









## Curriculum Overview for Chemistry Year 10

<p><b>Half Term 1: Chromatography and Bonding, structure and properties</b></p> <p><b>Substantive Knowledge:</b> Recall definition of mixture. Describe the method for chromatography. Explain why different substances travel more or less in chromatography. Define R<sub>f</sub> value. Calculate R<sub>f</sub> value. Define an ion. Identify what charge ions metals and non-metals form. Recall the charge ions group 1,2, 6 and 7 form. Explain the charge ions in group 1,2,6 and 7. Identify the elements in ionic bonding. Draw dot and cross diagrams for ionic compounds. Work out empirical formula of ionic compounds. Describe limitations of dot and cross, ball and stick, 2D and 3D models of ionic structures. Recall elements in ionic bonding. Recall ions formed in group 1,2, 6 and 7 elements. Describe ionically bonded compounds including the electrostatic force between the ions. Identify elements in covalent bonding. Recall the relationship between group number and electrons. Identify covalent structures as simple molecules or giant structures. Draw dot and cross diagrams of covalent compounds. Use diagrams to identify chemical formulae. Recall elements in covalent bonding. Describe simple covalently bonded compounds including the intermolecular force. Compare simple covalent structure and ionic compound. Identify elements in metallic bonding. Recall charge ion metals form. Describe the metallic structure</p> <p><b>Triple</b> Identify test for cations and anions. Describe the tests used to identify cations and anions. Use tests to identify different compounds. Investigate unknown compounds using test for ions.</p> <p><b>Disciplinary Knowledge:</b> Analysis of data Draw dot and cross diagrams to show ionic and covalent bonding</p>		Skim and Scan of source information Decoding terms Etymology of key terms
		Mixture, chromatography, mobile phase, stationary phase Ionic, Covalent, Metallic, shell Bonding, Electrostatic Electrons, Groups, Ions, Delocalised Molecules, Metals, Triple: cation, anion
		Baseline Recall questions to start every lesson Recall test Review sheet
		Revision Card preparation for every lesson Recall test Review sheet Repetition of use of revision cards for end of unit assessment Exam questions - application
<p><b>Half Term 2: Organic Chemistry</b></p> <p><b>Substantive Knowledge:</b> Describe how crude oil is formed Identify alkanes Identify the general formula for an alkane Describe fractional distillation. Describe the properties of hydrocarbons. Explain the properties of hydrocarbons. Describe cracking. Explain why we do cracking. Compare the reactivity of alkanes and alkenes. Explain alkene reactions. T Describe alcohol reactions. T Describe reactions of carboxylic acids. T Explain the acidity of carboxylic acids. T Describe polymerisation. T Describe condensation polymerisation. T Describe the structure of an amino acid. T Describe the polymerisation of an amino acid. T Describe the structure of DNA. T</p> <p><b>Disciplinary Knowledge:</b> Identify carboxylic acids T Identify alkenes Identify the general formula for an alkene and alkanes Identify alcohols T Identify the general formula of an alcohol T</p>		Skim and Scan of source information Decoding terms Etymology of key terms
		Alkanes, Alkenes, catalytic cracking, combustion, complete combustion, crude oil, cracking, fractional distillation, condensing, homologous series, hydrocarbons,  T- Addition polymerisation, alcohols, amino acids, carboxylic acids, condensation polymerisation, DNA, esters, fermentation, nucleotides, polyesters, polypeptide
		Baseline Recall questions to start every lesson Recall test Review sheet
		Revision Card preparation for every lesson Recall test Review sheet Repetition of use of revision cards for end of unit assessment