

## Science Themes, Domains and Dimensions KS1

Year	Theme	Domain	Scientific Dimensions			
		Biology Chemistry Physics	<b>Scientific knowledge</b> -conceptual understanding through the specific disciplines of biology, chemistry and physics	<b>Scientific enquiry</b> -understanding of the nature, processes and methods of science through different types of science enquiries	<b>Scientific application</b> understand the uses and implications of science, today and for the future.	Links to other knowledge and ideas
		Biology	<b>Plants</b> Identify and name a range of common plants, including garden plants, wild plants and trees, and those classified as deciduous and evergreen Identify and describe the basic structure of a variety of common flowering plants, including roots, stem/trunk, leaves and flowers Observe and describe how seeds and bulbs grow into mature plants Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy  <b>Animal, including humans</b> Identify and name a variety of common animals that are birds, fish, amphibians, reptiles, mammals and invertebrates Identify and name a variety of common animals that are carnivores, herbivores and omnivores Describe and compare the structure of a variety of common animals (birds, fish, amphibians, reptiles, mammals and invertebrates, and including pets) Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with which sense Notice that animals, including humans, have offspring which grow into adults	<i>Children should be helped to develop their understanding of scientific ideas by using different types of scientific enquiry to answer questions, including:</i> <ul style="list-style-type: none"> <li>• <i>observing changes over a period of time,</i></li> <li>• <i>noticing patterns,</i></li> <li>• <i>grouping and classifying things,</i></li> <li>• <i>carrying out simple comparative tests</i></li> <li>• <i>finding things out using secondary sources of information.</i></li> <li>• asking simple questions and recognising that they can be answered in different ways</li> <li>• observing closely,</li> <li>• using simple equipment,</li> <li>• performing simple tests</li> <li>• identifying and classifying gathering and recording data to help in answering questions</li> </ul>		

			<p>Find out about and describe the basic needs of animals, including humans, for survival (water, food and air)</p> <p>Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene</p> <p><b>Living things and their habitats</b></p> <p>Explore and compare the difference between things that are living, dead, and things that have never been alive</p> <p>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 of each other</p> <p>Identify and name a variety of plants and animals in their habitats, including micro-habitats</p> <p>Describe how animals obtain their food from plants and other animals, using the ideas of a simple food chain, and name and identify different sources of food</p>	<ul style="list-style-type: none"> <li>• using their observations and ideas to suggest answers to questions</li> </ul>		
		Chemistry	<p><b>Everyday Materials and their Uses</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>Describe the simple properties of a variety of everyday materials</p> <p>Compare and group together a variety of everyday materials on the basis of their simple physical properties</p> <p>Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching</p>			

			Identify and compare the uses of a variety of everyday materials, including wood, metal, plastic, glass, brick/rock, and paper/cardboard Compare how things move on different surfaces			
		Physics	<b>Overarching theme – seasonal change</b> Observe changes across the four seasons Observe and describe weather associated with the seasons and how day length varies			
<b>Interpretation</b>						
<b>Year 1</b>						
<b>1a</b> <b>All</b>	<b>Key Knowledge:</b> The composition of the Earth and its atmosphere and the processes	Physics	<b>Seasonal change</b> <b>E&amp;S1.1</b> Observe changes across the four seasons <b>E&amp;S 1.2</b> Observe and describe weather associated with the seasons and how day length varies	<b>Children should be helped to develop their understanding of scientific ideas by using different types of scientific enquiry to answer questions, including:</b> <ul style="list-style-type: none"> <li>observing changes over a period of time,</li> <li>noticing patterns,</li> </ul>	Research the farming year to show how the seasons effect plants and animals on a farm  Record the weather each day and	Links to: Maths time, date years etc Geography the tilt of the earth (introduction of the idea)

	<p>occurring within them shape the Earth's surface and its climate</p> <p><b>Key Skills:</b> <i>Observing changes over a period of time, noticing patterns,</i></p>			<ul style="list-style-type: none"> <li>• finding things out using secondary sources of information.</li> <li>• asking simple questions and recognising that they can be answered in different ways</li> <li>• observing closely</li> <li>• using simple equipment,</li> <li>• identifying and classifying gathering and recording data to help in answering questions</li> <li>• using their observations and ideas to suggest answers to questions</li> </ul>	summarise the weather for each week	
<b>1b Autumn</b>	<p><b>Key Knowledge:</b></p> <p>All material in the universe is made of very small particles.</p> <p><b>Key Skills:</b> Observing closely, identifying, grouping and classifying, performing simple tests</p>	Chemistry	<p>Everyday Materials</p> <p>EM1.1 Distinguish between an object and the material from which it is made</p> <p>EM1.2 Identify and name a variety of everyday materials, including wood, plastic, glass, metal water and rock</p> <p>EM1.3 Describe the simple properties of a variety of everyday materials</p> <p>EM1.4 Compare and group together a variety of everyday materials on the basis of their simple physical properties</p> <p>EM1.5 Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching</p>	<p>Children should be helped to develop their understanding of scientific ideas by using different types of scientific enquiry to answer questions, including:</p> <ul style="list-style-type: none"> <li>• observing changes over a period of time,</li> <li>• noticing patterns,</li> <li>• identifying, grouping and classifying things,</li> <li>• carrying out simple comparative tests</li> <li>• finding things out using secondary sources of information.</li> <li>• asking simple questions and recognising that they can be answered in different ways</li> <li>• observing closely,</li> <li>• using simple equipment,</li> <li>• performing simple tests</li> <li>• gathering and recording data to help in answering questions</li> </ul>	<p>Research which materials can be recycled or decay naturally and which do not</p> <p>Sort and measure the materials wasted in the classroom each day and record over a week to see how we could reduce waste or ensure things are recycled</p>	<p>Links to:</p> <p>I can save the earth – reduce, reuse, recycle</p> <p>DT choosing materials for the task</p>

