

SUBJECT:	Science	YEAR GROUP:	7
PURPOSE OF STUDY			
<p>A high-quality science education provides the foundations for understanding the world through the specific disciplines of biology, chemistry and physics. Science has changed our lives and is vital to the world's future prosperity, and all pupils should be taught essential aspects of the knowledge, methods, processes and uses of science. Through building up a body of key foundational knowledge and concepts, pupils should be encouraged to recognise the power of rational explanation and develop a sense of excitement and curiosity about natural phenomena. They should be encouraged to understand how science can be used to explain what is occurring, predict how things will behave, and analyse causes.</p>			
THE NATIONAL CURRICULUM FOR ART AND DESIGN AIMS TO ENSURE THAT ALL PUPILS:		NATIONAL CURRICULUM LINKS	
<p>The national curriculum for science aims to ensure that all pupils:</p> <ul style="list-style-type: none"> • develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics. • develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them. • are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future. 		<p>Cross Curricular links:</p> <p>Maths - Working out the mass of chemicals.</p> <ul style="list-style-type: none"> - Working out energy and measuring for experiments - when looking at Bee pollination – graphs looking at bee pollination across the UK over the years. - Equations to find the time, speed and distance. <p>English - Evaluating skills when writing up experiments.</p> <p>IT- researching using technology.</p>	
TOPICS COVERED:			
<ul style="list-style-type: none"> - Cells and organisation - The skeletal and muscular systems - Acids and Alkalis -Energy -Energy changes and transfers -Changes in systems - Reproduction - Diffusion - Properties of state - Forces and motion 			

- Describing motion
- Atoms, elements and compounds
- Energy in matter

INTENT OF SUBJECT:

Throughout year 7, pupils will be able to develop their knowledge and understanding on Biology focussing on their bodies, muscular systems and the cells within plants and animals. Pupils will move onto learning about acids, alkalis and neutralisation, where they can be found in everyday life and how we can test to find them before looking at energy and the different energy sources, how energy is stored and transferred. In Spring, pupils will begin to learn about reproduction and how when we grow up reproduction is how we have children as adults. This half term will be linked to sexual relationships within other subjects such as RSHE. Throughout Spring, pupils will move away from Biology and will learn all about the periodic table, different states of matter, particles and how they change looking at their prior knowledge and building on their skills.

During the Summer term, pupils will develop their knowledge with forces and be confident to identify what a force is and which is being used. They will begin creating distance time graphs and will develop confidence in interpreting and applying skills learnt to draw their own. Pupils will explore the particle model, atoms, elements and compounds; they will look at chemical symbols and formulae for compounds-building on what was learnt in spring 2. As we come to the end of the term, pupils will learn about motion in gases, energy in matter and how energy is stored in matter.

SKILLS OVERVIEW BY HALF TERM:

AUTUMN ONE

- Understanding the structure and function of living organisms
- Observing, interpreting, and recording using a light microscope.
- Identifying the functions of living organisms.
- Comparing the similarities and differences.
- Sorting specific cells into hierarchical organisation.

AUTUMN TWO

- Defining acids and alkalis.
- Measuring using the pH scale.
- Identifying and recording reactions that take place.

SPRING ONE

- Understanding and identifying reproduction within humans and plants.
- Labelling diagrams
- Recording the role of specific functions / parts of a human / plant.
- Reproduction in plants, including flower structure, wind and insect pollination,

SPRING TWO

- Understanding what we mean by diffusion in liquids and gases.
- Recognising the difference between chemical and physical changes.
- Explaining our findings.
- Carrying out experiments and recording / evaluating results
- Comparing similarities and differences.

SUMMER ONE

SUMMER TWO

- Recognising the force being used.
- Reflecting and adapting direction.
- Describing the motion being carried out.
- Recording and discussing the representation of a journey.
- Creating graphs to show our findings.

- Identifying the changes of state
- Comparing similarities and differences.
- Understanding specific scientific models