

## Spring Meadow Science 2022/2023

	<b>Nursery</b>		
	<b>Working Scientifically (Skills needed to be a scientist)</b>	<b>Curriculum Links</b>	<b>Key End Points</b>
<b>Autumn</b>  <b>Topic A – All about me</b>  <b>Topic B – Journeys</b>	Identifying and classifying  Observing closely	C&L: Use a wider range of vocabulary  C&L: Use longer sentences of four to six words.	<ul style="list-style-type: none"> <li>• Use all their senses in hands-on exploration of natural materials</li> <li>• Explore collections of materials with similar and/or different properties</li> </ul>
<b>Spring</b>  <b>Topic A – Dinosaurs</b>  <b>Topic B – Growing and Changing</b>	Observing closely  Asking simple questions	C&L: Builds up vocabulary to reflect knowledge  C&L: Asks relevant questions  PSED: Select and use activities and resources, with help when needed	<ul style="list-style-type: none"> <li>• Begins to use simple science vocabulary (e.g naming dinosaurs)               <ul style="list-style-type: none"> <li>• To explore scientific artefacts (Stones with fossils)</li> </ul> </li> <li>• To use simple language to describe how a plant might grow.               <ul style="list-style-type: none"> <li>• To observe a plant growing</li> </ul> </li> <li>• To make simple observations of the world around them (e.g. Plants outside are growing)               <ul style="list-style-type: none"> <li>• To know that animals have babies</li> </ul> </li> </ul>
<b>Summer</b>  <b>Topic A – Animals and their babies</b>  <b>Topic B – Heroes and Adventurers</b>	Identifying and classifying  Asking simple questions  Performing simple tests	Maths: Make comparisons between objects relating to size, length, weight and capacity	<ul style="list-style-type: none"> <li>• To know we have to look after the environment (throwing rubbish in the bin).               <ul style="list-style-type: none"> <li>• To know ice melts and changes into water.</li> <li>• To explore objects that sink and float.</li> </ul> </li> </ul>

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	<b>Reception</b>		
	<b>Working Scientifically</b> (Skills needed to be a scientist)	<b>Curriculum Links</b>	<b>Key End Points</b> (Blue end points – ELG)
<b>Autumn</b>  <b>Topic A – All about me</b>  <b>Topic B – Transport: Past and Present</b>	Observing closely  Identifying and classifying  Asking simple questions  Performing simple tests	C&L: Use new vocabulary through the day  C&L: Ask questions to find out more and to check they understand what has been said to them.	<ul style="list-style-type: none"> <li>• To know some parts of the human body</li> <li>• To know we can see, smell, touch, taste and hear</li> <li>• To be able to identify features of autumn</li> <li>• To be able to identify features of Winter <i>(May continue into Spring 1)</i></li> <li>• Ask questions using what, where, when and why to find out information</li> </ul>
<b>Spring</b>  <b>Topic A – Space</b>  <b>Topic B – Growing and Changing</b>	Observing closely  Identifying and classifying  Asking simple questions	C&L: Articulate their ideas and thoughts in well-formed sentences.  C&L: Use new vocabulary in different contexts.  C&L: Engage in non-fiction books.	<ul style="list-style-type: none"> <li>• To know that people change as they grow</li> <li>• To know that animals change as they grow</li> <li>• To be able to identify and draw animals and babies</li> <li>• To be able to identify features of summer</li> <li>• Build up vocabulary that reflects knowledge and experience e.g., children can talk about space, what they know about it</li> <li>• Begin to understand how and why questions in a science context 'e.g. how does a plant grow'.</li> </ul>
<b>Summer</b>  <b>Topic A – Kings and Queens</b>  <b>Topic B – Stories from the past</b>	Observing closely  Identifying and classifying  Asking simple questions	PD: Develop their small motor skills so that they can use a range of tools competently, safely and confidently  Maths: Compare length, weight and capacity	<ul style="list-style-type: none"> <li>• To be able to identify features of summer</li> <li>• <b>Explore the natural world around them, making observations and drawing pictures of animals and plants</b></li> <li>• <b>Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class</b></li> <li>• <b>Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.</b></li> </ul>

