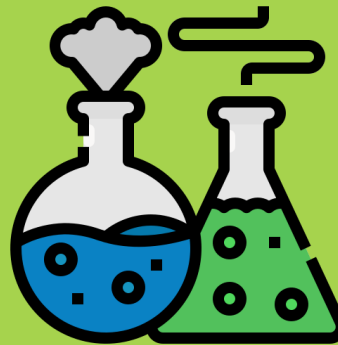


Science

Long Term Plans



Upper
Wharfedale
Primary
Federation



Science Long term Overview

EYFS

Science at the Foundation Stage is covered in the 'Understanding the world', 'Personal, Social and Emotional Development' and 'Communication and Language' areas of the EYFS Curriculum. It is introduced through enhanced provision, adult led activities, and spontaneous play. The children are encouraged to explore, observe, predict, problem solve and talk about the world around them.

Using these experiences staff will support the children's understanding and their knowledge by exploring the change in seasons, people, plants, creatures, trees and objects found in their natural environments.

Through enhanced provision, planned activities or in the moment observations, children will be encouraged to ask questions about how things work or why things change. An example of children's questioning

"Why does my big ball not go faster than the little ball down my ramp?"

"Do all the leaves come off every tree in the wood?"

Children will be asked questions what they think will happen and then supported to predict, plan, investigate, record and evaluate their findings.

The children will use their senses to explore their world, from listening to sounds 'alarms, sirens, animals or birds' to feeling different textures of natural objects.

Enriching and widening children's understanding and exposure to specific vocabulary will later support reading comprehension

We will capture the children's learning using Tapestry, individual investigation books, photographs and our spontaneous learning sheet.

The most relevant statements for science are taken from the following areas of learning:

- [Communication and Language](#)
- [Personal, Social and Emotional Development](#)
- [Understanding the World](#)

Pre School	Reception	ELG
<p>Outcomes</p> <p>Pre-School C&L</p> <ul style="list-style-type: none"> • Understand 'why' questions, like: "Why do you think the caterpillar got so fat?" 	<p>Communication and Language C&L</p> <ul style="list-style-type: none"> • Learn new vocabulary. • Ask questions to find out more and to check what has been said to them. • Articulate their ideas and thoughts in well-formed sentences. • Describe events in some detail. • Use talk to help work out problems and organise thinking and activities, and to explain how things work and why they might happen. • Use new vocabulary in different contexts 	<p>C&L Listening, Attention and Understanding</p> <ul style="list-style-type: none"> • Make comments about what they have heard and ask questions to clarify their understanding.
<p>Pre-school PSED</p> <ul style="list-style-type: none"> • Make healthy choices about food, drink, activity and tooth brushing. 	<p>Reception</p> <p>Personal, Social and Emotional Development</p> <p>PSED</p> <ul style="list-style-type: none"> • Know and talk about the different factors that support their overall health and wellbeing: <ul style="list-style-type: none"> - regular physical activity - healthy eating 	<p>PSED Managing Self</p> <p>Manage their own basic hygiene and personal needs, including dressing, going to the toilet and understanding the importance of healthy food choices.</p>

	<ul style="list-style-type: none"> - tooth brushing - sensible amounts of ‘screen time’ - having a good sleep routine - being a safe pedestrian 	
<p>Pre-School UTW</p> <ul style="list-style-type: none"> • Use all their senses in hands-on exploration of natural materials. • Explore collections of materials with similar and/or different properties. • Talk about what they see, using a wide vocabulary. • Begin to make sense of their own life-story and family’s history. • Explore how things work. • Plant seeds and care for growing plants. • Understand the key features of the life cycle of a plant and an animal. • Begin to understand the need to respect and care for the natural environment and all living things. • Explore and talk about different forces they can feel • Talk about the differences between materials and changes they notice. 	<p>Reception</p> <p>Understanding the World</p> <p>Explore the natural world around them.</p> <ul style="list-style-type: none"> • Describe what they see, hear and feel while they are outside. • Recognise some environments that are different to the one in which they live. • Understand the effect of changing seasons on the natural world around them. 	<p>UTW The Natural World</p> <p>Explore the natural world around them, making observations and drawing pictures of animals and plants.</p> <ul style="list-style-type: none"> • 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. • Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.

