Year 10 CHEMISTRY

Overall Intent:

- Maintain curiosity through exploring the ten Big Ideas of Science
- Acquire the full range of skills to learn to apply knowledge, critique information and actively solve problems
- Have a science education to progress their understanding of the issues that shape their lives during and beyond their school years

In Year 10, students study 3 hours per fortnight of the Chemistry aspect of AQA GCSE Trilogy Combined Science (worth 2 GCSEs) or 5 hours of AQA GCSE Chemistry (a single GCSE but done in combination with the single GCSEs of Physics and Biology). They continue to explore each of the ten Big Ideas of Science, focusing on the three Big Ideas in Chemistry. These centre around Matter, Reactions and Earth Resources where they build upon previous learning and expand their understanding of each idea. Students are assessed throughout the topics using Demonstrate and Connect tasks. End of topic assessments focus on their ability to communicate their knowledge and understand key scientific concepts. Homework will be issued at least once per topic and may comprise extended research or completing a skills grid following a practical investigation. Practical work is a key part of science and as well as completing numerous practical activities students will also be required to complete a series of required practicals, where they consolidate scientific concepts, develop transferable investigative skills and acquire a range of practical skills.

	Autumn 1	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
Topic/area of study	Atomic Structure and the Periodic table recap. Bonding, structure and the properties of matter.	Quantitative chemistry	Chemical changes		Energy Changes	Rate and extent of change
Key learning aims – knowledge and skills	Recap of atomic structure as an important foundation to the new topics of bonding. Students explore how the elements of the periodic table combine to make compounds and giant structures though ionic, covalent and metallic bonding. They are able to explain how these arise and predict properties based upon their structure and bonding.	Students begin to quantify reactions through study of relative formula mass, moles, conservation of mass, balancing equations and concentration of solutions.	Students start their study of chemical changes looking at metal reactivity focusing on displacement reactions using the reactivity series and redox reactions. They investigate electrolysis of molten and dissolved substances (a required practical) and can make predictions about the products of such reactions as well as studying the commercial production of aluminium.		Reactions are explored in terms of energy given out or taken in through the making and breaking of bonds and are characterised as exothermic or endothermic reactions.	Revision and exam preparation covering all paper 1 content. Paper 2 content on rates of reaction and reversible reactions

			They complete the topic by investigating reactions of acids, in particular the formation of salts and carry out a required practical on making soluble salts.			
Assessment	End of topic tests	AP1 exam	End of topic tests	AP2 exam		End of year exam (AP3)