



## Subject whole school overview- Science

Year	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
<p><b>1</b></p> <p><b>Children should use the local environment throughout the year to explore and answer questions about animals in their habitat. They should understand how to take care of animals taken from their local environment and the need to return them safely after study</b></p>	<p><b>Exploring Everyday Materials</b></p> <p>Distinguish between an object and the material from which it is made.</p> <p>Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock.</p> <p>Compare and group together a variety of everyday materials on the basis of their simple physical properties.</p> <p>Describe the simple physical properties of a variety of everyday materials.</p> <p><b>Study of Wilbur and Orville Wright</b></p>	<p><b>Plants and Trees</b></p> <p><b>What changes do we see in each season?</b></p> <p>Identify and name a variety of common plants, including garden plants, wild plants.</p> <p>Identify and describe the basic structure of a variety of common flowering plants, including roots, stem/trunk, leaves and flowers.</p> <p>Identify &amp; name a variety of common wild and garden plants, including deciduous &amp; evergreen trees.</p> <p>Identify &amp; describe the basic structure of flowering plants, including trees. Observe changes across the four seasons.</p> <p>Observing closely using simple equipment. Identifying &amp; Classifying. Using their observations and ideas to suggest</p>	<p><b>Humans</b></p> <p>Animals have senses to help individuals survive. When animals sense things they are able to respond.</p> <p>Explore and compare the differences between things that are living, dead, and things that have never been alive.</p> <p>Identify, name, draw and label the basic parts of the human body and say which part is associated with each sense.</p>	<p><b>Uses of Everyday Materials</b></p> <p>Describe the simple physical properties of a variety of everyday materials.</p> <p>Know and test materials for strength</p> <p>Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock</p> <p>Distinguish between an object and the material from which it is made</p> <p>Compare and group together a variety of everyday materials on the basis of their simple physical properties</p>	<p><b>Animals</b></p> <p>Identify and name a variety of common animals that are carnivores, herbivores and omnivores</p> <p>describe and compare the structure of a variety of common animals (birds, fish, amphibians, reptiles, mammals and invertebrates, and including pets)</p>	<p><b>Seasonal change.</b></p> <p>Review of year &amp; seasonal changes.</p> <p>Observe the apparent movement of the Sun during the day.</p> <p>Observe changes across the four seasons.</p> <p>observe and describe weather associated with the seasons and how day length varies</p>

		answers to questions. Gathering & Recording data.				
<p><b>2</b></p> <p><b>Children should use the local environment throughout the year to observe how plants grow. They should be introduced to the requirements of plants for germination, growth and survival, as well as the processes of reproduction and growth in plants</b></p>	<p><b>Plants</b></p> <ul style="list-style-type: none"> <li>observe and describe how seeds and bulbs grow into mature plants</li> <li>find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.</li> <li>Flowering plants make seeds to reproduce and make more plants. Some plants die after producing seeds and others live for many generations.</li> </ul>	<p><b>Animals including humans - Diet and Health</b></p> <ul style="list-style-type: none"> <li>find out about and describe the basic needs of animals, including humans, for survival (water, food and air)</li> </ul> <p>Describe the importance to humans of exercise, eating the right amounts of different types of food and hygiene.</p>	<p><b>Animals including humans - growth</b></p> <ul style="list-style-type: none"> <li>notice that animals, including humans, have offspring which grow into adults</li> <li>Animals grow until they reach maturity and then do not grow larger</li> <li>Be introduced to the processes of reproduction and growth in animals</li> </ul>	<p><b>Forces</b></p> <p><b>Non Statutory</b></p> <ul style="list-style-type: none"> <li>Pushing and pulling can make things move faster or slower</li> <li>Pushing and pulling can make things move or stop</li> <li>Things can move in different ways</li> <li>Larger masses take bigger pushes and pulls to move or stop them</li> <li>Bigger pushes and pulls have different effects</li> </ul> <p><b>Living things and their habitats</b></p> <p>Explore and compare the differences between things that are living, dead and things that have never been alive</p> <p>Describe how animals obtain their food from plants and other</p>	<p><b>Uses of everyday materials</b></p> <ul style="list-style-type: none"> <li>find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.</li> <li>Pushing and pulling can change the shape of things</li> </ul> <p>Identify &amp; compare the suitability of everyday materials including wood, metal, plastic etc for particular purposes.</p> <p><b>Study of Charles Macintosh</b></p>	<p><b>Living Things and their Habitats – around the world</b></p> <ul style="list-style-type: none"> <li>identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other</li> <li>identify and name a variety of plants and animals in their habitats, including micro-habitats</li> <li>Animals need a variety of food to help them grow, repair their bodies, be active and stay healthy.</li> <li>Explore &amp; compare the differences between things that are living, dead &amp; things that have never been alive.</li> </ul>

