



love the journey

Curriculum Implementation 2023-24

Secondary

LCA Strand	Science
Subject	Chemistry
Key Stage	Key Stage 4

What are the key concepts taught?	<ul style="list-style-type: none">• Ch9: Atomic Structure, Periodic table, Bonding and structure• Ch10: Chemical changes, Electrolysis, Quantitative chemistry, Energy changes• Ch11: Organic chemistry, Chemical analysis, Chemistry of the atmosphere, Earth's resources
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What is the sequencing of units?	<p>Starting with atomic structure to show limitations of the particle model covered at KS3. The periodic table and bonding follow so that they can be referenced in explanations of chemical phenomena. Theory is supported by regular practical work so students can relate models to their concrete experience/observations to make predictions. The spiral curriculum revisits key concepts throughout Chapters 9,10 and 11 to deepen understanding and relate chemistry ideas to the wider world, eg. Using the Earth's Resources and Using resources.</p> <p>ELC students begin their chemistry by studying component 3 Elements, mixtures and Compounds. This includes aspects of bonding and the reactivity series. We adapt the content of these topics to continue on from KS3 learning in a more accessible format, and pupils also have the opportunity to carry out investigative coursework linked to each topic.</p>
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How do we encourage pupils to see the links between different units and concepts?	<p>Chemistry is split up into three big ideas, which are further split into sub topics: Matter, Reactions and Earth. Each sub topic is revisited throughout Chapter 10 and 11. For example, C7 Energy Changes revisits C4 chemical calculations, C5 chemical reactions such as acids and alkalis and aspects of reactivity. Retrieval tasks are planned to review linked content learnt previously to allow students to internalise the connections between the different topics and skills.</p>
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<p>What are the planned opportunities for adaptive teaching, including for SEND, the more and able and disadvantaged pupils?</p>	<p>We follow whole school principles of differentiation for PP, SEND pupils.</p> <p>Extension and support materials available on Kerboodle. Examples of these resources are the Bump up your grade tasks as well as support sheets for the SEND eg: Writing frames used to support students.</p> <p>ELC nurture group taught concurrently with GCSE Foundation, with an adapted teaching order based on the ELC specification with extension into FT content through each year, and additional FT content introduced towards the end of Chapter 11.</p>
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<p>What are the planned opportunities for retrieval and reflection by pupils?</p>	<p>LC tests/quizzes/whiteboard activities.</p> <p>Peer/self-assessed to provide immediate feedback. Planned, targeted retrieval starters which return to previously learnt content at regular intervals, as well as cumulative assessment in both low stakes assessments and PP exams throughout the year. Learning tasks are set for homework followed by quick test in lesson.</p> <p>Revision timetable for Chapter 11 and guided tasks revisiting older topics.</p>
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<p>What are the opportunities for feed forward by the teacher post assessment outcomes?</p>	<p>Analysis of examiners reports to identify areas of concern, patterns in misunderstanding/misconceptions and additions/amendments made to SoW on an annual basis.</p> <p>Analysis of mock exams to identify areas of concern to focus on during revision lessons towards the end of Chapter 11 on a class by class basis.</p>
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<p>What are the planned opportunities for developing Reading?</p>	<p>Students reading aloud from textbooks. Literacy tasks in lessons/ homework research tasks: reading a passage followed by comprehension designed to develop readers ability to read confidently</p> <p>Reading lists relevant to KS3/4/5 are shared with pupils, as well as suggestions shared with school library for new book purchases</p>
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<p>What are the planned opportunities for developing</p>	<p>Students learn the difference in using scientific and common usage vocabulary. We discuss the differences in the use of terms concentration and strength in science and everyday language</p>
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literacy, numeracy, oracy and SMSC?

Maths skills and working scientifically skills are communicated to students at the start of a new topic. Numeracy is developed regularly as quantitative chemistry is interleaved throughout Chapter 10 and 11.

SMSC issues are explored when looking into the life of Fritz Haber for example in Chapter 10. The saviour of food production through his research into the manufacture of fertiliser and the father of chemical warfare when he released chlorine gas into the Allied trenches of WWI. Each key concept of the curriculum has topics which allow for knowledge of tier 2 and 3 vocabulary and literacy skills to be embedded in lessons throughout the course.