

Please note that units are taught in rotation within the year group in order to efficiently use practical equipment. All students will complete the same units within a term, but not necessarily in the same order.

Autumn Term

Introduction to Science

Students will go through a short series of lessons to prepare them for practical work in a secondary school laboratory.

Organisms: Movement & Cells

In this biology unit students will learn about the different types of cells, the structure and function of different cell components, how to use a microscope, how cells are organised into tissues, organs and systems, how joints in the body function, and how our skeleton and muscles work together to produce movement.

Matter: Particle Model & Separating Mixtures

In this physics and chemistry unit students will learn about the particle model, a fundamental way of understanding all matter. They will use the particle model to explain changes in state, such as freezing and evaporation. Students will also learn different physical techniques to separate mixtures, including distillation, chromatography, evaporation and filtration.

Electromagnets: Voltage, Resistance & Current

In this physics unit students will learn about how to diagram and build electric circuits, the concepts of voltage, current and resistance (their definitions, units and how to measure them), parallel and series circuits and static electricity.

Winter Term

Waves: Sound & Light

In this physics unit students will learn about the structure of waves, the causes and properties of sound waves, the effect of waveform on the pitch and volume of sound waves, the behaviour of light when it encounters objects and the laws of reflection and refraction.

Ecosystems: Plant Reproduction

In this biology unit students will learn about the reproductive structures of plants and how that knowledge helps with crop cultivation. There is an emphasis on the different pollination methods.

Reactions: Metals and Non-Metals & Acids and Alkalis

In this chemistry unit students will learn about the pH scale and the use of indicators, the reactions of acids with alkalis and with metals, the reactivity series of metals, specific examples of chemical reactions (displacement, oxidation, neutralisation), and how to write word and symbol equations.

Science Week

Students will design their own presentation and scientific demonstrations based on their own research or their favourite practical from the year so far.

Spring Term

Ecosystems: Human Reproduction

In this biology unit students will learn the structure of the male and female reproductive system, the menstrual cycle, the steps of pregnancy, fertility problems and the use of contraception.

Earth: Earth Structure & Universe

In this physics and chemistry unit students will learn about the structure of the Earth and its rock cycle, as well as the layout of our Solar System and the wider Universe.

Energy: Energy Costs & Energy Transfers

In this physics unit students will learn about how energy is transferred from one form to another by devices, including everyday appliances, these energy transformations are linked to energy bills and students will learn how to figure out which appliances are the most efficient and cost effective.