



Science Curriculum Overview

Key Stage 3- Year 8

Term 1 - One unit of Chemistry and Physics; Two units of Biology

The first unit covers diet, digestion and the transport of and uses for the nutrients in digested food. The next unit uses the context of recycling to examine how we sort and classify materials. The unit also develops the more advanced concepts of elements and compounds, and links these to the more abstract ideas of particle models and chemical formulae. The third unit looks at heat transfers in the context of clothing, and how modern outdoor clothing allows people to be comfortable in a wide range of external temperatures. The final unit covers the chemical reaction of respiration in living organisms and the structure and function of the human respiratory and circulatory systems.

Term 2 - One unit each of Biology, Chemistry, and Physics

Students learn about microbes, population growth, uses of microbes, disease transmission, disease prevention, natural defenses, vaccines and medicines. Students learn the differences between elements, compounds and mixtures, and considers the properties and uses of alloys. It also revises ideas about chemical reactions and the effect of heat on materials is considered in relation to physical and chemical changes. Finally, students consider forces that are spread out over an area, magnetic and electromagnetic forces, and finally at levers. The work is set in the context of transport and how we use it.

Term 3 - One unit each of Chemistry and Physics

The first unit examines the different types of rock and the processes which bring about their formation, leading to the idea of a rock cycle which operates within a huge geological timescale. Next students consider how light travels and what happens when it meets an object. The work is set in the context of cameras and photography.

Practical Work

Ideas about risk assessment and hazard classification are emphasised. In addition to topical practical work, students also conduct experiments to analyse probability through collecting sample sizes. Students are introduced to the practice and pitfalls of estimating an underlying proportion. Students investigate the behaviour of woodlice to consider the importance of a large sample size, a 'fair test', and replication as part of the scientific method. Students are introduced to the practice of correlation reasoning by investigating treatments and their effects. Students consider the extent to which two variables are correlated.