				animals, using the idea of a simple food chain, and identify and name different sources of food		
--	--	--	--	---	--	--

<p>3</p>	<p><b><u>Skeletons and muscles</u></b></p> <ul style="list-style-type: none"> <li>• identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat</li> <li>• identify that humans and some other animals have skeletons and muscles for support, protection and movement</li> </ul>	<p><b><u>Light</u></b></p> <ul style="list-style-type: none"> <li>• recognise that they need light in order to see things and that dark is the absence of light</li> <li>• notice that light is reflected from surfaces</li> <li>• recognise that light from the sun can be dangerous and that there are ways to protect their eyes</li> <li>• recognise that shadows are formed when the light from a light source is blocked by an opaque object</li> <li>• find patterns in the way that the size of shadows change</li> </ul>	<p><b><u>Forces and Magnets</u></b></p> <ul style="list-style-type: none"> <li>• compare how things move on different surfaces</li> <li>• notice that some forces need contact between 2 objects, but magnetic forces can act at a distance</li> <li>• observe how magnets attract or repel each other and attract some materials and not others</li> <li>• compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials</li> <li>• describe magnets as having 2 poles</li> <li>• predict whether 2 magnets will attract or repel each other, depending on which poles are facing</li> </ul>	<p><b><u>Plants</u></b></p> <ul style="list-style-type: none"> <li>• identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers</li> <li>• explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant</li> <li>• investigate the way in which water is transported within plants</li> <li>• explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal</li> </ul>	<p><b><u>Rocks</u></b></p> <ul style="list-style-type: none"> <li>• compare and group together different kinds of rocks on the basis of their appearance and simple physical properties</li> <li>• describe in simple terms how fossils are formed when things that have lived are trapped within rock</li> <li>• recognise that soils are made from rocks and organic matter</li> </ul>
----------	--	---	---	---	--

<p>4</p>	<p><b><u>Digestion</u></b></p> <ul style="list-style-type: none"> <li>describe the simple functions of the basic parts of the digestive system in humans</li> <li>identify the different types of teeth in humans and their simple functions</li> <li>construct and interpret a variety of food chains, identifying producers, predators and prey</li> </ul>	<p><b><u>Electricity</u></b></p> <ul style="list-style-type: none"> <li>identify common appliances that run on electricity</li> <li>construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers</li> <li>identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery</li> <li>recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit</li> <li>recognise some common conductors and</li> </ul>	<p><b><u>States of matter</u></b></p> <ul style="list-style-type: none"> <li>compare and group materials together, according to whether they are solids, liquids or gases</li> <li>observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C)</li> <li>identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature</li> </ul>	<p><b><u>Sound</u></b></p> <ul style="list-style-type: none"> <li>identify how sounds are made, associating some of them with something vibrating</li> <li>recognise that vibrations from sounds travel through a medium to the ear</li> <li>find patterns between the pitch of a sound and features of the object that produced it</li> <li>find patterns between the volume of a sound and the strength of the vibrations that produced it</li> <li>recognise that sounds get fainter as the distance from the sound</li> </ul>	<p><b><u>Living things and their environment</u></b></p> <ul style="list-style-type: none"> <li>recognise that living things can be grouped in a variety of ways explore and use classification keys to help group,</li> <li>identify and name a variety of living things in their local and wider environment</li> <li>recognise that environments can change and that this can sometimes pose dangers to living things</li> </ul>
----------	--	--	--	---	---

