

WHAT ARE THE BIG AIMS OF YEAR 7?

To investigate the fundamental ideas in Science and how this links to the world around us.

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.
- Construct opinions and communicate ideas with detailed explanations.

WHAT KNOWLEDGE DO THE PUPILS NEED TO ACQUIRE?

We identify different types of cells from their structure and use microscopes to look further into these. We explore different habitats and ecosystems and look at the consequences to any changes within there and the effects on humans.

We use models to investigate how to classify different substances and to explain the properties of materials in different states. We find out about elements and how they can combine to make new compounds and mixtures. 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.

WHAT SKILLS DO THE PUPILS NEED TO DEVELOP?

We begin to familiarise ourselves with scientific conventions when communicating with other scientists. We begin to manipulate variables and equipment to answer simple hypotheses, collect data and with support decide on the best way to display this allowing simple conclusions to be drawn. We also begin to develop simple risk assessments when working in hazardous situations and learn how to minimise risk.

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.

WHAT ASSESSMENTS WILL BE USED ACROSS THE YEAR TO DEMONSTRATE HOW THE PUPILS HAVE ACQUIRED THE KNOWLEDGE AND DEVELOPED THE SKILLS?

Using investigative approaches: planning an approach: describe an appropriate approach to answer a scientific question using sources of evidence and, where appropriate, making relevant observations or measurements using appropriate apparatus e.g. agree how often to measure temperature' and make sensible decisions about the choice of apparatus to produce useful data

Using investigative approaches: assessing risk and working safely: To demonstrate how action has been taken to control obvious risk and how methods are adequate for the task during practical work and recognise an effective control method, e.g. explain the reasons for acids being managed in a particular way and specific safety precautions being deployed

Thinking scientifically: developing argument: To identify a range of scientific data and other evidence to back an argument and the counterclaim in less complex and/or familiar contexts, e.g. establishing a wind farm by selecting appropriate pieces of scientific information to answer a question or back an argument using personal experience or non-scientific evidence to support an argument. Recognising that scientists gather evidence for their ideas and experiments to support or disprove theories

Applications, implications and cultural understanding: Demonstrate an awareness for some of the benefits, drawbacks of well-known scientific and technological developments with which they are familiar.