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	<b>Year 1</b>		
	<b>Working Scientifically</b> (Skills needed to be a scientist)	<b>Common Misconceptions</b>	<b>Key End Points</b> (Knowledge)
<b>Autumn 1 – The Human Body: Senses</b>	<p>Observing closely, using simple equipment</p> <p>Performing simple tests</p> <p>Identifying and classifying</p>	<p>That a person is blind without their glasses</p> <p>Only hands have the sense of touch</p> <p>That people cannot be partially blind or deaf</p> <p>That sight and sound are the only senses you can lose</p>	<ul style="list-style-type: none"> <li>• To know our body has five senses.</li> <li>• To know that we use our eyes to see.</li> <li>• To know that sounds travel through our ears to send messages to our brain.</li> <li>• To know that our senses help us to understand the world around us.</li> <li>• To understand that some people have problems with their senses, such as blindness or deafness.</li> </ul>
<b>Autumn 2 – Animals and their needs</b>	<p>Identifying and classifying</p> <p>Using their observations and ideas to suggest answers to questions</p>	<p>Animals are furry and have four legs.</p> <p>Lizards and snakes are amphibians.</p> <p>Whales and dolphins are fish as they live in the sea.</p>	<ul style="list-style-type: none"> <li>• To name and describe common animals</li> <li>• To know scientists group animals according to their features.</li> <li>• To understand that we can group animals according to what they eat.                             <ul style="list-style-type: none"> <li>• To describe the needs of a pet.</li> <li>• To describe an animal using scientific words.</li> </ul> </li> </ul>
<b>Spring 1 – Seasons and Weather</b>	<p>Asking simple questions and recognising that they can be answered in different ways</p> <p>Observing closely, using simple equipment</p> <p>Using their observations and ideas to suggest answers to questions</p>	<p>It only snows in winter It is always sunny in summer.</p> <p>It rains most in winter.</p> <p>Flowers are only seen in spring and summer.</p> <p>Clouds always lead to rain. Dark clouds always lead to rain.</p> <p>Weather forecasts are 100% accurate</p>	<ul style="list-style-type: none"> <li>• To name and describe the four seasons</li> <li>• To know that tools are used to gather information about the weather.                             <ul style="list-style-type: none"> <li>• To present data using a graph.</li> <li>• To know there are different types of cloud.</li> </ul> </li> <li>• To understand that weather forecasts help people to prepare for different kinds of weather.</li> <li>• To understand that certain types of weather can be dangerous.</li> </ul>

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	Gathering and recording data to help in answering questions		
<b>Spring 2 – Taking Care of the earth</b>	Identifying and classifying	<p>Air pollution is always visible. We can make coal as fast as it is being used.</p> <p>Trees are a manufactured resource because humans plant them. Logging has no positive benefits. Once rubbish is buried, it no longer causes any issues.</p>	<ul style="list-style-type: none"> <li>• To describe different ways that we damage the Earth.</li> <li>• To know that there are natural and manufactured resources that people on Earth use.</li> <li>• To identify logging as a way of harvesting the Earth’s natural resources.</li> <li>• To know that people create pollution which can harm the environment.</li> <li>• To know that recycling means turning used things into something new.</li> </ul>
<b>Summer 1 – Plants</b>	<p>Asking simple questions and recognising that they can be answered in different ways</p> <p>Observing closely, using simple equipment</p> <p>Performing simple tests</p> <p>Using their observations and ideas to suggest answers to questions</p> <p>Gathering and recording data to help in answering questions</p>	<p>Seeds are not alive.</p> <p>All plants start out as seeds</p> <p>Plants are only flowering plants with colourful petals</p> <p>Seeds need sunlight to germinate</p> <p>All leaves are green</p> <p>A trunk is not a stem</p> <p>All stems are green</p>	<ul style="list-style-type: none"> <li>• To know what plants, need in order to grow.</li> <li>• To name and describe the parts of a plant.</li> <li>• To understand that plants spread their seeds to make new plants.</li> <li>• To understand that some trees are evergreen, and some are deciduous</li> <li>• To recognise which parts of plants we eat.</li> </ul>
<b>Summer 2 – Materials and Magnets</b>	<p>Asking simple questions and recognising that they can be answered in different ways</p> <p>Identifying and classifying</p>	<p>Only fabrics are materials</p> <p>The word ‘rock’ describes an object rather than a material</p> <p>‘Solid’ is another word for hard.</p>	<ul style="list-style-type: none"> <li>• To recognise everyday materials.</li> <li>• To identify the properties of materials.</li> <li>• To explain why materials are chosen for specific tasks</li> <li>• To understand that materials can be sorted according to whether they are or are not attracted to magnets.</li> <li>• To investigate which material would be most suitable for (TBD).</li> </ul>