				<ul style="list-style-type: none"> <li>using their observations and ideas to suggest answers to questions</li> </ul>		
<b>1c</b> <b>Spring</b>	<p><b>Key Knowledge:</b></p> <p>Organisms are organised on a cellular basis Organisms require a supply of energy and materials for which they are often dependent on or in competition with other organisms</p> <p><b>Key Skills:</b> <i>identifying, grouping and classifying things</i></p>	Biology	<p><b>Animal, including humans</b></p> <p><b>AH1.1</b> Identify and name a variety of common animals that are birds, fish, amphibians, reptiles, mammals and invertebrates</p> <p><b>AH1.2</b> Identify and name a variety of common animals that are carnivores, herbivores and omnivores</p> <p><b>AH1.3</b> Describe and compare the structure of a variety of common animals (birds, fish, amphibians, reptiles, mammals and invertebrates, and including pets)</p> <p><b>AH1.4</b> Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with which sense</p>	<p><b>Children should be helped to develop their understanding of scientific ideas by using different types of scientific enquiry to answer questions, including:</b></p> <ul style="list-style-type: none"> <li>observing changes over a period of time,</li> <li>noticing patterns,</li> <li>identifying, grouping and classifying things</li> <li>finding things out using secondary sources of information.</li> <li>asking simple questions and recognising that they can be answered in different ways</li> <li>observing closely,</li> <li>identifying and classifying gathering and recording data to help in answering questions</li> <li>using their observations and ideas to suggest answers to questions</li> </ul>	Research and create a guide for caring for a pet to include, diet, exercise, home/bedding based on their characteristics	PSHE caring for a living creature

<p><b>1d</b> Summer</p>	<p><b>Key Knowledge:</b> Organisms are organised on a cellular basis</p> <p><b>Key Skills:</b> Observing closely and identifying similarities and differences Observing change over time</p>	<p>Biology</p>	<p><b>Plants</b> <b>PL1.1</b> Identify and name a range of common plants, including garden plants, wild plants and trees, and those classified as deciduous and evergreen <b>PL1.2</b> Identify and describe the basic structure of a variety of common flowering plants, including roots, stem/trunk, leaves and flowers</p>	<p><i>Children should be helped to develop their understanding of scientific ideas by using different types of scientific enquiry to answer questions, including:</i></p> <ul style="list-style-type: none"> <li>• <i>observing changes over a period of time,</i></li> <li>• <i>noticing patterns,</i></li> <li>• <i>grouping and classifying things,</i></li> <li>• <i>carrying out simple comparative tests</i></li> <li>• <i>finding things out using secondary sources of information.</i></li> <li>• asking simple questions and recognising that they can be answered in different ways observing closely,</li> <li>• using simple equipment,</li> <li>• performing simple tests</li> <li>• identifying and classifying gathering and recording data to help in answering questions</li> <li>• using their observations and ideas to suggest answers to questions</li> </ul>	<p>Sort and classify different fruits and vegetables according to the part of the plant that is edible</p> <p>Survey a woodland area to identify different types of trees</p>	<p>PSHE where our food comes from</p>
<p><b>2a</b> Autumn</p>	<p><b>Key Knowledge:</b> All material in the universe is made of very small particles</p> <p><b>Key Skills:</b> Identifying, grouping and</p>	<p>Chemistry</p>	<p><b>Uses of Everyday Materials</b> <b>EM2.1</b> Identify and compare the uses of a variety of everyday materials, including wood, metal, plastic, glass, brick/rock, and paper/cardboard <b>EM2.2</b> Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching (Y1) <b>EM2.3</b> Compare how things move on different surfaces</p>	<p><i>Children should be helped to develop their understanding of scientific ideas by using different types of scientific enquiry to answer questions, including:</i></p> <ul style="list-style-type: none"> <li>• <i>observing changes over a period of time,</i></li> <li>• <i>noticing patterns,</i></li> <li>• <i>identifying, grouping and classifying things</i></li> </ul>	<p>Research the materials are clothes are made of by looking at care labels Use knowledge of materials used for clothing to design a school uniform that is hard wearing,</p>	<p>Geography – where materials come from</p>

