

## Science Long Term Plan

Cycle A 22/23	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
EYFS	Seasons	Seasons Pumpkins Day/night Nocturnal/diurnal	Seasons Ice experiments	Seasons Daffodils in classes Chicks	Seasons Butterflies life cycle Bean planting Insects	Seasons World environment day
Y1	<p><b>Everyday Materials</b> (Everyday materials Yr1)</p> <ul style="list-style-type: none"> <li>distinguish between an object and the material from which it is made</li> <li>identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock</li> <li>describe the simple physical properties of a variety of everyday materials</li> <li>compare and group together a variety of everyday materials on the basis of their simple physical properties</li> </ul>	<p><b>Human Senses</b> (Animals inc. humans Yr1)</p> <ul style="list-style-type: none"> <li>identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense</li> </ul>	<p><b>Seasonal Changes</b> (Seasonal changes Yr1)</p> <ul style="list-style-type: none"> <li>observe changes across the 4 seasons</li> <li>observe and describe weather associated with the seasons and how day length varies</li> </ul> <p><b>(Plants Yr1)</b></p> <ul style="list-style-type: none"> <li>identify and name a variety of common wild and garden plants, including deciduous and evergreen trees</li> </ul>	<p><b>Plant Parts</b> (Plants Yr1)</p> <ul style="list-style-type: none"> <li>identify and name a variety of common wild and garden plants, including deciduous and evergreen trees</li> <li>identify and describe the basic structure of a variety of common flowering plants, including trees</li> </ul>	<p><b>Animal Parts</b> (Animals inc. humans Yr1)</p> <ul style="list-style-type: none"> <li>describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets)</li> <li>identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals</li> <li>identify and name a variety of common animals that are carnivores, herbivores and omnivores.</li> </ul>	
Y2	<p><b>Human Survival</b> (Animals inc. Humans Yr2)</p> <ul style="list-style-type: none"> <li>notice that animals, including humans, have offspring which grow into adults</li> </ul>	<p><b>Habitats</b> (Living things and their habitats Yr2)</p> <ul style="list-style-type: none"> <li>explore and compare the differences between things that are living, dead, and</li> </ul>	<p><b>Uses of Materials</b> (Uses of everyday materials Yr2)</p> <ul style="list-style-type: none"> <li>identify and compare the suitability of a variety of everyday</li> </ul>	<p><b>Plant Survival</b> (Living things and their habitats Yr2)</p> <ul style="list-style-type: none"> <li>identify that most living things live in habitats to which</li> </ul>	<p><b>Animal Survival</b> (Living things and their habitats Yr2)</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</li> </ul>	

<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> <li>• describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene</li> </ul>	<p>things that have never been alive</p> <ul style="list-style-type: none"> <li>• identify and name a variety of plants and animals in their habitats, including microhabitats</li> <li>• describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food</li> <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> </ul>	<p>materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses</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> </ul>	<p>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</p> <ul style="list-style-type: none"> <li>• identify and name a variety of plants and animals in their habitats, including microhabitats</li> </ul> <p><b>(Plants Yr2)</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> </ul>	<p>how they depend on each other</p> <ul style="list-style-type: none"> <li>• identify and name a variety of plants and animals in their habitats, including microhabitats</li> <li>• describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food.</li> </ul> <p><b>(Animals including humans Yr2)</b></p> <ul style="list-style-type: none"> <li>• notice that animals, including humans, have offspring which grow into adults</li> <li>• find out about and describe the basic needs of animals, including humans, for survival (water, food and air)</li> </ul> <p><b>(Uses of everyday materials (Yr2))</b></p> <ul style="list-style-type: none"> <li>• identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses</li> </ul>
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**NOTE: Objectives in blue are revisited in different topics/different context**

<p>LKS2</p>	<p><b>Animal Nutrition and the Skeletal System (Animals, including Humans Yr3)</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>Forces and Magnets (Forces and magnets Yr3)</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> </ul>	<p><b>Plant Nutrition and Reproduction (Plants Yr3)</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</li> </ul>	<p><b>Light and Shadows (Light Yr3)</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</li> </ul>
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**NOTE: ROCKS from the national curriculum is taught through the Geography project in year 3: Rocks, relics and rumbles**

- compare and group together different kinds of rocks on the basis of their appearance and simple physical properties
- describe in simple terms how fossils are formed when things that have lived are trapped within rock
- recognise that soils are made from rocks and organic matter.

