

## Year 8 Curriculum Map for Chemistry (dept.)

What are the intended aims for this year's curriculum? For students to be able to write word and symbol equations using common formulae and symbols. To be able to identify different types of chemical reaction. For students to be able to predict the outcome of a chemical reaction based on their knowledge of periodic table and reactivity.													
Term 1		Term 2		Term 3		Term 4		Term 5		Term 6			
Topic(s): Atoms		Topic(s): Acids and Bases		Topic(s): Chemical reactions		Topic(s): Matter		Topic(s): Extraction of metals		Topic(s): Fuels			
Aim of A&R		Aim of A&R		Aim of A&R		Aim of A&R		Aim of A&R		Aim of EoY exam			
'Big idea(s)' / fundamental concepts	<i>How do we arrange the ingredients of the universe?</i>	How do use acids and alkalis?		How will substances react differently depending on their reactivity?		<i>Why does ice float?</i>		How do metals and non-metals behave differently?		<i>What is crude oil?</i>			
Knowledge to be learnt	How the structure of the atom links to its relative atomic mass and its position on the periodic table. How reactivity is linked to position in the periodic table.	<i>Recap of pH scale linked to hydrogen ion concentration, how acids and alkalis can be neutralised. How to name salts. How we can show acid and alkali reactions using word and balanced symbol equations. The symbols for the first 20 chemical elements</i>		The difference between thermal decomposition, displacement and oxidation reactions. The symbols for the first 20 chemical elements		Arrangements of particles in different states and how it effects density. The properties of different states.		The difference in pH and reactivity of metal and non-metal oxides. How some metals are exacted from ore.		Review of complete and incomplete combustion. What is the impact of human use of fuels on the environment? How can crude oil be used to make plastics? What are monomers and polymers?			
Key vocabulary	Mendeleev, proton, neutron, electron, atomic mass, mass number, group, period,	Acid, Alkali, Base, Neutralisation, Conservation of mass, atoms, molecules, compounds, mixtures, indicator, H+ ions, Hydrochloric acid, sulphuric acid, nitric acid, chloride, sulphate, nitrate,		Thermal decomposition, displacement, reactivity, oxidation, reduction, atoms, Hydrochloric acid, sulphuric acid, nitric acid, chloride, sulphate, nitrate,		Solid, liquid , gas, particles, motion, structure, density, diffusion, gas pressure, melting, freezing, sublimation, condensation, sedimentation, evaporation/boiling		Acid, Alkali, Base, electrolysis, smelting, ore, oxide, properties, reactivity.		Crude oil, alkane, alkene, monomer, polymer, climate change,			
The role of reading and comprehension	To compare and contrast the work of Newland and Mendeleev.	<i>Reading practical instructions and being able to follow them</i>		<i>Reading practical instructions and being able to follow them, understanding the order of reactivity.</i>		To understand the difference between evaporation and boiling.		To understand the different methods of extracting metals from ores.					
The role of independent extended writing	To write about the scientific process, of building on previous scientific work.	<i>To write a method to investigate how to neutralise a bee and wasp sting.</i>		Displacement disco task, to explain how reactivity effects chemical reaction.		To write a story about how an ice cube changes state describing the changes in particle energy and behaviour.		To be able to explain which extraction method is used based on the reactivity of the metal		Writing a news report on the impact of humans on the environment.			
The role of maths/ numeracy	Being able to work out the number of proton, electrons and neutrons in an element.	<i>Balancing equations and conservation of mass</i>		Balancing equations		Being able to identify state of matter using boiling point and melting point data. Calculating density.		Using pH scale to identify acid or alkali					
Links to careers/ aspirations	Chemist, Drug Discovery Chemist,	<i>Chemist, Pharmaceutical</i>		Railway engineer, Composite Scientists		Meteorologist		Metallurgical engineer		Chemist, Analytical chemist, Laboratory technician, Cosmetic scientist,			
Core skills	To be able to: predict properties of elements based on their position in the periodic table.	To be able to: identify a neutralisation reaction and write a symbol equation.		To be able to: use the reactivity series to predict the products of a reaction		To be able to: describe the motion and structure of particles in different states.		To be able to: explain using the periodic table if a substance is a metal or non-metal oxide.		To explain what crude oil is and how it can be used.			
Dept. enrichment activities								The big bang trip					
Home learning opportunities		Testing household materials and showing neutralisation of household acids and alkalis. <a href="https://www.youtube.com/watch?v=WmbjbbMnVTE">https://www.youtube.com/watch?v=WmbjbbMnVTE</a>				Fireworks in a jar <a href="https://www.youtube.com/watch?v=JgNOuNh00kg">https://www.youtube.com/watch?v=JgNOuNh00kg</a>							
		To check understanding of acids and alkalis and the process of neutralisation and Year 7 chemistry		To test if students can write balanced symbol equations and can identify the products of chemical reactions		To test to see if students can describe how particle behaviour changes as they change state.		To test to see if students can use and write chemical formulae.		To test if students can describe and draw the structure of atoms and elements and how elements are arranged in the periodic table		To assess the key points of the year, including products of reactions, structure of the atom and periodic table	