

# Science Curriculum Map - National Curriculum objectives mapped and updated Sept 24

## EYFS - Knowledge and understanding of the world

<b>Nursery Autumn</b>	<b>Nursery Spring</b>	<b>Nursery Summer</b>
<p>Children use their senses to explore the natural world and demonstrate interest in the natural environment: They begin to describe what they see, smell, hear, feel, during nature walks and gardening activities in the outdoor environment and at forest school. They investigate and experiment the changing states of mud, sand, water, paint and bubbles.</p> <p>Children show care, concern and they understand the need to respect and care for the natural environment and living things. They help to look after plants and wildlife - take part in adult - led activities making bird feeders, and create safe spaces for minibeasts and other living creatures outside.</p>	<p>Children develop an understanding of growth and decay: They explore changes that take place through a variety of themes -E.g 'When I was a baby' 'Why we brush our teeth'. and 'Healthy eating'. Children are taught how to make use of the compost bin- 'What happens to our apple cores in the compost bin?' They plant seeds and bulbs and manipulate objects and materials to identify similarities and differences.</p> <p>Children carry out simple experiments to develop an understanding of growth/decay and effects of this in different conditions. e.g bread - mouldy, cress growth in light/dark.</p> <p>Children are using newly learnt language to discuss their findings and ideas (petal, stem, pollen, magnetic, pupa, chrysalis, )</p> <p>Children know how to plant seeds and will continuously care for them to help the plants grow. Children begin to make predictions about what may happen as the seasons change/ as plants grow.</p>	<p>Children make observations of animals and plants. They know about similarities and differences in relation to objects, materials and living things. They can begin to explain why some things occur and talk about changes. Children explore life cycles of birds and minibeasts, caterpillars, dragonflies and frogs. They describe, identify and observe animals in their natural environment and observe changes over time through planting and harvesting.</p> <p>Children look closely at similarities, differences and patterns in nature. They can communicate what they see, make predictions and talk about these changes with increasing confidence. E.g Investigating changes that occur to leaves/plants/food throughout different seasons and explore patterns in animals shells, plants and flowers. They know that changes occur during the process of cooking a variety of foods.</p> <p>Children begin to understand the effect their behaviour can have on the environment. They learn how to dispose of litter appropriately and respect plants, minibeasts and animals' natural habitats to ensure they are able to thrive.</p>
<b>Reception Autumn</b>	<b>Reception Spring</b>	<b>Reception Summer</b>
<p>Children make observations of animals and plants. They know about similarities and differences in relation to objects, materials and living things. They can explain why some things occur, and talk about changes. Children explore life cycles of birds and minibeasts, caterpillars, dragonflies and frogs. They describe, identify and observe animals in their natural environment and observe changes over time through planting and harvesting.</p> <p>Children look closely at similarities, differences and patterns in nature. They can communicate what they see, make predictions and talk about these changes</p>	<p><b>Seasons</b></p> <p>Children know the vocabulary of the four seasons and can comment on the changes in the local environment such as changes to plant and animal growth and what happens to water when it freezes outside- winter. Children have awareness of key words/ vocabulary associated with science such as habitat, explore, investigate, predict and observe.</p> <p>Children can name a range of equipment (magnifying glass, incubator, binoculars, telescope, funnel, syringe, trowel, fork, gloves, measuring jug, trowel, rake, watering can)</p>	<p>Children explore the natural world around them, making observations and drawing/painting pictures and creating 3d models and representations of animals and plants.</p> <p>Children can talk about some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class (life cycles: frogs/butterflies, deserts, wetland, forests, jungles, arctic)</p> <p>Children can talk about the features of living things and the natural environment. They can explain why some things occur during important processes and changes in</p>

<p>with increasing confidence. E.g Investigating changes that occur to leaves/plants/food throughout different seasons and explore patterns in animals shells, plants and flowers. They know that changes occur during the process of cooking a variety of foods.</p> <p>Children begin to understand the effect their behaviour can have on the environment. They learn how to dispose of litter appropriately and respect plants, minibeast and animals' natural habitats to ensure they are able to thrive.</p>	<p><b>Materials</b> Children explore and know about some natural processes and changes that happen (reversible and irreversible changes such as melting ice, toasting bread, baking, melting chocolate) While engaging in simple experiments, they make predictions about the similarities and differences of materials before and after processes.</p>	<p>the natural world around them- , including the seasons and changing states of matter (melting &amp; freezing). They carry out simple experiments both adult led- and child - initiated to understand and discover - through exploring concepts such as 'floating and sinking'</p>
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**KS1**

