

<b>SUBJECT:</b>	<b>Science</b>	<b>YEAR GROUP:</b>	<b>5</b>
<b>PURPOSE OF STUDY</b>			
<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>			
<b>THE NATIONAL CURRICULUM FOR SCIENCE AIMS TO ENSURE THAT ALL PUPILS:</b>		<b>NATIONAL CURRICULUM LINKS</b>	
<ul style="list-style-type: none"> <li>• Develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics</li> <li>• 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</li> <li>• Are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future</li> </ul>		<p>English – writing, speaking and listening            Maths – collecting and recording data            Life skills/technology – using kitchen equipment appropriately and teamwork.            English – writing, speaking and listening            Maths – collecting and recording data            Technology – Making objects to test different forces, pulleys and levers            Outdoor learning            History – Isaac Newton and Galileo Galilei. historical developments within science            Geography - Africa            RSHE - wellbeing            English – advert presentation            RSHE – changing and growing            Maths – measuring and counting, surveys            Art - drawing            Music – musical instruments            English – speaking and listening, reading, writing            RSHE – feelings and opinions</p>	
<b>TOPICS COVERED:</b>			
<ul style="list-style-type: none"> <li>• Properties and changes of materials and Forces</li> <li>• Earth and Space and Living things and their habitats</li> </ul>			

- Animals including humans and sound

#### **INTENT OF SUBJECT:**

- Pupils will understand properties of materials and use knowledge of solids, liquids and gases to decide how mixtures could be separated.
- Pupils will explain through fair tests the particular use of everyday materials.
- Pupils will demonstrate that dissolving, mixes and changes of state are reversible changes.
- Pupils will understand that some changes result in formation of new materials and are irreversible.
- Pupils will develop scientific investigation skills including prediction, setting up fair tests, using variables, recording findings and writing conclusions.
  
- Pupils will develop an understanding of gravity and the effects of gravity.
- Pupils will complete enquiries to identify effects of air resistance, water resistance and friction.
- Pupils will develop an understanding of scientists work such as Isaac Newton.
- Pupils will develop an understanding of pulleys and levers and the movement of these
  
- To understand the solar system
- To know the difference between heliocentric and geocentric
- To understand the moon phases
- To understand sun dials and time zones
  
- To learn about living things and their habitats
- To know the life cycles of different animals
- To understand reproduction in different animals
  
- Describe the changes as humans develop to old age.
- Pupils should draw a timeline to indicate stages in the growth and development on humans.
- Pupils will work scientifically by researching gestation periods of other animals and comparing with humans; by finding out and recording the length and mass of a baby as it grows.
  
- Understand how sound is created through vibration

<b>SKILLS OVERVIEW BY HALF TERM:</b>	
<b>AUTUMN ONE</b>	<b>AUTUMN TWO</b>
<ul style="list-style-type: none"> <li>• know that some materials will dissolve in liquid to form a solution and describe how to recover a substance from a solution.</li> <li>• Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating.</li> <li>• Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic.</li> <li>• Demonstrate that dissolving, mixing and changes of state are reversible changes.</li> <li>• Explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda.</li> </ul>	<ul style="list-style-type: none"> <li>• Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object</li> <li>• Identify the effects of air resistance, water resistance and friction, that act between moving surfaces</li> <li>• Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.</li> </ul>
<b>SPRING ONE</b>	<b>SPRING TWO</b>
<ul style="list-style-type: none"> <li>• Describe the movement of the Earth, and other planets, relative to the Sun in the solar system.</li> <li>• Describe the movement of the Moon relative to the Earth.</li> <li>• Describe the Sun, Earth and Moon as approximately spherical bodies.</li> <li>• use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.</li> </ul>	<ul style="list-style-type: none"> <li>• Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird</li> <li>• Describe the life process of reproduction in some plants and animals.</li> <li>• Describe the changes as humans develop to old age.</li> </ul>

<b>SUMMER ONE</b>	<b>SUMMER TWO</b>
<ul style="list-style-type: none"> <li>• Explain the stages of human life and the changes and growth humans experience.</li> <li>• Explain what happens during puberty.</li> <li>• Explore different gestation periods and growth in other animals and compare to humans.</li> <li>• Describe the simple functions of the basic parts of the digestive system in humans.</li> <li>• Construct and interpret a variety of food chains, identifying producers, predators and prey.</li> </ul>	<ul style="list-style-type: none"> <li>• Describe sounds around them.</li> <li>• Identify high and low sounds.</li> <li>• Identify loud and quiet sounds.</li> <li>• Observe how different sounds are made.</li> <li>• Describe how sounds change over distance. Participate in an investigation to find the best material for absorbing sound.</li> <li>• Create a musical instrument that will play different sounds Predict what will happen in an investigation.</li> <li>• Make observations.</li> <li>• Explain how sound sources vibrate to make sounds.</li> <li>• Explain how vibrations change when the loudness of a sound changes.</li> <li>• Explain how sounds travel to reach our ears.</li> <li>• Describe the pitch of a sound.</li> <li>• Describe patterns between the pitch of a sound and the features of the object that made the sound. Explain how sound travels through a string telephone.</li> <li>• Identify the best material for absorbing sound.</li> <li>• Create a musical instrument that can play high, low, loud and quiet sounds. Make observations and conclusions</li> <li>• Explain how we hear and interpret sounds. Explain that sounds travel differently through different materials.</li> <li>• Identify and explain patterns between the pitch of a sound and the features of the object that made the sound.</li> <li>• Explain how sounds change over distance. Explain why sounds travel better through solids than gases.</li> <li>• Explain why some materials absorb sound.</li> <li>• Explain how their musical instrument plays different sounds. Set up reliable and accurate investigations.</li> <li>• Make and explain predictions.</li> <li>• Make and record accurate observations.</li> </ul>

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|  | <ul style="list-style-type: none"><li>• Use scientific language to explain their findings.</li><li>• Be able to ask and answer questions based on their learning using scientific language.</li></ul> |
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