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	Gathering and recording data to help in answering questions	A material is something used for building, clothing or stationery.  Confusing absorbent with waterproof (e.g. paper towel soaking up water)	
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## Spring Meadow Science 2022/2023

	Year 2		
	<b>Working Scientifically</b> (Skills needed to be a scientist)	<b>Common Misconceptions</b>	<b>Key End Points</b>
<b>Autumn 1 – The Human Body</b>	Asking simple questions and recognising that they can be answered in different ways	All animals are furry and have four legs. The heart is at the left side of the body. The stomach is located behind the navel. We only eat food for energy. All germs are harmful. Air tubes connect to the heart.	<ul style="list-style-type: none"> <li>• Animals, including humans, need air, food and water to survive.</li> <li>• To know that our skeleton and our muscles help us to move.                             <ul style="list-style-type: none"> <li>• To understand that our bodies digest our food.</li> <li>• To know that our heart pumps blood around our body</li> </ul> </li> <li>• To understand that scientists have found ways to keep us healthy.</li> </ul>
<b>Autumn 2 – Living Things and their Environments</b>	Asking simple questions and recognising that they can be answered in different ways	Fire is alive because it moves, grows and reproduces.  Plants and seeds are not alive as they do not seem to move.  Arrows in a food chain mean ‘eats’ (rather than ‘is eaten by’). The death in one part of a food chain has no effect on the rest of the food chain.  Wild animals always have food available to them.  The living thing at the top of the food chain is a predator of	<ul style="list-style-type: none"> <li>• To know the differences between living, dead and never been alive.</li> <li>• To know that a habitat is the name given to a place where plants or animals live.</li> <li>• To describe rainforests are hot and moist, and deserts as dry and hot or cold. To know that each habitat has plants and animals adapted to survive.</li> <li>• To name and describe animals who live in underground habitats.                             <ul style="list-style-type: none"> <li>• To know that a food chain describes ‘who eats what’ within a habitat</li> </ul> </li> </ul>

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		<p>all other living things in the food chain.</p> <p>Animals in soil (e.g. worms, beetles) breathe by coming to the surface.</p>	
<b>Spring 1 – Electricity</b>	Identifying and classifying	<p>Batteries have electricity inside them.</p> <p>Electricity flows out of both ends of a battery.</p> <p>Electricity works by coming out of one end of a battery (unipolar model).</p>	<ul style="list-style-type: none"> <li>• To identify things that use electricity.</li> <li>• To know that electricity is useful, but it can also be dangerous.             <ul style="list-style-type: none"> <li>• To construct an electrical circuit</li> </ul> </li> <li>• To identify materials that conduct electricity.</li> </ul>
<b>Spring 2 - Plants</b>	<p>Asking simple questions and recognising that they can be answered in different ways</p> <p>Observing closely, using simple equipment</p> <p>Performing simple tests</p> <p>Using their observations and ideas to suggest answers to questions</p> <p>Gathering and recording data to help in answering questions</p>	<p>Seeds are not alive</p> <p>All plants start out as seeds</p> <p>Seeds and bulbs need sunlight to germinate</p>	<ul style="list-style-type: none"> <li>• To know there are many different kinds of plants.             <ul style="list-style-type: none"> <li>• Seeds and bulbs grow into mature plants.</li> <li>• Healthy plants need light and water to grow.</li> </ul> </li> <li>• To understand that plants are grown for food.</li> </ul>