KS1 – Two Year Cycle					
Cycle	Autumn 1 and Autumn 2		Spring	Summer 1 and Summer 2	
A 2024-25	Living things and their habitats – animal focus	Everyday Materials	Animals including humans – parts of the human body	Plants	Working scientifically – Let’s investigate!
	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 how they depend on each other. (Y2) Identify and name animals in their habitats, including microhabitats (Y2) Describe how animals obtain their food from plants (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. (Y2) Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching (Y2)	Find out about and describe the basic needs of animals, including humans, for survival (water, food and air) (Y2) Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene(Y2)	Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees identify and describe the basic structure of a variety of common flowering plants, including trees	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 2025-26	Living things and their habitats	Everyday Materials	Animals including humans – parts of the human body	Plants	Working scientifically - Let’s investigate!
	Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals (Y1)	Distinguish between an object and the	Notice that animals, including humans, have offspring which grow into adult (Y2)	Observe and describe how seeds and bulbs grow into mature plants Find out and describe how plants need water, light and a suitable temperature	Asking simple questions and recognising that they can be answered in different ways Observing closely, using simple equipment

	<p>Identify and name a variety of common animals that are carnivores, herbivores and omnivores (Y1)</p> <p>Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals) (Y1)</p> <p>Explore and compare the differences between things that are living and dead (Y2)</p>	<p>material from which it is made (Y1)</p> <p>Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock (y1)</p> <p>Describe the simple physical properties of a variety of everyday materials (Y1)</p> <p>Compare and group together a variety of everyday materials on the basis of their simple physical properties (Y1)</p>	<p>Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense (Y1)</p>	<p>to grow and stay healthy.</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>
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Cycle	Autumn	Spring	Summer
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Key Stage Two - 4 year Cycle

<p>A</p> <p>2024-25</p>	<p>Living things in their habitats</p> <p>Recognise that living things can be grouped in a variety of ways.</p> <p>Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment.</p> <p>Recognise that environments can change and that this can sometimes pose dangers to living things.</p>	<p>Rocks</p> <p>Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties.</p> <p>Describe in simple terms how fossils are formed when things that have lived are trapped within rock.</p> <p>Recognise that soils are made from rocks and organic matter.</p>	<p>Animals including humans</p> <p>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>identify that humans and some other animals have skeletons and muscles for support, protection and movement</p> <p>describe the simple functions of the basic parts of the digestive system in humans</p> <p>identify the different types of teeth in humans and their simple functions</p> <p>Construct and interpret a variety of food chains, identifying producers, predators and prey.</p>	<p>States of matter</p> <p>compare and group materials together, according to whether they are solids, liquids or gases</p> <p>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>identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature</p>
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<p>B</p> <p>2025-26</p>	<p>Light</p> <p>Recognise that they need light in order to see things and that dark is the absence of light</p> <p>notice that light is reflected from surfaces</p> <p>recognise that light from the sun can be dangerous and that there are ways to protect their eyes</p> <p>recognise that shadows are formed when the light from a light source is blocked by an</p>	<p>Earth and space</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>Electricity</p> <ul style="list-style-type: none"> •Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit. •Compare and give reasons for variations in how component's function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches. •Use recognised symbols when representing a simple circuit in a diagram. 	<p>Forces</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>Plants</p> <p>Describe the life process of reproduction in some plants.</p> <p>internal structure of a flower, process of fertilisation linked to internal structures.</p> <p>Identify how plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.</p>
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	opaque object find patterns in the way that the size of shadows change				Identifying differences and adaptations to aid pollination and fertilisation – linked to species survival. Describe how living things (plants) are classified into broad groups according to common observable characteristics and based on similarities and differences. Give reasons for classifying plants on specific characteristics. .
C 2026-27	<u>Living things and their habitats</u> Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. Describe the life process of reproduction in some animals. Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro- organisms, and animals. Give reasons for classifying animals based on specific characteristics.	<u>Evolution & Inheritance</u> Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago. Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.	<u>Animals including humans</u> Children can describe the changes as humans develop to old age Children can identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood Children can recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function Children can describe the ways in which nutrients and water are transported within animals, including humans.		<u>Materials changes of state</u> Know that some materials will dissolve in liquid to form a solution and describe how to recover a substance from a solution. Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating. Demonstrate that dissolving, mixing and changes of state are reversible changes. 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. 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 give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic.
D 2027-28	<u>Light</u> Recognise that light appears to travel in straight lines 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 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 use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them	<u>Sound</u> Identify how sounds are made, associating some of them with something vibrating. Recognise that vibrations from sounds travel through a medium to the ear. Find patterns between the pitch of a sound and features of the object that produced it Find patterns between the volume of a sound and the strength of the vibrations that produced it. Recognise that sounds get fainter as the distance from the sound source increase.	<u>Electricity</u> Identify common appliances that run on electricity. Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers. 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. Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple	<u>Forces & Magnets</u> Children can compare how things move on different surfaces Children can notice that some forces need contact between two objects, but magnetic forces can act at a distance Children can observe how magnets attract or repel each other and attract some materials and not others describe magnets as having two poles Children can predict whether two magnets will attract or repel each other, depending on which poles are facing.	<u>Plants</u> Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers. 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. Investigate the way in which water is transported within plants.

				Children can 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	
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