

## Key Stage Two Curriculum Overview

Year 5			
<p><b>Properties of materials</b></p> <ul style="list-style-type: none"> <li>• Properties of solids, liquids and gases.</li> <li>• Classify materials according to solubility, magnetism and thermal and electrical conduction.</li> </ul> <p><b>Humans</b></p> <ul style="list-style-type: none"> <li>• The location and function of major body organs.</li> <li>• The structure and function of the circulatory system including the heart and blood vessels.</li> <li>• The work of William Harvey.</li> </ul> <p><b>Reversible changes</b></p> <ul style="list-style-type: none"> <li>• Factors affecting the rate of dissolving.</li> <li>• Changes of state</li> <li>• Methods of separation including filtering, sieving, evaporation and distillation.</li> </ul>	Christmas	<p><b>Life Cycles</b></p> <ul style="list-style-type: none"> <li>• The processes of pollination, fertilisation, seed dispersal and germination.</li> <li>• The growth and development of plants.</li> <li>• The life cycles of frogs, butterflies and honey bees.</li> <li>• The work of David Attenborough.</li> </ul> <p><b>Earth, Sun and Moon.</b></p> <ul style="list-style-type: none"> <li>• The relative positions of the Earth, Sun and Moon.</li> <li>• The time taken for the Earth to orbit the Sun and the time taken for the Moon to orbit the Earth.</li> <li>• The planets and their position in the solar system</li> <li>• The development of the heliocentric model of the solar system.</li> </ul>	Easter
Year 6			
<p><b>Circuits</b></p> <ul style="list-style-type: none"> <li>• Common circuit symbols.</li> <li>• How to construct series and parallel circuits.</li> <li>• Effects of increasing the number of components in a series circuit.</li> </ul> <p><b>Reversible and Irreversible changes</b> □</p> <p>Changes of state.</p> <ul style="list-style-type: none"> <li>• Indicators of chemical reactions.</li> <li>• Examples of common chemical reactions.</li> <li>• Burning and fire safety.</li> </ul>		<p><b>Forces</b></p> <ul style="list-style-type: none"> <li>• The effects of balanced and unbalanced forces.</li> <li>• The accurate measurement of forces.</li> <li>• The effects of friction, upthrust, air resistance, magnetism and gravity</li> </ul> <p><b>Dissolving and separating</b></p> <ul style="list-style-type: none"> <li>• Factors affecting the rate of dissolving.</li> <li>• Methods of separation including filtering, sieving, evaporation and distillation.</li> </ul>	<p><b>Microbes</b></p> <ul style="list-style-type: none"> <li>• Types of microbes.</li> <li>• Disease.</li> <li>• Useful applications of microbes.</li> <li>• Immunisation and the work of Edward Jenner.</li> </ul> <p><b>Interdependence and adaptation</b> □</p> <p>Differences in environments.</p> <ul style="list-style-type: none"> <li>• Adaptation of plants and animals.</li> <li>• Feeding relationships and food chains.</li> </ul> <p><b>Acids and Alkalis</b></p> <ul style="list-style-type: none"> <li>• Some common acids and alkalis.</li> <li>• How to use indicators to test for acids and alkalis.</li> <li>• The pH scale.</li> <li>• Common hazard symbols.</li> </ul>

Underpinning all scientific teaching and learning are the key scientific principles of:

- Thinking Scientifically
- Understanding the Applications and Implications of Science
- Communication and Collaboration in Science
  - Understanding Investigative Approaches
  - Working Critically with Evidence.

