

Science Yearly Overview EYFS and KS1

Our curriculum is designed to meet the expectations outlined in the National Curriculum and Early Years foundations stage (EYFS) statutory framework. To support the Early Years development, we use the Birth to 5 matters non-statutory guidance.

Intent "<i>The scientist is not the person who gives the right answers, they are the ones who ask the right questions.</i>" - Claude Levi-Strauss Science is a body of knowledge, encompassing the specific disciplines of biology, physics and chemistry, which is built up through experimental testing of ideas. Science is also a methodology, a practical way of finding reliable answers to questions we may ask about the world around us. We believe that science is inclusive and fosters curiosity in all children. In order to achieve this at Bramley C of E Infant and Nursery we intend to: • encourage and develop a positive attitude to science • develop social skills to enable children to work cooperatively with others • develop knowledge and understanding whilst encouraging the development of key scientific skills. • deliver curriculum objectives through hands on, practical lessons with 'working scientifically' at its core • develop a natural curiosity through opportunities to observe the world around us using the outside environment (including Forest School) and well chosen resources • offer meaningful opportunities to develop understanding of different scientific ideas by using different types of scientific enquiry to answer their own questions. • introduce key vocabulary that is suitable yet challenging for our children and expect all of our children to be able to use the correct vocabulary for each topic, remembering it long after the topic is over. • encourage the children to develop their curiosity by encouraging them to ask questions about what they notice (wonder why?), express their opinions and make links with other areas of learning such as Geography and Maths. • build confident and curious scientists who leave our school ready to take on their next challenge in year 3.
Implementation Staff subject knowledge allows the intentions of our science curriculum to be delivered successfully. We continually strive to build upon the excellent understanding of the expectations of the curriculum that our staff have. We achieve this through regular quality CPD which is provided through the subject leader, external courses and learning walks. All staff are encouraged to raise questions, seek support and request further training if needed in order to ensure everyone is confident in what they teach. Good practice is always shared between staff and all CPD is used to inform teaching and learning across the school. Resources and equipment are audited regularly so that children have materials of high quality and accuracy to support their learning. Each class has access to science resources which are familiar to the children and they can access them independently when needed. Curriculum maps are based on topics using Birth to 5 matters, the Early Learning Framework and the National Curriculum Programmes of Study. To ensure that our offer is rich and varied, resources are hand-picked from other sources. Formative pre and post unit assessments are used where appropriate which help teachers to gather an understanding of their pupil's existing and developing knowledge and skills. Correct scientific vocabulary is used by all staff and this is discussed with and explained to children who are then encouraged to use it independently when talking about science. Vocabulary is taught directly and is referred to in every lesson. Deep learning is developed through repeating, reinforcing and revising key skills and vocabulary. Feedback is given in a variety of ways to ensure pupils are well informed and making visible progress. Task types are varied to suit different pupils and their learning preferences. Tasks are designed to allow pupils to follow lines of enquiry and develop concepts, making predictions and discussing outcomes. Children have opportunities to work both collaboratively and independently. Where appropriate longer studies will be used to support understanding of the world around us, for example looking at seasonal changes for example in Forest School. In EYFS learning in 'Understanding of the World' is planned for each half term and occurs throughout the day by nurturing the children's wonder and curiosity about the world around us. In KS1 science is taught weekly allowing children to develop their knowledge and skills effectively whilst also maintaining knowledge from previous learning. At the beginning of each KS1 science lesson, previous knowledge and vocabulary is rehearsed through games and quick activities. This is also displayed on working walls for the children to access at all times. Children record their learning in their personal science books as well as class books which show aspects of science lessons or units that are not required to be recorded individually such as; pictures of enquiries, mind maps, comments from discussions, etc.
Impact As a result of our teaching at Bramley Infant and Nursery school you will see: Children who are curious and able to explore their environment Children who are able to 'have a go' and apply their learning in different contexts Children who can reason about their understanding making links to prior knowledge Children who have a richer vocabulary which will enable them to articulate their understanding of taught concepts Children who have gained a wider variety of skills linked to both scientific knowledge and understanding, and scientific enquiry skills Children who understand that science has changed our lives. Children who enjoy being 'curious' Children who are prepared for life in an increasingly scientific and technical world Children who foster a concern about and active care for our environment Children who are developing an understanding of the international and collaborative nature of science

