

Year 9 - Science

What will be studied?

Topic(s)

Students are following the AQA KS3 Activate Science Syllabus and during this final year of key stage 3 students will have the opportunity to recap the challenging topics taught during year 7 and 8 and also improve their maths in science skills.

- **Biology:** variation and evolution – Students will be retaught key concepts on variation and will then link this to evolution. They will learn about evolution by natural selection and build upon their knowledge of inheritance. Respiration and Photosynthesis: Students will be taught about aerobic and anaerobic respiration. Students will also learn about the process of photosynthesis and look in detail at the structure of a leaf and why minerals are required for healthy growth.
- **Physics:** Contact forces and pressure – Students will be retaught key concepts on forces by revisiting contact forces and pressure. Students will plan, do, evaluate and improve a practical looking at drag. Energy -In this big idea students will learn about the ways of calculating energy in food and fuels. They will find out about the ways we generate electricity and why is helpful to reduce the time we use appliances. They will also learn how scientists think about energy including the idea of dissipation. They will model how energy is transferred between different stores and learn how we can use energy calculations to tell us which processes are possible. Electromagnets: Students are going to learn how to make a magnet using electricity and about the different ways that they can make it stronger. They will also learn about how electromagnetic devices like bells and loudspeakers work.
- **Chemistry:** Types of reaction : Students will develop their knowledge by looking at different types of chemical reactions, including oxidation, combustion, and decomposition. Students will also learn how to represent chemical substances and reactions using ratios and how to write word equations and balanced formula equations. Students will also learn about the energy changes involved in a chemical reaction. Earth Structure and Universe - Students will learn about the structure of the Earth, including how the Earth how we know it has formed over time. They will learn about how all the materials we have come from the Earth and why we need to protect our vital resource. They will learn about the size and scale of our solar system and galaxy and find out how the movement of the earth and moon explains the observations that we make of the Sun and the night sky.

- Numeracy enrichment – Students will improve their maths in science skills by recapping unit conversions, graph plotting and gradient calculations. They will also practical questions involving experimental data analysis

How do you assess the learning?

Students are assessed by the following methods:

- Teacher created assessment for learning opportunities
- Extended response tasks which allow students to write at length
- Multiple choice assessments
- Examination questions
- Online assessments
- Spelling tests
- In class AfL as appropriate such as: use of mini whiteboards, traffic light cards, exit cards etc.

Teachers arrange opportunities in lesson for students to present work and do individual and group projects. Practical work is completed in lesson and assessed by teachers.

End of Year Examination

How will I be assessed at the end of the year?

Students are given a one hour final assessment covering topics from the whole of Year 9 and the corresponding prior learning from Year 7 and Year 8 – students will not be expected to revise their work from Year 7 and Year 8, it is reinforced through normal teaching. This also covers the skills that students have learnt, students will be assessed on their ability to apply knowledge they have gained in one topic to another. For example, they may have done some work on graph drawing in physics – in their exam they may be asked to draw a graph for chemistry.

How can I help my child?

Guidance and advice

- Kerboodle.com – all students have a log in for a free version of the textbook used in lessons. This also includes videos, support and extension activities.
 - BBC Bitesize – KS3 Science. Students can find animations, explanations and questions on this site – organised as Biology, Chemistry and Physics.
 - Collins Science KS3 Revision - Collins provide KS3 revision books based on the AQA KS3 science syllabus.
 - Senecalearning.com - Students are encouraged to revise using Seneca. There is a Key Stage Three Science course available for free.
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