

Year 8 - Science

What will be studied?

Topic(s)

Students are following the AQA year 8 Smart Science Syllabus based on the below 5 pillars:

- Coherence: building and maintaining a coherent curriculum as well as ensuring coherence between curriculum and assessment
- Academic attainment and progress: holding high expectations and aspirations for all learners
- Preparation for successful futures: developing cognitive and metacognitive skills
- Equity, inclusion, and belonging: promoting the roles of identity, diversity, and inclusion
- Wellbeing: delivering experiences of awe and wonder

Students will be learning the following topics in year 8:

- **Working scientifically:**
- Physics: 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.
- Chemistry: Reactions- In this big idea students will look at the reactions of acids and alkalis and the properties of metals and non-metals. They will then look at the periodic table and be taught how to read it. They will be taught how to name compounds and how to write chemical formulae. Students will also find out how to use pattern in properties to predict products and discover how to make salts.
- Physics: Potential difference and resistance – In this big idea students will learn about what is happening in a circuit and how we can model it using a circuit diagram. They will also learn about what batteries do and how to use the circuit symbols to make circuits to do different jobs.
- Physics: Sound and light - Students will be taught how we hear and see, learning about the eyes and the ears. They will study the differences between sound waves and light waves and will be taught how waves transfer energy.
- Biology: Breathing, Digestion, Respiration and Photosynthesis– Building upon Year 7 learning of body systems students will be taught the breathing system and the digestive system. They will look at the different cells, tissues and organs in these systems and how they work together to ensure that the whole organism is able

to function. Students will also 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.

- Chemistry: 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.
- Physics: Contact forces and pressure – Students will build upon their learning in Year 7 on forces to look at contact forces and pressure. Students will plan, do, evaluate and improve a practical looking at drag.

Students will apply and develop their knowledge by undertaking a range of practical work. This practical work is used to develop transferable skills such as devising and testing questions, identifying and controlling variables, analysing and interpreting data. Students are given the opportunity to build and master practical skills including: using specialist equipment to take measurements, handling and manipulating equipment with confidence and recognising hazards and planning to minimise risk.

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 8 and the corresponding prior learning from Year 7. 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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