

Curriculum Intent

Chemistry is the study of matter, its properties, how and why substances combine or separate to form other substances, and how substances interact with energy. Chemistry is involved in everything we do, from growing food to cleaning our homes or launching a space rocket. The key stage 3 Chemistry course encourages students to develop an interest and understanding of Chemistry from tiny atoms to the composition of our planet.

The course aims for all students to:

- appreciate the role of Chemistry in helping to solve challenges of global significance
- know how to use specialist Chemistry vocabulary and conventions
- be curious, thoughtful scientists who are able to apply their knowledge to improve their understanding
- develop practical and investigative skills
- embed core concepts so that they can access and apply the key skills needed to enjoy and succeed in Chemistry

Autumn Term | Matter

Students will learn:-

- What are materials like inside?
- What gives a material its properties?
- How can we separate the components of a mixture?

Knowledge, understanding & Skills

Properties of solids, liquids and gases
 Changes of state
 Collision theory
 Dissolving
 Diffusion and gas pressure
 Mixtures and how they are separated
 Practical processes such as filtering, evaporating, melting, freezing, boiling, condensing.

How is homework used to enhance learning?

Kerboodle <https://www.kerboodle.com/app>
 BBC bitesize <https://www.bbc.co.uk/bitesize/subjects/zh2xsbk>
 AES student science website
<https://sites.google.com/view/angloscience>

Suggested homework tasks

- Learn spelling and definitions of key words.
- Design a detailed poster on the three states of matter

What does excellence look like?

- Carrying out practical processes logically, precisely and accurately.
- Linking ideas together to answer questions logically and sequenced.
- Linking big ideas to answer real life Chemistry problems.
- For example:
 - Compare evaporation, boiling and sublimation based on the arrangement, movement, and energy transfers of particles.
 - Justify whether evaporation or distillation would be suitable for obtaining given substances from solution.

How will we assess impact?

- Peer and self-assessment
- Previous lesson recap quiz
- Land mark tasks
- End of topic test



Students will learn:-

What are the chemical reactions?

How is homework used to enhance learning?

Kerboodle <https://www.kerboodle.com/app>

BBC bitesize <https://www.bbc.co.uk/bitesize/subjects/zh2xsbk>

AES student science website

<https://sites.google.com/view/angloscience>

Suggested homework tasks

- Learn spelling and definitions of key words.
- Kitchen Chemistry: finding acids and alkalis at home
- Soil pH webquest
- Build a profile of a named element

How will we assess impact? (3D)

Peer and self-assessment

Previous lesson recap quiz

Land mark tasks

End of topic test

Knowledge, understanding & Skills

Formation of new substances

Atoms, elements, compounds.

Changes for new products are not reversible

Practical processes involving burning, oxidation and the reactions of acids.

What does excellence look like?

Carrying out practical processes logically, precisely and accurately.

Linking ideas together to

answer questions logically and sequenced.

Linking big ideas to answer real life Chemistry problems.

For example:

- Explain the difference between acid strength and acid concentration.
- Justify the use of specific metals and non-metals for different applications.

Students will learn:-

- How do we classify rocks?
- How are materials recycled in the rock cycle?
- How big is the solar system? How big is the universe?
- Why is it hotter in the August than in December if you live in Britain? Why is it the other way round in Australia?
- How and why have ideas about the Universe changed?

How is homework used to enhance learning?

Kerboodle <https://www.kerboodle.com/app>

BBC bitesize <https://www.bbc.co.uk/bitesize/subjects/zh2xsbk>

AES student science website

<https://sites.google.com/view/angloscience>

Suggested homework tasks

- Learn spelling and definitions of key words.
- Model Earth's structure.
- Explore the night sky.
- Moon Business project.

How will we assess impact? (3D)

Peer and self-assessment

Previous lesson recap quiz

Land mark tasks

End of topic test

Knowledge, understanding & Skills

Earth consists of crust, mantle and core.

Sedimentary, igneous and metamorphic rocks are formed by different processes and have different properties as a result.

The Earth orbits the sun

The Sun is one of billions of stars in the galaxy

We see planets and moons because they reflect light.

The Sun is at the centre of the solar system.

Mathematical skills using light years not kilometres to measure distances in astronomy.

What does excellence look like?

Carrying out practical processes logically, precisely and accurately.

Linking ideas together to answer questions logically and sequenced.

Linking big ideas to answer real life Chemistry problems.

For example:

- Give a detailed description and explanation of the journey of material through the rock cycle.
- Plan a method for comparing the strength of ceramic materials, justifying choices of experimental techniques, apparatus and the measures to control risk.
- Predict the effect of the Earth's tilt on temperature and day-length.

International Opportunities**Visits Programmes**

Audoumarois Marshes – ecology/ecosystems

Nausicaa – aquarium

La Coupole - planetarium

Within the curriculum

The KS3 Chemistry curriculum is designed to introduce students to the key scientific concepts, supported through the study of international examples and theories.

Students are encouraged to engage with scientific concepts and theories beyond the syllabus by exploring key examples of international collaboration, or scientific discovery where the common language of scientific discovery is utilised. Reference is additionally made to key scientists with connections to countries and cities visited as part of the school's international exchange programme.