		<p>insulators, and associate metals with being good conductors</p> <p>Study of Thomas Edison</p>		<p>source increases</p>	
--	--	--	--	-----------------------------	--

<p>5</p>	<p><b><u>Living things &amp; Habitats.</u></b></p> <ul style="list-style-type: none"> <li>Animals can be grouped into vertebrates (and then further into fish, reptiles, amphibians, birds and mammals) and invertebrates</li> <li>Some examples of life cycles (including those of plants and humans)</li> <li>The processes of dispersal, fertilisation and germination • Reproduction is one of the seven life processes.</li> <li>Parts of a plant, their features and what their functions are.</li> <li>The work of David Attenborough.</li> <li>The word metamorphic means ‘a change of form’ (in the context of rocks)</li> </ul>	<p><b><u>properties of materials</u></b></p> <p>Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal) and response to magnets.</p> <p>Give reasons, based on evidence from comparative fair tests, for the particular uses of everyday materials, including metals, wood and plastic.</p>	<p><b><u>Changes of materials</u></b></p> <p>Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution.</p> <p>Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating.</p> <p>Demonstrate that dissolving, mixing and changes of state are reversible changes.</p> <ul style="list-style-type: none"> <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</li> </ul>	<p><b><u>friction and forces</u></b></p> <p>Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.</p> <p>Identify the effects of air resistance, water resistance and friction, that act between moving surfaces.</p> <p>Recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect.</p>	<p><b><u>Earth and Space</u></b></p> <p>Describe the movement of the Earth and other planets relative to the sun in the solar system.</p> <p>Describe the movement of the moon relative to the Earth.</p> <p>Describe the sun, Earth and moon as approximately spherical bodies.</p> <p>Use the idea of the Earth’s rotation to explain day and night and the apparent movement of the sun across the sky.</p> <p><b>Study of Sir Isaac Newton</b></p>	<p><b><u>Animals including humans</u></b></p> <p>Describe the changes as humans develop to old age.</p> <p><b>Pupils should draw a time line to indicate stages in the growth &amp; development of humans. They should learn about the changes experienced in puberty.</b></p>
----------	---	---	---	--	--	--

<p>6</p>	<p><b><u>Light</u></b></p> <ul style="list-style-type: none"> <li>• understand that light appears to travel in straight lines</li> <li>• use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye</li> <li>• use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them, and to predict the size of shadows when the position of the light source changes.</li> <li>• Light reflects off all objects (unless they are black). Non-shiny surfaces scatter the light so we do not see a single beam.</li> <li>•</li> </ul>	<p><b><u>Evolution and inheritance</u></b></p> <ul style="list-style-type: none"> <li>• identify how plants and animals, including humans, resemble their parents in many features</li> <li>• recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago</li> <li>• different types of organisms have different life cycles</li> <li>• Life cycles have evolved to help organisms survive to adulthood</li> <li>• Different animals mature and live different ages</li> <li>• Identify how animals and plants are adapted to suit their environment in different</li> </ul>	<p><b><u>Electricity</u></b></p> <ul style="list-style-type: none"> <li>• identify common appliances that run on electricity</li> <li>• construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers</li> <li>• identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery</li> <li>• recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit</li> <li>• recognise some common conductors and insulators,</li> </ul>	<p><b><u>Animals including humans – blood and transportation</u></b></p> <ul style="list-style-type: none"> <li>• identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood</li> <li>• recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function</li> <li>• describe the ways in which nutrients and water are transported within animals, including humans</li> <li>•</li> </ul>	<p><b><u>Animals including humans – The Heart and Health</u></b></p> <ul style="list-style-type: none"> <li>• recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function</li> <li>• describe the ways in which nutrients and water are transported within animals, including humans</li> <li>• identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood</li> <li>•</li> </ul>	<p><b><u>Living things and their Habitats</u></b></p> <ul style="list-style-type: none"> <li>• Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals.</li> <li>• Give reasons for classifying plants and animals based on specific characteristics.</li> </ul> <p>Study of Carl Linnaeus</p>
----------	--	--	--	---	---	---

ways and that adaptations may lead to evolution.

Study of Mary Anning

and associate metals with being good conductors