



YEAR 7

This term, your child will learn about genes, waves and the Earth.

Genes

In their lessons on genes pupils will learn where their characteristics come from, are they inherited or caused by the environment? They will learn why differences between individuals in a species arise and why this is potentially useful. They will analyse the adaptations of different organisms to their environment.

This unit also covers the science of reproduction. Pupils will learn about adolescence, reproductive systems, fertilisation and the developing foetus. They will also learn about the menstrual cycle and its role in reproduction.

Waves

Waves teaches the pupils about sound and light. They will learn about the features of sound waves and how they relate to the sounds that we perceive. The structure of the ear is covered and how this helps us to detect sounds around us. When studying light pupils will learn how light interacts with surfaces and transparent materials by studying reflection and refraction. The structure of the human eye is also studied. Pupils learn what coloured light is and how we perceive it.

The Earth

The Earth unit covers the structure of the Earth. Pupils will learn about the three types of rock, their formation and the rock cycle. This unit also covers our place in the universe. The structure of our solar system and why the moon changes appearance in the night sky.



YEAR 8

This term, your child will study the breadth of the three sciences and will deepen their knowledge of waves, ecosystems and the Earth. These units build clearly from those studied in year 7.

Waves

In waves pupils will recap their knowledge of waves from year 7. They will learn about different types of waves and how they transfer energy. They will delve deeper into electromagnetic waves with a specific focus on infrared radiation and how it is a method of heat transfer. Pupils will also have the opportunity to review models that are used to represent waves and critique these.

Ecosystems

In their second unit on ecosystems our year 8 pupils will learn about photosynthesis and respiration. Respiration is broken down into aerobic and anaerobic respiration. Pupils will plan an investigation into the effect of exercise on the body and link their findings to respiration. When studying photosynthesis pupils will learn about this important chemical reaction, the adaptations of leaves to facilitate photosynthesis and they will carry out an investigation to measure the rate of photosynthesis.

The Earth

The Earth unit develops the knowledge gained from the first unit in year 7. Pupils will study varying chemical reactions such as combustion and thermal decomposition. In these reactions they will learn what happens to the atoms in a chemical reaction and apply the law of conservation of mass. The difference between exothermic and endothermic reactions is taught and pupils will learn how to interpret energy level diagrams for these reactions. We are ambitious with our pupils and teach them how to calculate the energy released in reactions by completing bond energy calculations.



YEAR 9

This term, your child will have a huge focus on biology. Specifically, they focus on organ systems and organising planet and animal cells.

Over the course of this term our pupils will acquire new knowledge and vocabulary to describe systems in plants and animals. They will revisit the difference the digestive system that they have previously studied. Undertake food tests to test for macronutrients and be able to describe positive tests of these. They will be taught what enzymes are and how these are used in the digestion of carbohydrates, proteins and lipids. They will also investigate the factors that affect the rate of enzyme action.

The circulatory system, respiratory system and organ systems in plants are studied this term too. Pupils will learn more about the circulatory system by studying the structure of the heart, blood vessels and by learning about the components of blood. Their understanding of the structure of capillaries is applied when they learn about the structure of the lungs and the adaptations of the alveoli for gas exchange.

Pupils will encounter new transport systems in plants when they learn about transpiration. They study the structure of the xylem and phloem vessels and investigate the factors that affect the rate of transpiration in plants.