

Year 13 CHEMISTRY

Overall intent

In year 13, Chemistry students follow a practical-based scheme of learning that allows students to achieve the Practical Endorsement, in addition to preparing them to become confident with increasingly complex knowledge, so that they can adapt what they know into different contexts and supporting them to perform to their potential in the final exams. Students gain a broad-spectrum knowledge of Chemistry that supports progression to a range of careers and which hopefully imbues a lifelong fascination with science. After a strong foundation in year 12, students are supported through the significant step up to year 13 concepts. The course inspires career decisions, as evidence by the number of our Sixth Form students who go on to science-based careers.

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Topic/area of study	THERMODYNAMICS RATE EQUATIONS AND K_p	ELECTRODE POTENTIALS ISOMERISM AND CARBONYL COMPOUNDS	ACIDS, BASES AND Ph AROMATIC COMPOUNDS	TRANSITION METALS POLYMERS, AMINO ACIDS, PROTEINS AND DNA	EXAM PREPARATION	
Key learning aims – knowledge and skills	Students will learn about enthalpy changes, enthalpy of solution, Born-Haber cycles, entropy and free energy. They will also learn about measuring rates, graphs and rate equations, initial rates method and clock reactions. Finally, they will learn about the rate-determining step	Students will learn about electrode potentials and how to measure them, electrochemical series and electrochemical cells. They will also learn about aldehydes and ketones as well as hydroxy nitriles. Finally, they will learn about carboxylic acids and	Students will learn about acids and bases, K_w and pH calculations, the acid dissociation constant, K_a , titrations and pH curves. They will also learn about buffers and how to calculate the pH of a buffer solution, benzene and reactions of benzene, amines	Students will learn about transition metal structures, isomerism and reactions. They will also learn about the formation of coloured compounds, ligand substitution reactions, titrations and catalysts. Finally, they will learn about condensations	Students will review content from throughout the course as they prepare for their final examinations	

	and the Arrhenius equation, gas equilibrium and partial pressures.	esters and their reactions, as well as acyl chlorides and acid anhydrides.	and amides and their reactions.	polymers, repeating units and disposing of polymers, structures and uses of amino acids, proteins, enzymes, DNA and Cisplatin.	
Assessment	AP1 assessment	AP2 assessment	AP3 assessment	AP4 assessment	Final exams