

Programme of Study – Science Department

In years 7 and 8 pupils follow the 2014 National Curriculum, that has been mapped out to be taught through both expeditionary learning within a STEM environment and within 3 discrete Science lessons per week. The discrete lessons are partially based around the Activate scheme of work to allow for effective tracking and monitoring of student progress throughout these years.

This curriculum model been designed to give students the skills and conceptual understanding they will need to allow them to further develop at KS4 and achieve at their highest possible level. Topics more suited to expeditionary learning have been mapped into the STEM scheme of work and the remaining science content grouped into discrete topics accordingly.

Topics studied in discrete Science lessons are as follows:

Y7 discrete Science topics; Becoming a Scientist (introductory unit), Cells to Organisms, Reproduction, Atoms Mixtures and Compounds, Chemical Reactions, Acids and Alkalis, Electricity and Magnetism, The Earth and Space.

Within STEM Y7 students will study: The Periodic Table, Healthy Eating, Washbag Chemistry, Light, Speed, Healthy Water.

Y8 discrete Science topics; Interactions and Interdependencies, Genetics and Evolution, Microbes and Disease, Earth Science, Periodic Table and Reactions (2), Energy, Forces and Sound.

Within STEM Y8 students will study: Breathing and Respiration, Body Systems, Photosynthesis and Plant Reproduction, CSI techniques, Pressure.

Y9 pupils complete a transition unit to embed the learning from the previous 2 years before beginning their GCSE courses at Christmas.

The GCSE course we are following is the AQA Trilogy Specification. This covers all three Sciences and successful completion will result in the award of 2 GCSEs. Pupils spend 4 hours per week in Science in Y9 -11.

Biology Topics

1. Cell biology
2. Organisation
3. Infection and response
4. Bioenergetics
5. Homeostasis and response
6. Inheritance, variation and evolution
7. Ecology

Chemistry Topics

8. Atomic structure and the periodic table
9. Bonding, structure, and the properties of matter
10. Quantitative chemistry
11. Chemical changes
12. Energy changes
13. The rate and extent of chemical change
14. Organic chemistry
15. Chemical analysis

16. Chemistry of the atmosphere
17. Using resources

Physics Topics

18. Energy
19. Electricity
20. Particle model of matter
21. Atomic structure
22. Forces
23. Waves
24. Magnetism and electromagnetism