere <b>Maths skills 3</b></p> <p>Progression to KS5:  Earth's changing atmospheres. Analytical sampling. Mass spectroscopy. Scientific enquiry.</p>	<p>Assessment: Trial exam 4 Extended writing - LCA <b>Maths skills 4</b></p> <p>Progression to KS5:  Climate change, Green chemistry, Haber process and chemical yield Scientific enquiry.</p>	<p>Assessment:  <b>External GCSE examinations May/June (AQA)</b></p> <p><b>Paper 1</b></p> <p><b>Paper 2</b></p>	

Cultural Capital is the body of knowledge a student needs so that they can flourish in the future and not be left behind. LTM = Long Term Memory.