UKS2	<p><b>Forces and Mechanisms (Forces Yr5)</b></p> <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>	<p><b>Earth and Space (Earth and space Yr5)</b></p> <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>	<p><b>Human Reproduction and Ageing (Animals inc humans Yr5)</b></p> <ul style="list-style-type: none"> <li>● Describe the changes as humans develop to old age.</li> </ul> <p><b>(Living things and their habitats Yr5)</b></p> <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> </ul>	<p><b>Properties and Changes of Materials (Properties and changes of materials Yr5)</b></p> <ul style="list-style-type: none"> <li>● 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</li> <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,</li> </ul>
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				<p>wood and plastic</p> <ul style="list-style-type: none"> <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>
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Cycle B 2023/2024	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
EYFS	Seasons	Seasons Pumpkins Day/night Nocturnal/diurnal	Seasons Ice experiments	Seasons Daffodils in classes Chicks	Seasons Butterflies life cycle Bean planting Insects	Seasons World environment day
Year 1	<p><b>Everyday Materials</b> (Everyday materials Yr1)</p> <ul style="list-style-type: none"> <li>● distinguish between an object and the material from which it is made</li> <li>● identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock</li> <li>● describe the simple physical properties of a variety of everyday materials</li> <li>● compare and group together a variety of everyday materials on the basis of their simple physical properties</li> </ul>	<p><b>Human Senses</b> (Animals inc. humans Yr1)</p> <ul style="list-style-type: none"> <li>● identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals</li> <li>● identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense</li> </ul>	<p><b>Seasonal Changes</b> (Seasonal changes Yr1)</p> <ul style="list-style-type: none"> <li>● observe changes across the 4 seasons</li> <li>● observe and describe weather associated with the seasons and how day length varies</li> </ul> <p><b>(Plants Yr1)</b></p> <ul style="list-style-type: none"> <li>● identify and name a variety of common wild and garden plants, including deciduous and evergreen trees</li> </ul>	<p><b>Plant Parts</b> (Plants Yr1)</p> <ul style="list-style-type: none"> <li>● identify and name a variety of common wild and garden plants, including deciduous and evergreen trees</li> <li>● identify and describe the basic structure of a variety of common flowering plants, including trees</li> </ul>	<p><b>Animal Parts</b> (Animals inc. humans Yr1)</p> <ul style="list-style-type: none"> <li>● describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets)</li> <li>● identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals</li> <li>● identify and name a variety of common animals that are carnivores, herbivores and omnivores.</li> </ul>	

Year 2	<p><b>Human Survival</b> (Animals inc. Humans Yr2)</p> <ul style="list-style-type: none"> <li>notice that animals, including humans, have offspring which grow into adults</li> <li>find out about and describe the basic needs of animals, including humans, for survival (water, food and air)</li> <li>describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene</li> </ul>	<p><b>Habitats</b> (Living things and their habitats Yr2)</p> <ul style="list-style-type: none"> <li>explore and compare the differences between things that are living, dead, and things that have never been alive</li> <li>identify and name a variety of plants and animals in their habitats, including microhabitats</li> <li>describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food</li> <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> </ul>	<p><b>Uses of Materials</b> (Uses of everyday materials Yr2)</p> <ul style="list-style-type: none"> <li>identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses</li> <li>find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.</li> </ul>	<p><b>Plant Survival</b> (Living things and their habitats Yr2)</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 microhabitats</li> </ul> <p><b>(Plants Yr2)</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> </ul>	<p><b>Animal Survival</b> (Living things and their habitats Yr2)</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 microhabitats</li> <li>describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food.</li> </ul> <p><b>(Animals including humans Yr2)</b></p> <ul style="list-style-type: none"> <li>notice that animals, including humans, have offspring which grow into adults</li> <li>find out about and describe the basic needs of animals, including humans, for survival (water, food and air)</li> </ul> <p><b>(Uses of everyday materials (Yr2)</b></p> <ul style="list-style-type: none"> <li>identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses</li> </ul>
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**NOTE: Objectives in blue are revisited in different topics/different context**

LKS2	<p><b>Food and the Digestive System</b> (Animals, including humans (Yr4)</p>	<p><b>Sound</b> (Sound Yr4)</p> <ul style="list-style-type: none"> <li>identify how sounds are made, associating</li> </ul>	<p><b>States of Matter</b> (States of matter Yr4)</p> <ul style="list-style-type: none"> <li>compare and group materials together,</li> </ul>	<p><b>Grouping and Classifying</b> (Living things and their habitats Yr4)</p>	<p><b>Electrical Circuits and Conductors</b> (Electricity Yr4)</p> <ul style="list-style-type: none"> <li>identify common appliances that run on electricity</li> </ul>
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	<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>some of them with something vibrating</p> <ul style="list-style-type: none"> <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 source increases.</li> </ul>	<p>according to whether they are solids, liquids or gases</p> <ul style="list-style-type: none"> <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> </ul> <p><b>Note: The following objective is taught in the Geography topic misty mountain, winding river.</b></p> <ul style="list-style-type: none"> <li>identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.</li> </ul>	<ul style="list-style-type: none"> <li>recognise that living things can be grouped in a variety of ways</li> <li>explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment</li> </ul> <p><b>Note: The following objective is taught in the Geography topic misty mountain, winding river.</b></p> <ul style="list-style-type: none"> <li>recognise that environments can change and that this can sometimes pose dangers to living things.</li> </ul>	<ul style="list-style-type: none"> <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, and associate metals with being good conductors</li> </ul>
UKS2	<p><b>Circulatory System (Animals including humans Yr6)</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> </ul>	<p><b>Electrical Circuits and Components (Electricity Yr6)</b></p> <ul style="list-style-type: none"> <li>associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit</li> <li>compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches</li> <li>use recognised symbols when representing a simple circuit in a diagram.</li> </ul>	<p><b>Light Theory (Light Yr6)</b></p> <ul style="list-style-type: none"> <li>recognise 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>explain that we see</li> </ul>	<p><b>(Living things and their habitats Yr6)</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</li> </ul>	

			<p>things because light travels from light sources to our eyes or from light sources to objects and then to our eyes</p> <ul style="list-style-type: none"><li>● use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.</li></ul>	<p>classifying plants and animals based on specific characteristics.</p> <p><b>Evolution and inheritance (Yr6)</b></p> <ul style="list-style-type: none"><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>● recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents</li><li>● identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.</li></ul>
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