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
<p><b>Every day Materials</b></p> <p>Y1 distinguish between an object and the material from which it is made Y1 identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock Y1 describe the simple physical properties of a variety of everyday materials Y1 compare and group together a variety of everyday materials on the basis of their simple physical properties</p> <p><b>Y2 Living things in their habitats</b> Y2 explore and compare the differences between things that are living,</p>	<p>Seasonal Changes both Y1/2 <b>Autumn</b> Y1 observe changes across the 4 seasons Y1 observe and describe weather associated with the seasons and how day length varies Y2 observe plants, trees &amp; animals in local area (feeding/food chains, offspring, identify &amp; name plants/animals)</p> <p><b>Humans</b> Y1 identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense</p>	<p><b>Y1 Animals</b> Y1 describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets)</p> <p><b>Y2 everyday Materials</b> Y2 identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses</p> <p>Seasonal Changes both Y1/2 <b>Winter</b> Y1 observe changes across the 4 seasons</p>	<p><b>Y1 Animals (continued)</b> Y1 identify and name a variety of common animals that are carnivores, herbivores and omnivores</p> <p>Y2 find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching</p>	<p>Seasonal Changes both Y1/2 <b>Spring time</b> Y1 observe changes across the 4 seasons Y1 observe and describe weather associated with the seasons and how day length varies Y2 observe plants, trees &amp; animals in local area (feeding/food chains, offspring, identify &amp; name plants/animals)</p> <p><b>Plants</b> Y1 identify and name a variety of common wild and garden plants, including deciduous and evergreen trees Y2 observe and describe how seeds and bulbs grow into mature plants</p>	<p><b>Plants continued</b> Y1 identify and describe the <b>basic structure</b> of a variety of common flowering plants, including trees Y2 Living things in their habitats Y2 identify and name a variety of plants and animals in their habitats, including microhabitats Y2 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</p> <p>Seasonal Changes both Y1/2 <b>Summer</b></p>

<p>dead, and things that have never been alive</p> <p>Y2 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</p>	<p>Y2 notice that animals, including humans, have offspring which grow into adults</p> <p>Y2 find out about and describe the basic needs of animals, including humans, for survival (water, food and air)</p> <p>Y2 describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene</p>	<p>Y1 observe and describe weather associated with the seasons and how day length varies</p> <p>Y2 observe plants, trees &amp; animals in local area (feeding/food chains, offspring, identify &amp; name plants/animals)</p> <p>2 Weeks</p>		<p>Y2 find out and describe how plants need water, light and a suitable temperature to grow and stay healthy</p>	<p><b>2 weeks (in total)</b></p> <p>Y1 observe changes across the 4 seasons</p> <p>Y1 observe and describe weather associated with the seasons and how day length varies</p> <p>Y2 observe plants, trees &amp; animals in local area (feeding/food chains, offspring, identify &amp; name plants/animals)</p>
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## LKS2

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
<p><b>Humans and animals -</b></p> <p>Y3 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</p> <p>Y3 Identify that humans and some other animals have skeletons and muscles for support, protection and movement</p> <p>Y4 Describe the simple functions of the basic parts of the digestive system in humans</p>	<p><b>materials</b></p> <p><b>Rocks</b></p> <p>Y3 compare and group together different kinds of rocks on the basis of their appearance and simple physical properties</p> <p>Y3 describe in simple terms how fossils are formed when things that have lived are trapped within rock</p> <p>Y3 recognise that soils are made from rocks and organic matter</p> <p><b>States of matter</b></p>	<p><b>forces (on land) and magnets</b></p> <p>Y3 compare how things move on different surfaces</p> <p>Y3 notice that some forces need contact between 2 objects, but magnetic forces can act at a distance</p> <p>Y3 observe how magnets attract or repel each other and attract some materials and not others</p> <p>Y3 compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and</p>	<p><b>Light &amp; sound</b></p> <p>Y3 recognise that they need light in order to see things and that dark is the absence of light</p> <p>Y3 notice that light is reflected from surfaces</p> <p>Y3 recognise that light from the sun can be dangerous and that there are ways to protect their eyes</p> <p>Y3 recognise that shadows are formed when the light from a light source is</p>	<p><b>Life processes &amp; plants</b></p> <p>Y3 identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers</p> <p>Y3 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</p> <p>Y3 investigate the way in which water is transported within plants</p>	<p><b>Electricity last 3 weeks of summer term</b></p> <p>Y3 An introduction to Y4 electricity (refer to Y4 NC materials)</p> <p>Y4 identify common appliances that run on electricity</p> <p>Y4 construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers</p> <p>Y4 identify whether or not a lamp will light in a simple series circuit, based</p>

