



# SCIENCE - YEAR 8

## **Biology: Genes**

In our first biology topic of Year 8 we will consider the reasons for variation in populations that arise from genetics and environmental factors. We will look at key stages in life including adolescence, the male and female reproductive systems, the menstrual cycle and gestation.

## **Physics: Waves**

In our first look at waves we will focus on sound and light including how the human ear and eye are able to detect these waves. This will also include experiments to look at wave behaviours such as reflection and refraction and the construction of accurate ray diagrams to model these effects.

## **Chemistry: Matter**

Within this module students will look at how the elements in a group within the periodic table all react in a similar way and can often show a pattern in terms of reactivity and developing an understanding of the naming and formation of chemical compounds and giving them the building blocks to understand bonding and the properties this can lead to.

## **Biology: Organisms**

Students will develop their understanding of the digestive process in humans and the process of breathing linking to the reason oxygen is needed and carbon dioxide needs to be removed as part of respiration. In addition, we will consider drugs of all classifications and their effects on the body specifically linking these to the breathing system and pregnancy.

## **Physics: Forces**

We will investigate the cause of pressure in liquids and gases and determine whether objects will sink or float based on Archimedes' principle, weight and up-thrust, this will extend to the effect of a resultant force on the motion of objects in all media. In addition, we will analyse how different stresses on a solid object can be used to explain observations where objects scratch, sink into or break surfaces.

## **Chemistry: Reactions**

Within this module students will develop their understanding of chemical bonding, both in terms of breaking and formation and the associated energy changes in terms of exothermic and endothermic reactions. We will also study various chemical reaction types including reduction, oxidation and combustion and consider the chemical changes, equations and the idea of atom conservation.

## **Biology: Ecosystems**

We will consider why plants and algae do not eat, but use energy from light, together with carbon dioxide and water, to make glucose (food) through photosynthesis. Linking to this and our previous topics of digestion and breathing, we will examine the importance of the respiration in plants and animals in both aerobic and anaerobic forms.

## **Physics: Electromagnetism**

Revisiting electromagnetism we will consider the cause and differences between induced and permanent magnetism and constructing field line diagrams for magnetic interactions. We will further develop the link between electricity and magnetism and their use in everyday applications and how the strength of an electromagnet can be changed.

