



Intent

The year 8 curriculum has been designed to build on the knowledge gained in year 7, whilst introducing new more complex concepts. The topics taught cover equal amounts of Biology, Chemistry and Physics. The idea is to continue to build knowledge, develop practical skills further and introduce new concepts with an element of challenge.

Year 8 Science

Term 1 September to December

8B1 Plants
8C1 Acids
8P1 Forces and Motion

Term 2 January to Easter

8B2 Genes and Inheritance
8C2 Metals
8P3 Forces and Pressure

Term 3 April to July

8B3 Health and Disease
8C3 Combustion
8P3 Energy Transfers

Knowledge

(facts, information, concepts and key terminology)

Photosynthesis in plants, acids, alkalis and neutralisation, types of forces and their behaviours.

Types and causes of variation, enzyme behaviour, properties and reactions of metals, further examples of forces and the link between force and pressure in all states of matter.

Types of microbes, disease transmission and prevention, combustion reactions of fuels and the impact on the environment, methods of heat energy transfer.

Understanding

(ability to connect and synthesise knowledge within a context)

Link the requirements of photosynthesis to plant growth and plant adaptations. Explain neutralisation in terms of acid and alkali particles. Describe and explain how forces act in a variety of scenarios.

Explain causes of variation using the terms inherited and environmental. Identify patterns in reactions of metals with oxygen, water, acids and each other. Explain the link between force and pressure in all states of matter.

Use the structure of the human body to describe methods of disease transmission and prevention. Describe links between fuel use and environmental issues. Link the type of heat transfer to the material used.

Skills

(successful application of knowledge and understanding to a specific task)

Identify and use suitable science equipment to carry out investigations, collect and process data. This includes testing leaves for starch, microscopes, using indicators, carrying out chemical reactions, identifying hazards and writing word equations for neutralisation reactions. Some application of mathematical skills in force related calculations also required.

Identify and use suitable science equipment to carry out investigations, collect and process data. This includes using solutions in specific orders to obtain a result, completing punnet squares and probability, carrying out test tube reactions of metals, testing Hooke's law. Some application of mathematical skills in pressure related calculations also required.

Identify and use suitable science equipment to carry out investigations, collect and process data. This includes using agar plates, testing for gases, investigating burning time, and problem-solving using knowledge gained.

Formal Assessments

(those done by all/vast majority of the cohort)

Progress questions and exam style practice in each unit.
End of term assessment in December.

Progress questions and exam style practice in each unit.
End of term assessment in March/April.

Progress questions and exam style practice in each unit.
End of year assessment in June.

By the end of the year students on course for at least a grade 5 will...

- Be able to write an equation for photosynthesis.
- Describe the adaptations of a plant which enable it to photosynthesise.
- Identify causes of variation.
- Define the term enzyme and describe factors which affect them.
- Identify the three types of microbe, plus methods of transmission and prevention of disease.
- Identify the reactants and products of a neutralisation reaction.
- Describe the reactions of metals with oxygen, water, acid and other metals.
- Name fuels and identify products of combustion.
- Identify forces, and describe their effects on materials.
- Describe the three methods of heat transfer and identify methods of preventing heat transfer.