

WHAT ARE THE BIG AIMS OF YEAR 7?

To investigate the fundamental ideas in Science and how this links to the world around us. Pupils will be introduced to several key concepts which are; matter, energy, organisms, forces, reactions and genes.

WHAT WILL EXCELLENCE LOOK LIKE IN YEAR 7?

- We identify and choose appropriate equipment for an investigation
- Carry out a risk assessment for any experiment we do.
- Apply key knowledge to a wide range of real world situations for key concepts studied.
- Construct opinions and communicate ideas with detailed explanations.

WHAT KNOWLEDGE DO THE PUPILS NEED TO ACQUIRE?

Pupils will study the following units in Y7:

7.0 Safety and Intro to Science, 7.1 Matter 1 - Particle Model and Separating Mixtures, 7.2 Energy - Energy Transfer & Energy Cost, 7.3 Organisms 1 - Cells and Movement, 7.4 Forces - Contact Forces & Non Contact Forces (Gravity and Magnetism), 7.5 Reactions - Metals and Non Metals & Acids and Alkalis, 7.6 Genes - Reproduction and 7.7 Forces – Speed.

We use models to investigate how to classify different substances and to explain the properties of materials in different states. We investigate different techniques to explore if and how they can be separated.

We explore the risks involved with working with acids and alkalis and begin to establish safe working practices to handle these.

Looking at the world around us we begin to question what makes things work and how different forms of energy can be conserved and transferred. In addition we consider different forces that keep us on the ground and those that get us from A to B.

Pupils will learn how organisms are made up and identify different types of cells from their structure and use microscopes to look further into these. Pupils will explore the life process of reproduction and how the reproductive system works in some organisms.

WHAT SKILLS DO THE PUPILS NEED TO DEVELOP?

- Hazards/Risks/Precautions
- How to collect data in tables
- Structure of a method
- Identification and substitution in calculations
- Plotting and reading graphs
- Variables
- Calculating means and ranges
- Repeatability and reproducibility
- Accuracy and Precision
- Calculating gradients from graphs

WHAT MISCONCEPTIONS MAY THEY HAVE FROM PREVIOUS LEARNING?

What constitutes as living and non-living and the scale of living organisms, the movement and behaviour of particles in the three states of matter, the idea that energy is not conserved.