



# SCIENCE - YEAR 7

## Physics: Forces

As part of our initial physics topics we will look at the importance of speed and gravity. This will include the effect of forces on motion, mass and weight and how gravitational forces vary depending on the mass of objects and the distance between them.

## Physics: Electromagnets

In our second physics topic we will build correct electrical circuits, consider the key differences between series and parallel circuits and utilise a range of mathematical formulae to establish key information relating to the behaviour of electrical circuits. We will also look at charged objects and how electric fields can cause attraction and repulsion.

## Physics: Energy

In our third physics topic we will consider the costs of energy and how energy is transferred. In this topic students will be look at electricity generation and calculating energy costs of typical home electrical products. We will also look at the conservation of energy, energy transfers and dissipation.

## Physics: Waves

In our final physics topic of year 7 we look at 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 diagram to model these effects.

## Chemistry: Matter

Our first chemistry topic will introduce the particle model as a way of representing the three states of matter and their characteristic behaviours. We will also examine changes of state, diffusion and methods of separation such as filtration, evaporation, chromatography and distillation.

## Chemistry: Reactions

In the second of our chemistry topics we will study the differences between acids and alkalis, using indicators to measure pH and neutralisation reactions.

## Chemistry: Reactions

Continuing with our reaction topic we will consider the differences between elements, metals and non-metals in terms of their reactions with acids, oxygen, water and in displacement reactions.

## Chemistry: Earth

As part of the final chemistry topic of year 7 we look at the structure of the Earth, the formation of rocks, the rock cycle and ceramics. We will the look at wider Solar system, the Moon and beyond.

## Biology: Organisms

The initial biology topic will look at the human skeleton including movement due to muscle and joint structures. We will then look more closely at cell structure and function in animals and plants including those specialised for specific functions.

## Biology: Ecosystem

In the interdependence topic we will examine the importance of food chains and food webs. We will also consider how these are affected by competition and destructive influences.

## Biology: Ecosystem

Continuing with our ecosystem topic we will continue by looking at plant reproduction and specifically the structure of flowers, pollination, fertilisation, germination and methods of seed dispersal.

## Biology: Genes

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

