



Subject: Chemistry

Lead Teacher: Mr R Wright

Year: 9

## Curriculum organisation

Students are taught in mixed groups of 30 for **two** hours per week. They are not grouped by ability.

## Overview of Topics &amp; Key Information

## How will your child be learning?

Term	Unit(s) of Work	Key Enquiry Questions	Key Content/ Terminology	Skills developed	How will your child be learning?
Autumn Term	<ul style="list-style-type: none"> <li>Atomic structure and the periodic table</li> </ul>	<ul style="list-style-type: none"> <li>How are particles arranged in an atom?</li> <li>How was the modern periodic table developed?</li> </ul>	<ul style="list-style-type: none"> <li>A simple model of the atom</li> <li>The periodic table</li> <li>Transition metals and Groups 1, 7 and 0</li> </ul>	<ul style="list-style-type: none"> <li>Use appropriate scientific vocabulary and theory correctly</li> </ul>	<ul style="list-style-type: none"> <li>Whole class discussion</li> <li>Pair work</li> <li>Practical activities</li> <li>Problem-solving tasks</li> <li>Watching short video clips</li> <li>Research tasks</li> </ul>
	<ul style="list-style-type: none"> <li>Bonding, structure and the properties of matter</li> </ul>	<ul style="list-style-type: none"> <li>What are the different types of chemical bond?</li> <li>What properties do different types of structure exhibit?</li> <li>What are nanoparticles</li> </ul>	<ul style="list-style-type: none"> <li>Ionic, covalent and metallic bonding</li> <li>States of matter</li> <li>Properties of ionic compounds, small molecules, giant covalent compounds and metallic compounds</li> <li>Nanoparticles</li> </ul>	<ul style="list-style-type: none"> <li>Describe patterns in data</li> <li>Make prediction using scientific knowledge and understanding</li> </ul>	
Spring Term	<ul style="list-style-type: none"> <li>Chemical analysis</li> </ul>	<ul style="list-style-type: none"> <li>How do you test for common gases?</li> <li>How do you carry out tests for common ions?</li> </ul>	<ul style="list-style-type: none"> <li>Purity, formulations and chromatography</li> <li>Identification of common gases</li> <li>Identification of ions by chemical and spectroscopic means</li> </ul>	<ul style="list-style-type: none"> <li>Use appropriate techniques, apparatus and materials during practical work</li> <li>Make and record observations and measurements</li> <li>Present observations and data appropriately</li> <li>Interpret observations and data to reach conclusions</li> </ul>	
	<ul style="list-style-type: none"> <li>Organic chemistry</li> </ul>	<ul style="list-style-type: none"> <li>What is organic chemistry?</li> <li>How is crude oil separated into fractions?</li> <li>What are alkanes and alkenes?</li> </ul>	<ul style="list-style-type: none"> <li>Crude oil, hydrocarbons and alkanes</li> <li>Fractional distillation and petrochemicals</li> <li>Properties of hydrocarbons</li> <li>Cracking and alkenes</li> <li>Reactions of alkenes</li> </ul>	<ul style="list-style-type: none"> <li>Make predictions using scientific knowledge and understanding</li> <li>Describe patterns in data</li> </ul>	
Summer Term	<ul style="list-style-type: none"> <li>Quantitative chemistry</li> </ul>	<ul style="list-style-type: none"> <li>What are the mass changes which occur when a reactant or product is a gas?</li> <li>How do you calculate Mr</li> </ul>	<ul style="list-style-type: none"> <li>Conservation of mass and balanced symbol equations</li> <li>Relative formula mass (Mr)</li> <li>Mass changes when a reactant or a product is a gas</li> </ul>	<ul style="list-style-type: none"> <li>Ask questions to develop an investigation</li> <li>Evaluate reliability of methods and suggest possible improvements</li> <li>Evaluate data to identify sources of error</li> </ul>	

Equipment needed for lessons	How will learning and progress be assessed?
<ul style="list-style-type: none"> <li>• Standard school stationery</li> <li>• Exercise book</li> <li>• Calculator</li> </ul>	<ul style="list-style-type: none"> <li>• End of unit tests (subject knowledge focus)</li> <li>• Formal assessment week (May)</li> <li>• Peer and self-assessment</li> <li>• Homework tasks</li> <li>• Retrieval practice activities</li> </ul>

Extension & Enrichment opportunities	What can you do to support your child?
<ul style="list-style-type: none"> <li>• STEM Clubs</li> <li>• Websites which can be used to extend knowledge and reading</li> <li>• <a href="https://www.bbc.co.uk/bitesize/examspecs/z8xtmnb">https://www.bbc.co.uk/bitesize/examspecs/z8xtmnb</a></li> <li>• <a href="http://www.gcsescience.com/gcse-chemistry-revision.htm">http://www.gcsescience.com/gcse-chemistry-revision.htm</a></li> <li>• <a href="https://www.chemguide.co.uk/">https://www.chemguide.co.uk/</a></li> <li>• <a href="https://www.creative-chemistry.org.uk/gcse#">https://www.creative-chemistry.org.uk/gcse#</a></li> <li>• <a href="https://www.physicsandmathstutor.com/chemistry-revision/gcse-aqa/">https://www.physicsandmathstutor.com/chemistry-revision/gcse-aqa/</a></li> </ul>	<ul style="list-style-type: none"> <li>• Take an active interest in their learning</li> <li>• Quiz them on what they have learned that day or week</li> <li>• Encourage studying little and often throughout the year with focussed revision leading up to assessments</li> <li>• Work with them to produce a study timetable that is flexible and realistic</li> </ul>

Inclusion	
In lessons	Subject specific
<ul style="list-style-type: none"> <li>• Teachers follow student passports to ensure that the needs of all students with SEND are met.</li> <li>• Work is enlarged to the necessary size for visually impaired students.</li> <li>• Teachers will ensure that classrooms are quiet learning environments where possible and will dim lights to support students with sensory needs.</li> <li>• Students have the use of laptop if they have a SEND need whereby use of a laptop supports them.</li> <li>• Hearing impaired students are supported through use a radio aid and teachers ensure that students can lip read at all times during lessons.</li> <li>• Dyslexic students are encouraged to use coloured overlays when they are required to read long passages.</li> <li>• Use of dyslexic friendly fonts and coloured backgrounds used in PowerPoints/resources.</li> <li>• Students with ADHD are given movement breaks, fidget toys and lessons are 'chunked' to aid concentration.</li> <li>• Students are seated according to their needs, students work with the SENDCo to decide upon this.</li> </ul>	<ul style="list-style-type: none"> <li>• For pupils with visual impairment, enlarged graph paper for plotting graphs during experiments</li> <li>• Physical impairment – where possible we amend practical equipment or provide a magnifying glass to view instruments</li> <li>• Hearing impaired – show videos with subtitles</li> <li>• Some laboratories have height-adjustable benches for wheelchair access</li> <li>• Cater for latex allergies by providing disposable gloves</li> <li>• Colour blindness</li> </ul>

**If you have any questions about this Learning Overview, please contact the named Teacher above.**