

Science - Year 7	Term one	Term two	Term three
<p>Key Knowledge and understanding</p>	<p><u>Organisms</u> including Cells as the basic units of living organisms, and how to observe and interpret their structure using a light microscope. The structure and functions of the human skeleton and biomechanics.</p> <p><u>Forces</u> including The use of force arrows in diagrams, balanced and unbalanced forces, and gravity, magnetic and static forces as examples of non- contact forces. Speed = distance ÷ time Representing journeys on a distance time graph and relative motion.</p> <p><u>Electricity and Electromagnets</u> including Static electricity and the use of current, potential difference and resistance in describing current electricity.</p> <p><u>Matter and Separating mixtures</u> including Use of the particle model to explain changes of state, diffusion and gas pressure. Solubility, filtration and chromatography.</p>	<p><u>Acids and Alkalis</u> including the use of indicators, the pH scale and neutralisation. The making of named salts.</p> <p><u>Metals and Non metals</u> including the key differences between them, their placement in the periodic table and the reactions of metals with oxygen, water and acids. Displacement reactions.</p> <p><u>Ecosystems</u> including food webs, bioaccumulation and how organisms both affect and are affected by their environment.</p> <p><u>Plant reproduction</u> including flower structure, germination and seed dispersal.</p> <p><u>Energy and Energy Transfer</u> including Non renewable and renewable sources of energy. The calculation of fuel uses and their costs in the domestic context. Energy changes, dissipation and the calculation of efficiency.</p>	<p><u>Sound waves</u> including their key features of amplitude, frequency and wavelength, and the ear and hearing.</p> <p><u>Light waves</u> including the law of reflection, ray diagrams, refraction, eye structure and how convex and concave lenses can correct vision. How white light is refracted through a prism, colour filters and absorption by different coloured surfaces.</p> <p><u>Earth</u> including it's basic structure, the 3 main types of rock and the rock cycle.</p> <p><u>Universe</u> including the size and scale of the solar system and our galaxy, and how movements of the Earth and Moon explain day and night, the seasons and the phases of the moon.</p> <p><u>Genes</u> including causes of variation and how this allows adaptation to the environment.</p> <p><u>Human reproduction</u> including puberty, fertilisation and development in the womb.</p>

Progression	Recall of scientific knowledge. Development of mathematical skills. Application of this knowledge to explain observations of the world around us.		
Challenge	Extend knowledge to explain the scientific concepts in a wider range of unknown contexts.		
Skills	Correct use of the light microscope, newton meter and the measurement of current and potential difference. Problem solving with electrical circuits. The use of a table to present experimental data, calculating mean values and identifying anomalies. Planning an experiment and the identification of the key variables	Evaluating a method Identifies sources of error Evaluate risks Scientific modelling and scientific validation	Interpretation of diagrams showing sound waves and oscilloscope traces. Drawing of light ray diagrams.
Scope ie Local/Global	Application to the everyday world both local and global.		
Assessment	Summative topic test assessing factual knowledge and understanding of the main concepts.		