	<p>classifying things</p> <p>Carrying out simple comparative tests</p>			<ul style="list-style-type: none"> <li>• carrying out simple comparative tests</li> <li>• finding things out using secondary sources of information.</li> <li>• asking simple questions and recognising that they can be answered in different ways</li> <li>• observing closely,</li> <li>• using simple equipment,</li> <li>• performing simple tests</li> <li>• identifying and classifying gathering and recording data to help in answering questions</li> <li>• using their observations and ideas to suggest answers to questions</li> </ul>	comfortable and looks smart	
<p><b>2b</b></p> <p><b>Autumn</b></p>	<p><b>Key Knowledge:</b></p> <p>Organisms require a supply of energy and materials for which they are often dependent on or in competition with other organisms</p> <p><b>Key Skills:</b></p> <p>Finding things out using secondary sources of information</p> <p>Asking simple questions and recognising that they can be answered in different ways</p>	Biology	<p><b>Animals, including humans</b></p> <p><b>AH2.1</b> Notice that animals, including humans, have offspring which grow into adults</p> <p><b>AH2.2.</b> Find out about and describe the basic needs of animals, including humans, for survival (water, food and air)</p> <p><b>AH2.3</b> Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene</p>	<p><b>Children should be helped to develop their understanding of scientific ideas by using different types of scientific enquiry to answer questions, including:</b></p> <ul style="list-style-type: none"> <li>• observing changes over a period of time,</li> <li>• noticing patterns,</li> <li>• grouping and classifying things,</li> <li>• finding things out using secondary sources of information.</li> <li>• asking simple questions and recognising that they can be answered in different ways</li> <li>• observing closely,</li> <li>• identifying and classifying</li> <li>• gathering and recording data to help in answering questions</li> <li>• using their observations and ideas to suggest answers to questions</li> </ul>	Create a guide to healthy living for pupils at priory School	PSHE healthy living

<p><b>2c</b> <b>Spring</b></p>	<p><b>Key Knowledge:</b></p> <p>Organisms require a supply of energy and materials for which they are often dependent on or in competition with other organisms Big Idea 9: Genetic information is passed from one generation of organisms to another</p> <p><b>Key Skills:</b></p> <p>Observing changes over a period of time Carrying out simple comparative tests</p>	<p>Biology</p>	<p><b>Plants</b></p> <p><b>P2.1</b> Observe and describe how seeds and bulbs grow into mature plants <b>P2.2</b> Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy</p>	<p><b>Children should be helped to develop their understanding of scientific ideas by using different types of scientific enquiry to answer questions, including:</b></p> <ul style="list-style-type: none"> <li>• observing changes over a period of time,</li> <li>• noticing patterns,</li> <li>• identifying, grouping and classifying things</li> <li>• carrying out simple comparative tests</li> <li>• finding things out using secondary sources of information.</li> <li>• asking simple questions and recognising that they can be answered in different ways</li> <li>• observing closely,</li> <li>• using simple equipment,</li> <li>• performing simple tests</li> <li>• identifying and classifying gathering and recording data to help in answering questions</li> <li>• using their observations and ideas to suggest answers to questions</li> </ul>	<p>Plant a range of different seeds to observe how they grow and develop over time Create a plant calendar to show the life cycle of a plant through the year</p>	
<p><a href="https://www.stem.org.uk/system/files/community-resources/2016/04/OS1A007%20-%20Identifying%20Bulbs%20And%20Seeds.pdf">https://www.stem.org.uk/system/files/community-resources/2016/04/OS1A007%20-%20Identifying%20Bulbs%20And%20Seeds.pdf</a></p>						
<p><b>2e</b> <b>Summer</b></p>	<p><b>Key Knowledge:</b></p> <p>Organisms require a supply of energy and</p>	<p>Biology</p>	<p><b>Living things and their habitats</b></p> <p><b>T2.1</b> Explore and compare the difference between things that are living, dead, and things that have never been alive</p>	<p><b>Children should be helped to develop their understanding of scientific ideas by using different types of scientific enquiry to answer questions, including:</b></p>	<p>Create a simple food chain for creatures that live in our local area</p>	<p>PSHE respect for the environment</p>



	<p>materials for which they are often dependent on or in competition with other organisms</p> <p><b>Key Skills:</b> Identifying, grouping and classifying things Finding things out using secondary sources of information. Asking simple questions and recognising that they can be answered in different ways</p>		<p><b>ALT2.2</b> 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 of each other</p> <p><b>ALT2.3</b> Identify and name a variety of plants and animals in their habitats, including micro-habitats</p> <p><b>ALT2.4</b> Describe how animals obtain their food from plants and other animals, using the ideas of a simple food chain, and name and identify different sources of food</p>	<ul style="list-style-type: none"> <li>• observing changes over a period of time,</li> <li>• noticing patterns,</li> <li>• identifying, grouping and classifying things</li> <li>• carrying out simple comparative tests</li> <li>• finding things out using secondary sources of information.</li> <li>• asking simple questions and recognising that they can be answered in different ways</li> <li>• observing closely,</li> <li>• using simple equipment,</li> <li>• performing simple tests</li> <li>• identifying and classifying gathering and recording data to help in answering questions</li> <li>• using their observations and ideas to suggest answers to questions</li> </ul>	<p>Create a guide for people visiting Burnham Beeches of how to behave so as not to damage the habitat of the things that live there</p>	