



Chemistry Curriculum Overview - Year 13 - Teacher A

	Unit	Details
Autumn One	Transition Metals	This topic provides chemists with a deeper knowledge and understanding of the periodic table within the context of the transition elements. This section includes the role of ligands in complex ions, stereochemistry, precipitation, ligand substitution and redox reactions. The colour changes and observations in these reactions increase the toolkit of qualitative inorganic tests for identifying unknown ionic compounds.
Autumn Two	Redox	Redox chemistry permeates chemistry and the introductory work in Year 12 is developed further within this section, including use of volumetric analysis for redox titrations and an introduction of electrochemistry in the context of electrode potentials.
Spring One	Kinetics	The largely qualitative treatment of reaction rates in Year 12, is developed within a quantitative and graphical context. This topic also allows chemists to develop practical quantitative techniques involved in the determination of reaction rates. Chemists will also learn how an understanding of reaction rates allows you to produce the very steps that make up reaction mechanisms. There are many opportunities for developing mathematical skills, including use of logarithms and exponents, when studying the content of this section and when carrying out quantitative practical work.
Spring Two	Enthalpy and Entropy	Born–Haber cycles are used as a theoretical model to illustrate the energy changes associated with ionic bonding. Entropy and free energy are then introduced as concepts used to predict quantitatively the feasibility of chemical change.
Summer One	Organic Aromatics	This section extends the range of functional groups encountered in Year 12. Aromatic compounds are chemicals containing a benzene ring. Many of our modern-day medicines are aromatic compounds such as aspirin, ibuprofen and TCP. Chemists will learn about the structure of benzene and study its important reactions. Directing groups are also introduced, including their importance to organic synthesis.
Summer Two	Organic Nitrogen containing compounds	Amines are organic bases, derived from ammonia. Amino acids are the building blocks of life and you will learn about their acid-base behaviour and ability to show optical isomerism.