HAREFIELD
Achievement through Active Learning

Science Curriculum Vision, Aims and Overview

Key Aims of the Science curriculum at Harefield School:

- Science is a fundamental part of our everyday lives. It helps to explain so much of the world around us and enables advances in many areas including health, communication, the environment and engineering. Our Y7-11 5-year learning journey will enable students to find out more about the world around them, to develop an interest and understanding of natural phenomena and prepare them for studying Science at Key stage 5. Our aim is to have an ambitious, challenging and well sequenced curriculum so that our students can know more, remember more but also gain a love for learning in this exquisite subject.
- Our carefully designed spiral curriculum will ensure that all pupils develop scientific knowledge and conceptual understanding through building solid foundations, layer by layer, whilst studying the specific disciplines of Biology, Chemistry and Physics in rotation. Students will revisit key concepts with increasing detail and in this way will construct a conceptual pyramid of knowledge that will withstand the test of time. It will enable students to develop understanding of the nature, processes and methods of Science through different types of Scientific enquiries that help them to answer scientific questions about the world around them. It will enable all students to be equipped with the scientific knowledge and literacy/numeracy required to understand the uses and implications of Science, today and for their future.

	Year 7	Year 8	Year 9	Year 10	Year 11
Autumn 1	• Cells • Particles and their behaviour	• Health and lifestyle	• Particle model and state change • Forces & motion	• Communicable diseases • Preventing and treating diseases • Non-communicable diseases • Structure and bonding	• Forces in action • Motion • Force and motion • The human nervous system
Autumn 2	• Forces • Structure & function of body systems	• The periodic table • Electricity and magnetism	• Fertilisation and implantation • Chemical Changes • Waves, sound and light	• Electric circuits • Electricity in the home • Photosynthesis	• Hormonal coordination • Crude oil and fuels • Chemical analysis • Wave properties • Electromagnetic spectrum
Spring 1	• Elements, atoms and compounds • Sound	• Separation techniques • Energy	• Cell Structure and transport • Cell Division	• Respiration • Chemical calculations • Chemical changes	• Reproduction • Variation and evolution
Spring 2	• Reactions • Light	• Biological processes • Metals and other materials	• Atomic structure • The Periodic Table • Conservation and dissipation of energy	• Electrolysis • Energy changes • Molecules and matter	• Genetics and evolution • The Earth's atmosphere • The Earth's resources
Summer 1	• Acids and alkalis • Reproduction 1	• Ecosystems and adaptations • Motion and pressure	• Energy transfer by heating • Energy resources	• Radioactivity • Organising an ecosystem • Biodiversity and ecosystems	• Electromagnetism

Summer 2	• Reproduction 2 • Space	• The Earth • Inheritance	• Organisation and the digestive system • Organising animals and plants	• Rates and equilibrium • Adaptations, interdependence and competition	