<p>Y4 Identify the different types of teeth in humans and their simple functions</p>	<p>Y4 compare and group materials together, according to whether they are solids, liquids or gases</p> <p>Y4 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)</p> <p>Y4 identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature</p>	<p>identify some magnetic materials</p> <p>Y3 describe magnets as having 2 poles</p> <p>Y3 predict whether 2 magnets will attract or repel each other, depending on which poles are facing</p> <p>Y4 (continue investigative work on forces from Y3 looking at vehicles on land 'compare how things move on different surfaces'</p> <p>Revision of magnets from Y3</p> <p>(NB there is no official NC for forces in Y4)</p>	<p>blocked by an opaque object</p> <p>Y3 find patterns in the way that the size of shadows change</p> <p><b>Sound</b></p> <p>Y4 identify how sounds are made, associating some of them with something vibrating</p> <p>Y4 recognise that vibrations from sounds travel through a medium to the ear</p> <p>Y4 find patterns between the pitch of a sound and features of the object that produced it</p> <p>Y4 find patterns between the volume of a sound and the strength of the vibrations that produced it</p> <p>Y4 recognise that sounds get fainter as the distance from the sound source increases</p>	<p>Y3 explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal</p> <p><b>Living things in their habitats</b></p> <p>Y4 recognise that living things can be grouped in a variety of ways</p> <p>Y4 explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment</p> <p>Y4 recognise that environments can change and that this can sometimes pose dangers to living things</p> <p><b>Animals</b></p> <p>Y4 construct and interpret a variety of food chains, identifying producers, predators and prey</p> <p>(continue into first 3 weeks after half term)</p>	<p>on whether or not the lamp is part of a complete loop with a battery</p> <p>Y4 recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit</p> <p>Y4 recognise some common conductors and insulators, and associate metals with being good conductors</p>
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**UKS2**

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
<p><b>Changing Materials</b> Y5 know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution Y5 use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating Y5 demonstrate that dissolving, mixing and changes of state are reversible changes Y5 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</p> <p><b>Classification</b> Y6 describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals  Y6 give reasons for classifying plants and</p>	<p><b>Forces in air</b> Y5 explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object Y5 identify the effects of air resistance, water resistance and friction, that act between moving surfaces Y5 recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect</p> <p><b>Forces In water</b> Y5 identify the effects of air resistance, water resistance and friction, that act between moving surfaces</p> <p><b>Light</b> Y6 recognise that light appears to travel in straight lines Y6 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</p>	<p><b>Earth in Space</b> Y5 describe the movement of the Earth and other planets relative to the sun in the solar system Y5 describe the movement of the moon relative to the Earth Y5 describe the sun, Earth and moon as approximately spherical bodies Y5 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>Evolution and inheritance</b> Y6 recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago Y6 recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents Y6 identify how animals and plants are adapted to suit their environment in different ways and that</p>	<p><b>Materials, their properties and Sustainability</b> Y5 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 Y5 give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic</p> <p><b>Electricity</b> Y6 associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit Y6 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 Y6 use recognised symbols when representing a simple circuit in a diagram</p>	<p><b>Animals - Life Cycles and Reproduction</b> Y5 describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird Y5 describe the life process of reproduction in some plants and animals</p> <p><b>Animals including humans</b> Y6 identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood Y6 recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function</p>	<p><b>Humans</b> Y5 describe the changes as humans develop to old age</p> <p><b>Humans</b> Y6 describe the ways in which nutrients and water are transported within animals, including humans</p>

animals based on specific characteristics	Y6 explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes	adaptation may lead to evolution			
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