Curriculum Map

Subject: Chemistry

Year: 11

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Content Knowledge	**C12 - Chemical Analysis** Content: - Pure Substances and Mixtures - Chromatography - Gas Tests - Testing for Ions - Instrumental Analysis Knowledge: - How chromatography can identify between pure and impure substances - How chromatography works - Tests for common gases - Common tests for positive ions - Tests for negative ions **C13 - The Earth's Atmosphere** Content: - History of the atmosphere - Changes to the atmosphere - Greenhouse Gases - Climate Change	**C14 - The Earth's resources** Content: - Finite and Renewable energy sources - Safe Water - Treating water - Extracting metals - Life Cycle Assessments - Reduce, Reuse and Recycle Knowledge: - Know the difference between potable and pure water - How to purify water - How to make water safe for the environment - How to obtain potable water - Interpreting life cycle assessments - How reducing, reusing and recycling of materials decrease their environmental impacts **Required Practical:**	**C15 - Using our Resources** Content: - Rusting - Alloys - Polymers - Glass, Ceramics and Composites - Making Ammonia - Making fertilisers Knowledge: - The conditions required for rusting - Why metals are alloyed - How properties of polymers are determined by their monomers - Differences between thermosetting and thermosoftening - Comparing properties of glass, ceramics and composites - Why ammonia is an important compound - How to prepare fertiliser	**Revision of All Content** - To focus on recapping key knowledge and re-address common misconceptions - Embed additional exam practice for each chapter - Focus on key aspects of required practicals	**Revision of All Content** - To focus on recapping key knowledge and re-address common misconceptions - Embed additional exam practice for each chapter - Focus on key aspects of required practicals	

	- Atmospheric Pollutants Knowledge: - Understand how the atmosphere formed - Changes to the atmosphere over time - How greenhouse effect works - The importance of peer review - How to reduce carbon emissions - Problems caused by pollutants **Required Practical** - Identifying pure and impure substances by chromatography	- Analysis and purification of water samples				
Skills	• Distinguishing pure substances from impure by melting point • Identifying formations • Interpreting Chromatograms • Evaluate modern instrumental methods with tradition analysis methods • Interpreting results for flame emission spectroscopy • Interpret evidence and evaluate different theories about Earth's early atmosphere • Evaluate the quality of evidence in a report about global climate	• Distinguishing between finite and renewable sources • Extracting and interpreting information from charts and graphs • Determining the purity of water • Evaluating the alternative biological methods of metal extraction • Evaluating ways of reducing and uses of limited metal ores	• Interpreting and evaluating the compositions and uses of alloys • Evaluating industrial preparation of fertilisers against lab preparation of same compounds	• Recalling important information • Exam Technique • Spacing • Interleaving • Elaboration • Time management	• Recalling important information • Exam Technique • Spacing • Interleaving • Elaboration • Time management	

	change					
Key Questions	How can we use chemical tests to identify unknown substances? What are the advantages and disadvantages of using industrial methods of analysis?	How is human activity affecting the Earth's atmosphere?	How are we seeking to make sustainable use of the Earth's limited resources?	How do I revise for Chemistry?	How do I revise for Chemistry?	
Assessment	C12 + C13 Diagnostic Tests C12 + C13 End of Chapter Tests C12 + C13 ReAct Tasks	C14 Diagnostic Test C14 End of Chapter test C14 React Tasks Winter Mocks	C15 Diagnostic Test C15 End of Chapter Test C15 ReAct Tasks	Spring Mocks	GCSE exams	
Literacy/numeracy/SMSC/Character	**Numeracy:** - Measuring the height of a chromatogram - Calculating the Rf Value of a chromatogram - Reading pie charts - Analysing graphs **Keywords:** Formulations, mixtures, chromatogram, retention factor, precipitates, atmosphere, carbon footprint, carbon storage, particulates, global dimming **SMSC:** - Working together to investigate chromatography - Evaluating evidence that demonstrates the rise of carbon dioxide leading to climate change	**Numeracy:** - Extracting and interpreting data from charts, graphs and tables - Using order of magnitudes **Keywords**: Bioleaching, life cycle assessment, blast furnace, non-renewable **SMSC:** - Working together to investigate the purity of water - Are there more sustainable ways of extracting metals?	**Numeracy:** - Balancing formulae **Keywords:** rusting, galvanising, sacrificial protection, alloys, steel, polymers, thermosetting, thermosoftening, ceramics, composites **SMSC:** - Are there more efficient ways of producing ammonia?			

Enrichment opportunities and futures	STEM Club Summer Fayre at Royal Institution of Chemistry Visiting the Science Museum The Wellcome Collection The Faraday Museum