


Subject: Chemistry Year 1
NPCAT Curriculum Overview 2021-2022

Teacher 1	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
End point	To develop scientific knowledge and conceptual understanding of the following topics:					
Teaching focus	Module 2 Foundations in Chemistry		Module 3 - Periodic Table & Energy			A2 intro
	Atoms, ions & compounds / Amount of substance /Acids & Redox		Periodicity/ Reactivity	Enthalpy/ Rates	Recap	Rates A2
Rationale	This module acts as an important bridge into AS and A level from GCSE chemistry. Covering basic chemical concepts. The module allows learners to develop important quantitative techniques involved in measuring masses, gas and solution volumes.		This module focus on inorganic and physical chemistry, the applications of energy use to everyday life and industrial processes, current environmental concerns re sustainability. It also allows learners to develop qualitative practical skills, observational skills and accurate quantitative techniques involved in determining energy changes and reaction rates. The content within this module assumes knowledge and understanding of the chemical concepts developed in Module 2: Foundations in chemistry.			Focus is on applying mathematical skills to the quantitative study of equilibria and rates and energy, and predict the extent, speed & feasibility of a reaction.
Maths skills	Application & understanding that requires a choice of data or equation to be used . Problem solving involving use of mathematics from different areas of maths and decisions about direction to proceed. Using logarithmic scales					
	M1 - Handling data M2- Algebra		M1 - Handling data M2 - Algebra			M2 - Algebra M3 - Graphs
Practical skills	Pag 1 - moles determination Pag 2 - simple titration		Pag 3 - Q=mcT Pag 4 - Qualitative inorganic analysis			Pag – 9 & 10 Rates 1&2



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Key Vocab	Anions. Avogadro constant, mole, empirical formula, relative molecular mass, relative formula mass, concentration, yield	Acid, Base, Redox, Neutralisation, Titration	ionisation energy, metallic bonding, delocalised, giant metallic lattice, Reducing agent, oxidising agent, disproportion	enthalpy, bond enthalpy, Hess' law, Intermediate, desorption, reversible reaction, dynamic, le Chatelier's principle		Order of reaction, zero, first, second, rate equation, initial rate, continuous monitoring,
Summative assessment		AP1-fundamentals Atoms, ions & compounds. Moles Using AS question papers 1 hour		AP2 - Fundamentals & periodicity and enthalpy Using AS question papers 1 hr 30		Mock All AS Full AS paper Chemistry in breadth 1 hr 30

Teacher 2

Autumn 1

Autumn 2

Spring 1

Spring 2

Summer 1

Summer 2


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End point	To develop scientific knowledge and conceptual understanding of the following topics:					
Teaching Focus	Module 2 Foundations in Chemistry		Module 4 – Organic Chemistry & analysis			A2 – introduction
	Electrons & bonding	Shapes & IMF	Alkanes & Alkenes / Alcohols	Haloalkanes / Synthesis	Recap	Aromatic
Rationale	This module acts as an important bridge into AS and A level from GCSE chemistry. Covering basic chemical concepts. The module allows learners to develop important quantitative techniques involved in measuring masses, gas and solution volumes.		This module introduces organic chemistry and its important applications to everyday life, including current environmental concerns associated with sustainability. The module provides learners with a knowledge and understanding of the important chemical ideas that underpin the study of organic chemistry. The module assumes knowledge and understanding of the chemical concepts developed in Module 2: Foundations in chemistry.			Focus on benzene & it's the reactions to produce new materials / compounds often with medicinal uses
Maths Skills	Application & understanding that requires a choice of data or equation to be used. Problem solving involving use of mathematics from different areas of maths and decisions about direction to proceed. Using logarithmic scales					
	M1 - Handling data		M4 - Geometry			
Practical skills			Pag - 5 Organic synthesis			Pag 6- Organic A2
Key Vocabulary	Orbitals, shells, sub-shells, ions, solubility, covalent, bond enthalpy	Intermolecular forces, electronegativity, polar, dipole, induced, instantaneous, molecular,	homologous, functional group, aliphatic, alicyclic, isomerism, addition, heterolytic, homolytic, sigma, pi, radicals, substitution, electrophilic, polymerisation	Stereoisomerism, oxidation, dehydration, nucleophilic, hydrolysis, intermediate, distillation, reflux, spectroscopy, absorption		Aromatic, arene, phenol, electrophilic, substitution, delocalised, activation, deactivation



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Summative Assessment		AP1- Atomic structure, Structure & bonding, shapes of molecules Use AS papers 1 hr		AP2 - Organics - Overview of all organic families and mechanisms met so far Use AS papers 1 hr 30		Mock All AS Full AS paper Chemistry in depth 1 hr 30
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