## Key Stage Three Curriculum Overview

Year 7			
<p><b>Cells and body systems</b></p> <ul style="list-style-type: none"> <li>• The structure of plant and animal cells.</li> <li>• The function of some cell organelles.</li> <li>• The adaptations of specialist cells.</li> <li>• The organs of the human body.</li> <li>• The muscular, skeletal and respiratory systems.</li> </ul> <p><b>Acids, alkalis and chemical reactions</b> □</p> <p>The indicators of chemical changes.</p> <ul style="list-style-type: none"> <li>• Reactions involving acids including neutralisation, metals and carbonates and acids.</li> <li>• Reactions of metals and oxygen.</li> <li>• Combustion reactions.</li> </ul>	Christmas	<p><b>Forces</b></p> <ul style="list-style-type: none"> <li>• Forces as pushes or pulls.</li> <li>• Moment as the turning effect of a force.</li> <li>• Hooke's Law.</li> <li>• Work and energy.</li> <li>• Non-contact forces.</li> <li>• Pressure.</li> <li>• Laws of motion.</li> <li>• Speed.</li> <li>• Distance-time graph.</li> </ul> <p><b>Reproduction and Inheritance</b> □</p> <p>Reproduction in humans.</p> <ul style="list-style-type: none"> <li>• A simple model of chromosomes, genes and DNA in heredity.</li> <li>• The variation between individuals of different species.</li> <li>• The importance of biodiversity.</li> <li>• Heredity as the process by which genetic information is transmitted from one generation to the next.</li> </ul>	<p style="text-align: center; font-weight: bold;">Easter</p> <p><b>Particle theory and mixtures</b></p> <ul style="list-style-type: none"> <li>• The properties of the different states of matter (solid, liquid and gas) in terms of particle model.</li> <li>• Changes of state in terms of particle model.</li> <li>• Changes with temperature in motion and spacing of particles.</li> <li>• Brownian motion.</li> <li>• Diffusion in terms of particle model.</li> <li>• The concept and identification of a pure substance.</li> </ul> <p><b>Light and sound</b></p> <ul style="list-style-type: none"> <li>• Laws of reflection and refraction.</li> <li>• The effect of convex and concave mirrors.</li> <li>• The effect of lenses.</li> <li>• Explaining pitch and volume in terms of the frequency and amplitude of waves respectively.</li> </ul>
Year 8			
<p><b>Health and Lifestyles</b></p> <ul style="list-style-type: none"> <li>• Food groups and the tests for starch, glucose, fat and protein.</li> <li>• The role of enzymes within digestion. □</li> <li>• The function of the digestive organs.</li> <li>• Respiration as the release of energy from glucose.</li> <li>• The circulatory and respiratory system.</li> <li>• The effects of smoking, drug use and an unbalanced diet.</li> </ul> <p><b>Atoms, elements, compounds and mixtures</b> □</p> <p>The Dalton model of the atom.</p> <ul style="list-style-type: none"> <li>• The work of Demetri Mendeleev and the formation of the periodic table.</li> <li>• The formation of compounds including the reactions of group 1 metals and water.</li> <li>• The Law of conservation of mass during a chemical reaction.</li> </ul>		<p><b>Light and sound</b></p> <ul style="list-style-type: none"> <li>• Laws of reflection and refraction.</li> <li>• The effect of convex and concave mirrors.</li> <li>• The effect of lenses.</li> <li>• Explaining pitch and volume in terms of the frequency and amplitude of waves respectively.</li> </ul> <p><b>The Earth</b></p> <ul style="list-style-type: none"> <li>• The composition of the atmosphere.</li> <li>• Sedimentary, igneous and metamorphic rocks.</li> <li>• The rock cycle.</li> <li>• The carbon cycle.</li> </ul>	<p><b>Energy and motion</b></p> <ul style="list-style-type: none"> <li>• Energy resources and the generation of electricity.</li> <li>• Work and energy</li> <li>• Speed calculations.</li> <li>• Pressure in fluids.</li> <li>• Turning forces.</li> <li>• Conduction, convection and radiation.</li> <li>• Changes of state in terms of particles.</li> <li>• Expansion and contraction in solids, liquids and gases.</li> </ul> <p><b>Ecology</b></p> <ul style="list-style-type: none"> <li>• Interdependence of organisms with an ecosystem.</li> <li>• Food webs and pyramid of numbers and biomass.</li> <li>• Variation and adaptations within an ecosystem.</li> </ul>

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