

Year 2022-2023							
Other Curricular Goals	CURRICULAR GOAL: KNOW HOW TO develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics and to develop an 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 and to know how science is used and its implications it holds today and for the future.						
	COMPONENT: Know what to develop contextual understanding of our natural environment. Knowing what plants and living things need to survive and be able to justify/explain their answers using scientific vocabulary. <b>(Plants and living things)</b>						
	Reception Expected	Year 1 Expected	Year 2 Expected	Year 3 Expected	Year 4 Expected	Year 5 Expected	Year 6 Expected
Know and use Standard English appropriately.  Know how to develop socially: <ul style="list-style-type: none"> <li>Working and socialising with other pupils.</li> <li>Demonstrating mutual respect and tolerance of different views.</li> </ul>	Know how to plant seeds and that they grow into plants.	Know and name a variety of common wild and garden plants. Know and name the petals, stem, leaves and root of a plant. Know and name the roots, trunk, branches and leaves of a tree.	Know and explain how seeds and bulbs grown into plants Know what plants needs in order to grow and stay healthy (water, light and suitable temperature)	Know how water is transported within plants Know the plant life cycle, especially the importance of flowers.	Use classification keys to group, identify and name living things Know how changes to an environment could endanger living things Group materials based on their state of matter (solid, liquid, gas)	Know the life cycle of living things e.g. mammal, amphibian, insect and bird Know the differences between different life cycles Know the process of reproduction in plants Know the process of reproduction in animals	Classifying living things into broad groups according to observable characteristics and based on similarities and differences Know how living things have been classified Give reasons for classifying plants and animals in a specific way
Know how to have a growth mindset: <ul style="list-style-type: none"> <li>Learn from mistakes</li> <li>Know that you might be right</li> </ul>	<b>seed</b> <b>soil</b> <b>grow</b> <b>new life</b> <b>plant</b>	<b>buds</b> <b>bulbs</b> <b>deciduous</b> <b>evergreen</b> <b>trunk</b> <b>vegetable</b> <b>wild plants</b> <b>environment</b> <b>blossom</b> <b>petals</b> <b>branches</b>	<b>roots</b> <b>crown</b> <b>evergreen</b> <b>blossom</b> <b>woodland</b> <b>habitat</b> <b>oxygen</b>	<b>nutrients</b> <b>pollination</b> <b>seed dispersal</b> <b>fertiliser</b> <b>seed formation</b> <b>stigma</b> <b>anther</b> <b>soil</b>		<b>puberty</b> <b>gestation</b> <b>classification</b> <b>precision</b> <b>reproduction</b> <b>teenager</b> <b>obese</b> <b>toddler</b> <b>embryo</b>	

COMPONENT: Know how to understand the processes that classify animals and humans, including similarities and differences between different them. Know how to develop prior knowledge of our internal organs and the importance they play within our daily lives and how to protect them. <b>(Animals including humans)</b>						
<p>Know how a tadpole changes into a frog (life cycle) Know how we can look after animals (focus on mini-beasts). Children will be able to create a bug hotel for them to shelter in.</p>	<p>Know how to classify a range of animals by amphibian, reptile, mammal, fish and birds Know and classify animals by what they eat (carnivore, herbivore and omnivore) Know how to sort by living and non living things</p>	<p>Know the basic stages in a life cycle for animals (including humans) Know why exercise, a balanced diet and good hygiene are important for humans</p>	<p>Know about the importance of a nutritious, balanced diet Know how nutrients, water and oxygen are transported within animals and humans Know about the skeletal and muscular system of a human</p>	<p>Identify and name the parts of the human digestive system Know the functions of the organs in the human digestive system Identify and know the different types of human teeth Know the functions of different human teeth Use and construct food chains to identify producers, predators and prey</p>	<p>Create a timeline to indicate stages of growth in humans</p>	<p>Identify and name the main parts of the human circulatory system Know the function of the heart, blood vessels and blood Know the impact of diet, exercise, drugs and lifestyle on health Know the ways in which nutrients and water are transported in animals, including humans</p>
<p><b>tadpole frog change life cycle</b></p>	<p><b>fish amphibians reptiles birds mammals carnivore herbivore omnivore tame wild nocturnal</b></p>					

## LOTHERSDALE PRIMARY SCHOOL – SCIENCE CURRICULUM

**COMPONENT: Know how to identify, classify, compare and group every day materials, rocks, properties and state of matter, understanding that heat and pressure affect different materials including liquid, solids and gasses. (every day materials, rocks and states of matter)**

	Know the name of the materials an object is made from Know about the properties of everyday materials	Know how materials can be changed by squashing, bending, twisting and stretching	Compare and group rocks based on their appearance and physical properties, giving reasons Know how soil is made and how fossils are formed Know about and explain the difference between sedimentary, metamorphic and igneous rock	Know the temperature at which materials change state Know about and explore how some materials can change state Know the part played by evaporation and condensation in the water cycle	Compare and group materials based on their properties (e.g. hardness, solubility, transparency, conductivity, [electrical & thermal], and response to magnets Know and explain how a material dissolves to form a solution Know and show how to recover a substance from a solution Know and demonstrate how some materials can be separated and that changes can be reversible and irreversible (and sometimes forms a new material)	

COMPONENT: Know how to build on contextual understanding of the study of matter in space, time and all around them and how they are related to each other (physics).

<p>Know the changing seasons and the natural world. Children will be able to explore the changing landscape in the woodland area throughout the year.</p>	<p>Name the seasons and know about the type of weather in each season</p>	<p><b>Know that global warming and climate change are happening all around them.</b> <b>Know how climate change affects our environment.</b> <b>Know what they can do to help reduce climate change.</b></p>	<p>Know that dark is the absence of light Know that light is needed in order to see and is reflected from a surface Know and demonstrate how a shadow is formed and explain how a shadow changes shape Know about the danger of direct sunlight and describe how to keep protected</p>	<p>Know how sound is made, associating some of them with vibrating Know how sound travels from a source to our ears Know the correlation between pitch and the object Know the correlation between the volume of a sound and the strength of the vibrations that produced it Know what happens to a sound as it travels away from its source</p>	<p>Know about and explain the movement of the Earth and other planets relative to the Sun Know about and explain the movement of the Moon relative to the Earth Know and demonstrate how night and day are created Describe the Sun, Earth and Moon</p>	<p>Know how light travels Know and demonstrate how we see objects Know why shadows have the same shape as the object that casts them Know how simple optical instruments work e.g. periscope, telescope, binoculars, mirror, magnifying glass etc.</p>
		<p><b>Environment</b> <b>Global warming</b> <b>Fossil fuels</b> <b>Renewable energy</b> <b>Habitats</b> Connected knowledge: <b>Continent</b> <b>Country</b> <b>Globe</b> <b>Ocean</b></p>	<p><b>Light source</b> <b>Reflection</b> <b>Shadows</b> <b>Opaque</b> <b>Translucent</b> <b>Transparent</b> <b>Pupil (simple definition)</b> <b>Dilates</b> <b>Constricts</b></p>			<p><b>Light wave</b> <b>Light source</b> <b>Concave</b> <b>Convex</b> <b>Filters</b> <b>Lens</b> <b>Retina</b> <b>Cornea</b> <b>Iris</b> <b>Pupil (expanded definition)</b></p>

