



Chemistry Curriculum Overview - Year 12 - Teacher B

	Unit	Details
Autumn One	Quantitative Chemistry	This unit focuses on a key concept covered at GCSE 'the mole'. It provides chemists with an ability to convert between mass, concentration and volume to predict how much product can be made in a chemical reaction. Pupils will develop their mathematical skills during their study of substances and when carrying out quantitative practical work.
Autumn Two	Acid and Redox	Again building on chemical changes at GCSE, central to acids is the analysis of solutions by titration using pipette and burettes, the basis of quality testing for many materials from washing powders to medicine. In redox you learn about oxidation numbers, another essential part of a chemist's toolkit for describing chemical changes.
Spring One	Periodicity	The legacy left by Mendeleev in producing the first periodic table is developed in this topic. Periodic trends are first studied to extend the understanding of structure and bonding. Group properties are then studied using Group 2 and the halogens as typical metal and non-metal groups respectively, allowing an understanding of redox reactions to be developed further. Finally, this section looks at how unknown ionic compounds can be analysed.
Spring Two	Basic Organic Chemistry	This topic is fundamental to the study of organic chemistry. It introduces the various types of structures used routinely in organic chemistry, nomenclature, and the important concepts of homologous series, functional groups, isomerism and reaction mechanisms using curly arrows.
Summer One	Alkanes and Alkenes	Alkanes looks at the important reactions for combustion, exploited in hydrocarbon fuels such as natural gas, petrol and diesel and with halogens. Alkenes contain a double bond which gives rise to addition reaction including the formation of the important polymers required in our everyday life.
Summer Two	Alcohols	This topic looks at the properties and reactions of alcohols. The important oxidation reactions introduce new functional groups: aldehydes, ketones and carboxylic acids.