

Year (Lesson per fortnight)	Autumn 1 (7 wks)	Autumn 2 (7)	Spring 1 (7)	Spring 2 (6)	Summer 1 (5)	Summer 2 (7)
Year 13 (9)  Approx 120 Lessons total	Approx 31 Lessons  <b>5-1 Continued</b>  <b>6-1 Continued</b>	Approx 31 Lessons  <b>5-2 Energy (Teacher 1)</b> <b>What will be learnt</b> 1-Lattice enthalpy 2-Born-Harber cycle calculations 3-further Born-Haber cycle calculations 4-Enthalpy change of solution and hydration 5-Entropy 6-Free energy 7-Redox 8-Redox titrations 9-Standard electrode potentials 10-Standard cell potentials <b>Main outcomes</b> To be able to describe and explain how ionic lattices form including related calculations. To understand the concept of entropy. Understand how a voltage can be generated by a chemical reaction. <b>Skills involved</b> <b>Practical skills</b> *See list below table <b>Maths skills</b> Multistep calculations. Equations. Titration calculations.	Approx 31 Lessons  <b>5-3 Transition metals (Teacher 1)</b> <b>What will be learnt</b> 1-Transition metals 2-Transition metal compounds 3-transition metals and complex ions 4-Stereoisomerism in complex ions 5-Ligand substitution in complexes 6-Ligand substitution and precipitation reactions 7-Redox reactions 8-Testing for ions <b>Main outcomes</b> To understand the reactivity of the transition metals related to their electronic structure. To understand how complex ions form and their role within the real world. <b>Skills involved</b> <b>Practical skills</b> *See list below table <b>Maths skills</b> Comparing data. Titration calculations. Multi-step calculations. <b>How will it be assessed?</b> HW booklet	Approx 23 Lessons  <b>5-3 Continued</b> <b>6-3 Continued</b>  <b>Revision (Teacher 1)</b> <b>Revision (Teacher 2)</b>	Approx 27 Lessons  <b>Revision/Exam Leave</b>	Approx 31 Lessons  <b>Exam Leave</b>

		<p><b>How will it be assessed?</b>          HW booklet          End of unit test          PAGs</p> <p><b>6-2 Nitrogen compounds, polymers and synthesis (Teacher 2)</b></p> <p><b>What will be learnt</b>          1-Basicity and the preparation of amines          2-Reactions of amino acids          3-Amides          4-Chirality          5-Condensation polymerisation          6-hydrolysis of polymers          7-Extending carbon chain length          8-Reactions of nitriles          9-Substitution reactions in aromatic compounds          10-Practical skills for organic synthesis          11-Synthetic routes in Organic Synthesis.</p> <p><b>Main outcomes</b>          To continue to develop the understanding of organic chemistry specifically linked to nitrogen-containing compounds and polymers. To understand how to synthesise one compound from another.</p> <p><b>Skills involved</b>  <b>Practical skills</b></p>	<p>End of unit test          PAGs</p> <p><b>6-3 Analysis (Teacher 2)</b></p> <p><b>What will be learnt</b>          1-Chromatography          2-Tests for organic functional groups          3-Introduction to nuclear magnetic resonance          4-Carbon-13 NMR Spectroscopy          5- Proton NMR Spectroscopy          6-NMR spectra of -OH and -NH protons          7-Combined techniques</p> <p><b>Main outcomes</b>          To understand how to analyse organic compounds using combined techniques including NMR.</p> <p><b>Skills involved</b>  <b>Practical skills</b>          *See list below table</p> <p><b>Maths skills</b>          Comparing data. Ratios. Percentages.</p> <p><b>How will it be assessed?</b>          HW booklet          End of unit test          PAGs</p>			
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		<p>*See list below table</p> <p><b>Maths skills</b> Comparing data.</p> <p><b>How will it be assessed?</b> HW booklet End of unit test PAGs</p>				
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\*A-Level Practical skills

**1.2.1(a) apply investigative approaches and methods to practical work**

**1.2.1(b) safely and correctly use a range of practical equipment and materials**

**1.2.1(c) follow written instructions**

**1.2.1(d) make and record observations and measurements**

**1.2.1(e) keep appropriate records of experimental activities**

**1.2.1(f) present information and data in a scientific way**

**1.2.1(g) use appropriate software and tools to process data, carry out research and report findings**

**1.2.1(h) use online and offline research skills including websites, textbooks and other printed scientific sources of information**

**1.2.1(i) correctly cite sources of information**

**1.2.1(j) use a wide range of experimental and practical instruments, equipment and techniques appropriate to the knowledge and understanding included in the specification**