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<p><b>Summer 1 – Materials and Matter</b></p>	<p>Observing closely, using simple equipment</p> <p>Performing simple tests</p> <p>Using their observations and ideas to suggest answers to questions</p> <p>Gathering and recording data to help in answering questions</p>	<p>A materials is only used for building, clothing or stationery.</p> <p>The word rock is an object rather than a material.</p> <p>Solid is another word for hard.</p> <p>Solids made of small pieces that can be poured are liquids.</p>	<ul style="list-style-type: none"> <li>• To know that materials have specific uses based on their properties.</li> <li>• To know that inventors think carefully about materials and their properties.</li> <li>• To know that scientists use microscopes to see very small things around us.</li> <li>• To know that the shapes of solid objects made from some materials can be changed</li> <li>• To understand that water can be a solid and can also be a liquid.</li> </ul>
<p><b>Summer 2 – Astronomy</b></p>	<p>Asking simple questions and recognising that they can be answered in different ways</p> <p>Observing closely, using simple equipment</p> <p>Performing simple tests</p> <p>Identifying and classifying</p> <p>Using their observations and ideas to suggest answers to questions</p> <p>Gathering and recording data to help in answering questions</p>	<p>Earth is at the centre of the solar system and other planets orbit it.</p> <p>The Sun, Moon and Earth are a similar size.</p> <p>Pluto is a planet.</p> <p>The Sun is a planet</p> <p>Earth is flat</p> <p>The Sun orbits the Earth and that’s how we get night and day.</p> <p>The Sun simply rises upwards in the morning and then goes downwards in the evening</p> <p>The Sun moves across the sky during the day</p>	<ul style="list-style-type: none"> <li>• To know there are eight planets in our solar system.             <ul style="list-style-type: none"> <li>• To know that Earth travels around the sun.</li> <li>• To know that the moon orbits the earth.</li> <li>• To know that groups of stars are called constellations.</li> </ul> </li> <li>• Scientists, including astronomers, learn from each other to make new discoveries about space.</li> </ul>

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		<p>Night is caused by the Moon getting in the way of the Sun</p> <p>The Earth's shadow is responsible for the phases of the Moon</p> <p>The Moon only appears at night.</p>	
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## Spring Meadow Science 2022/2023

Working Scientifically:

Working Scientifically KS1	Year 1							Year 2				
	Human Body	Animals and their Needs	Seasons and Weather	Taking Care of the Earth	Plants	Materials and Magnets	The Human Body	Living Things and their Environments	Electricity	Plants	Materials and Matter	Astronomy
<b>Statutory</b>												
asking simple questions and recognising that they can be answered in different ways			✓		✓	✓	✓	✓		✓		✓
observing closely, using simple equipment	✓		✓		✓					✓	✓	✓
performing simple tests	✓				✓					✓	✓	✓
identifying and classifying	✓	✓		✓		✓			✓			✓
using their observations and ideas to suggest answers to questions		✓	✓		✓					✓	✓	✓
gathering and recording data to help in answering questions			✓		✓	✓				✓	✓	✓
<b>Notes and guidance</b>												
use simple features to compare objects, materials and living things and, with help, decide how to sort and group them, observe changes over time, and, with guidance, they should begin to notice patterns and relationships		✓			✓	✓						✓
ask people questions and use simple secondary sources to find answers	✓			✓			✓		✓			
use simple measurements and equipment (for example, hand lenses, egg timers) to gather data, carry out simple tests, record simple data, and talk about what they have found out and how they found it out			✓		✓					✓	✓	✓
record and communicate their findings in a range of ways and begin to use simple scientific language (with help)		✓	✓	✓	✓	✓	✓		✓	✓	✓	✓

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