Croxley Danes School : Key Stage 5 Curriculum Map

Subject: Chemistry **Exam Board: OCR A**

Key Concepts

Foundations in chemistry	Periodic table and energy	Core organic chemistry	Physical chemistry and transition elements	Organic chemistry and analysis	Development of practical skills in chemistry
▪ Atoms, compounds, molecules and equations ▪ Amount of substance ▪ Acid–base and redox reactions ▪ Electrons, bonding and structure	▪ The periodic table and periodicity ▪ Group 2 and the halogens ▪ Qualitative analysis ▪ Enthalpy changes ▪ Reaction rates and equilibrium (qualitative)	▪ Basic concepts ▪ Hydrocarbons ▪ Alcohols and haloalkanes ▪ Organic synthesis ▪ Analytical techniques (IR and MS)	▪ Reaction rates and equilibrium (quantitative) ▪ pH and buffers ▪ Enthalpy, entropy and free energy ▪ Redox and electrode potentials ▪ Transition elements	▪ Aromatic compounds ▪ Carbonyl compounds ▪ Carboxylic acids and esters ▪ Nitrogen compounds ▪ Polymers ▪ Organic synthesis ▪ Chromatography and spectroscopy (NMR)	Students are expected to do a minimum of 12 PAGs (Practical Assessment Group) as part of Practical Endorsement in Chemistry. Across these 12 PAGs, the following Common Practical Assessment Criteria (CPACs) are assessed. There are 5 of these CPACs which students need to demonstrate within their PAGs: CPAC 1: Following Written Procedures CPAC 2: Applies Investigative Approaches and methods when using instruments and equipment CPAC 3: Safely uses a range of practical equipment and materials CPAC 4: Makes and records observations CPAC 5: Researches and References and Reports

What is the Croxley vision for this subject at Key Stage 5?

Our vision is to inspire a deep understanding and lifelong appreciation of the living world by delivering OCR A Level Chemistry through a range of engaging and evidence-based teaching. We aim to empower students to think critically, apply chemical principles to real-world contexts, and develop the scientific literacy and practical skills needed for further study, careers in science, and informed global citizenship. Through high expectations, inclusive practices, and a commitment to academic excellence, we aim to nurture curiosity, resilience, and a sense of wonder in every learner.

Key Stage 5	Year Group: 12 - topics are taught concurrently across 2 teachers			
	Autumn Term 1	**Autumn Term 2**	**Spring Term 1**	**Spring 2**
key concept	Foundations in chemistry and the Periodic table		Energy and core organic chemistry	
Content: (Know what…)	• Basic skills • 2.1.1 Atomic structure • 2.1.3 Amount of substance • 2.1.4 Acids • 2.1.5 Redox • 2.2.1 Electron configuration • 3.1.1 Periodicity • 2.2.2 Bonding & Structure • 3.1.4 Qualitative analysis • 3.1.2 Group 2 • 3.1.3 Group 7		• 3.2.1 Enthalpy changes • 3.2.2 Rates • 3.2.3 Chemical Equilibrium • 4.1.2 Alkanes • 4.1.3 Alkenes • 4.2.1 Alcohols • 4.2.2 Haloalkanes • 4.2.3 Organic Synthesis	
Skills: (know how…)	PAGs 1.1 Determination of the composition of copper(II) carbonate basic 1.3 Determination of the formula for magnesium oxide 2.1 Determination of concentration of hydrochloric acid 2.2 Determination of the molar mass of an acid 2.3 Identification of an unknown carbonate 4.2 Identifying unknowns 2		PAGs 3.1 Determination of the enthalpy change of neutralisation 3.2 Determination of an enthalpy change of reaction by Hess' Law 3.3 Determination of enthalpy changes of combustion 5.1 Synthesis of a haloalkane 5.3 Oxidation of ethanol Other practical: Limonene distillation	
Key vocabulary (5- 10 words)	A level Chemistry is all key vocabulary		A level Chemistry is all key vocabulary	
End of Half term assessment	Baseline assessment at start of Y12 end of topic tests AP1 assessment PAG assessments		end of topic tests PAG assessments UCAS assessment	
Planned trips / Clubs / links				

Key Stage 5	Year Group: 12 - topics are taught concurrently across 2 teachers	
	Summer 1	**Summer 2**

Key Concept	Analytical techniques and organic chemistry
Content: **(Know what…)**	● 4.2.4 Analytical techniques ● 6.1.1 Aromatic chemistry ● 6.1.2 Carbonyls
Skills: **(Know how…)**	PAGs 7.1 Identifying organic unknowns 1 6.3 Preparation of methyl 3-nitrobenzoate
Key vocabulary (5- 10 words)	A level Chemistry is all key vocabulary
End of Half term assessment	end of topic tests PAG assessments
Planned trips / Clubs / links	

Key Stage 5	**Year Group: 13 - topics are taught concurrently across 2 teachers**			
	Autumn Term 1	**Autumn Term 2**	**Spring Term 1**	**Spring 2**
key concept	Physical chemistry and organic chemistry		Physical chemistry and organic chemistry	

Content: **(Know what…)**	• 5.1.1 How fast • 5.1.2 How far • 5.1.3 Acids, bases and buffers • 5.2.1 Lattice enthalpy • 6.1.3 Carboxylic acids and esters • 6.2.1 Amines • 6.2.2 Amino acids, amides and chirality • 6.2.3 Polyesters and Polyamides	• 5.2.2 Enthalpy and entropy • 6.2.4 C-C bond formation • 6.2.5 Organic synthesis • 6.3.1 Chromatography qualitative analysis • 6.3.2 Spectroscopy • 5.2.3 Redox and electrode potentials • 5.3.1 Transition elements
Skills: **(know how…)**	PAGs 9.1 Rate of decomposition of hydrogen peroxide 10.1 Rates – Iodine Clock 11.2 pH - titration curves 11.3 pH – acids and buffers	PAGs 7.2 – Identifying organic unknowns 2 8.2 Electrochemical cells 2 12.1 Investigating iron tablets Other practical: Transition metal substitution reactions
Key vocabulary **(5- 10 words)**	A level Chemistry is all key vocabulary	A level Chemistry is all key vocabulary
End of Half term assessment	Baseline assessment at start of Y13 end of topic tests AP1 assessment PAG assessments	end of topic tests PAG assessments Mock exam
Planned trips / Clubs / links		