Key Stage 4 Curriculum

Chemistry Combined Science

THE WINSFORD ACADEMY

In Year 10 Students will study:

	Winter Term		Spring Term		Summer Term	
	Half Term 1	Half Term 2	Half Term 3	Half Term 4	Half Term 5	Half Term 6
Content	**Atomic Structure** Students study the difference between elements, compounds and mixtures and practice common separation techniques. They learn about the atom and its structure as well as the periodic table and it's development before moving onto the main groups of the periodic table.	**Structure and Bonding** The bonding involved in compounds is studied in this unit. Students discover what ionic and covalent bonding is and why different elements bond In these ways. Students learn how a compounds properties are linked to its way of bonding and how carbon has many allotropes that are al bonded in different ways.	**Chemical Quantities and Calculations** In this unit students will study the law of conservation of mass and how it is applied. They will work out the changes of mass in reactions before moving onto working out moles and balancing equations using the amount of moles of different reactants and products.	**Chemical Changes** This is a very practical based unit with students investigating the reactions of metal oxides and the importance of the reactivity series, reactions of metals with acids, neutralisation of acids and salt production, electrolysis and the application of electrolysis to extract metals.	**Energy Changes** Students study endothermic and exothermic reactions. They investigate the factors that effect the temperature change of a reaction and apply reaction profiles to a selection of different reactions.	**Rate and Extent of Chemical Change** Students study the rate of reaction, calculating the rate of reaction and investigating the factors that effect the rate of reaction. Students progress to studying reversible reactions and the way that the conditions for these reactions can be manipulated to favour the production of more reactants or products.
Homework	Past exam questions set through Teams Assignments. Units of revision and questions through Seneca Learning	Past exam questions set through Teams Assignments. Units of revision and questions through Seneca Learning	Past exam questions set through Teams Assignments. Units of revision and questions through Seneca Learning	Past exam questions set through Teams Assignments. Units of revision and questions through Seneca Learning	Past exam questions set through Teams Assignments. Units of revision and questions through Seneca Learning	Past exam questions set through Teams Assignments. Units of revision and questions through Seneca Learning

Wider Curriculum			During this Half term students may be invited to attend The Big Bang Live Event			
Assessment	Students will be assessed at the end of the unit through past exam questions that form part of an end of topic test	Students will be assessed at the end of the unit through past exam questions that form part of an end of topic test	Students will be assessed at the end of the unit through past exam questions that form part of an end of topic test	Students will be assessed at the end of the unit through past exam questions that form part of an end of topic test	Students will be assessed at the end of the unit through past exam questions that form part of an end of topic test	Students will be assessed at the end of the unit through past exam questions that form part of an end of topic test

In Year 11 Students will study:

	Winter Term		Spring Term		Summer Term	
	Half Term 1	Half Term 2	Half Term 3	Half Term 4	Half Term 5	Half Term 6
Content	**Hydrocarbons** Students study how Crude oil is made up of a mixture of fractions and how these fractions are separated from one another. Students study the properties and uses of fractions. before looking at the structure of alkanes and alkenes	**Chemical Analysis** Students study the difference between pure and impure substances and how they can be separated by chromatography. Students use different tests to identify gasses.	**The Atmosphere** Pupils study the proportion of gasses that are present in the atmosphere, how the atmosphere has evolved over time and how it is predicted to change in the future as the direct result of human activity.	**Sustainable Development** Students will study how water is treated and filtered to make potable water. They will study alternative extraction methods for metals and the life cycle assessment for different materials and products.	GCSE EXAMS	
Homework	Past exam questions set through Teams Assignments. Units of revision and questions through Seneca Learning	Past exam questions set through Teams Assignments. Units of revision and questions through Seneca Learning	Past exam questions set through Teams Assignments. Units of revision and questions through Seneca Learning	Past exam questions set through Teams Assignments. Units of revision and questions through Seneca Learning		
Wider Curriculum Offer	After school Revision	After school Revision	After school Revision Saturday Classes	After school Revision Saturday Classes		
How you will be	Students will be assessed at the end of the unit through past exam questions	Students will be assessed at the end of the unit through past exam questions	Students will be assessed at the end of the unit through past exam questions	Students will be assessed at the end of the unit through past exam		

	that form part of an end of topic test	that form part of an end of topic test	that form part of an end of topic test	questions that form part of an end of topic test	