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Nursery	Autumn With adult support, to observe objects such as plants, animals, natural and found objects	Light and Dark With encouragement from an adult, can talk about their own immediate family and relations and pets Begin to use everyday materials to explore, understand and represent their world- their ideas, interests and fascinations	Nursery Rhymes Begin to learn they have similarities and differences that connect them to, and distinguish them from, others	New Life Observe objects such as plants, animals, natural and found objects Operates mechanical toys, e.g. turns the knob on a windup toy or pulls back friction car Uses everyday materials to explore, understand and represent their world- their ideas, interests and fascinations	Friends and Family Enjoys playing with small world reconstructions to develop their knowledge Building on first-hand experience, e.g. visiting farms, garages, train tracks, walking by river or lake	Courage Learns that they have similarities and differences that connect them to, and distinguishes them from others Uses everyday materials to explore, understand and represent their world- their ideas, interests and fascinations
	Working Scientifically linked to Birth to 5 Matters - Range 4 Notices detailed features of objects in their environment (UTW-TW) Can talk about some of the things they have observed such as plants, animals, natural and found objects (UTW-TW) Understands who, what, where in simple questions (e.g. Who's that? Who can? What's that? Where is?) C&L-U) Uses a variety of questions (e.g. what, where, who) (C&L-S) Learns that they have similarities and differences that connect them to, and distinguish them from, others (UTW-P&C)					
Pre-School	All About Me Talks about their family, friends and where they live. Name and identify different parts of the body Talks about eye, skin and hair colour and selects appropriate colours. Begins to notice similarities and differences between each other Observes what makes them unique. Creates a self-portrait by looking closely at themselves using mirrors. Observes growth and changes over time by exploring the outside environment. Looks at photographs of themselves as a younger child and observes how they have changed.	Autumn and Celebrations Comments and ask questions about aspects of their familiar world. Observes growth and changes over time by exploring the outside environment. Observes things in the natural world. Explores the school outside area and notices what is happening to the plants and trees. Uses stories and non-fiction books to explore changes in the natural world during Autumn and into Winter.	Winter / Superheroes (Cycle 1) Traditional Tales (Cycle 2) Developing an understanding of growth, decay and changes over time. Observes our school outside area and comments on how aspects of our natural world have changed since last term. Talks about why things happen and how things work. Creates their own Superhero objects using a range of different materials.	Spring / Under the Sea (Cycle 1) People who help us (Cycle 2) Developing an understanding of growth, decay and changes over time. Explores our outside area to look for examples of new life. Uses stories and non-fiction books to explore what happens to our local natural world in the Spring. Talks about why things happen and how things work. Uses stories and non-fiction books to explore sea creatures and the environment that they live in.	The Great Outdoors (Cycle 1) Farms and Farm Animals (Cycle 2) Shows care and concern for living things and the environment by being gentle when picking up living things or observing them. Begins to understand the effect their behaviour can have on the environment. Uses stories and non-fiction books to explore living things and the environment that they live in. Developing an understanding of growth, decay and changes over time.	Amazing Animals (Cycle 1) Minibeasts (Cycle 2) Shows care and concern for living things and the environment by being gentle when picking up living things or observing them. Investigates our environment to explore minibeasts and their natural habitat. Uses child appropriate magnifying glasses to observe closely and talk about what they have seen.
	Working Scientifically linked to Birth to 5 Matters - Range 5 Comments and asks questions about aspects of their familiar world such as the place where they live or the natural world (UTW-TW) Talks about why things happen and how things work (UTW-TW) Beginning to understand why and how questions (C&L-U) Uses talk to explain what is happening and anticipate what might happen next • Questions why things happen and gives explanations. Asks e.g. who, what, when, how (C&L-S) Knows some of the things that make them unique, and can talk about some of the similarities and differences in relation to friends or family (UTWOP&C)					

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	Autumn-seasonal change. Describe immediate environment and talk about what they can see. (which objects, materials and living things they can see) Can look closely and talk about what is the same or different between objects, materials and living things.(including themselves) Begins to record their observations using drawings and photographs. Notices changes over time Knows leaves change colour in autumn and fall Knows that the weather gets colder Knows that some animals hibernate Some animals migrate Knows that plants produce seeds and fruit Can talk about why we celebrate Harvest	Autumn into Winter Can talk about how autumn changes to winter Notices change including colder weather, ice (freezing and melting), lack of leaves on deciduous trees, shorter daylight hours. Light and dark Investigates and compares objects that produce and reflect light. Can talk about which materials that light can pass through. Experiments to see what happens when light is blocked. Begins to explain why some things occur, such as how a shadow is formed. Looks at stories and non-fiction texts learn about nocturnal animals and where different wild animals live e.g. underground or in trees.	Winter Looks closely at what happens to plants and animals in the winter Can talk about how can we look after plants Materials (Link to Literacy-Traditional tales) Identify which common materials items are made from. Understands the properties of familiar materials .. - Wood - Paper - Cloth - Straw Compares suitability of different materials for making a bed, house and bridge linked to the stories of Goldilocks and the Three Bears, The Three Little Pigs and The Three Billy Goats Gruff respectively)	Spring Makes more detailed observations of change in living things as winter turns to spring. Notices new growth and talks about what is needed for growth in plants to occur. To make observations of animals. How they look / move/what they eat To make close observations of the changes in and development of frogspawn (when available) Understands that tadpoles grow into frogs, caterpillars grow into butterflies and babies grow into children and then adults. Draws pictures of animals and plants in order to record what they have learned/observed.	Living things Explain how different living things can be found in different environments and why they are suited to a particular environment. Notice similarities and differences (Link to Geography and Literacy. Building upon learning in the Spring Term about different environments) (minibeasts)	Eats a healthy range of foodstuffs and understands need for variety in food. (Health and self-care Psed link) Describes physical changes to the body that can occur when feeling unwell, anxious, tired, angry or sad. Has established consistent, daily pattern in relation to eating, toileting and sleeping routines and can explain why this is important. (ongoing) Shows understanding that good practises with regard to exercise, eating, drinking water, sleeping and hygiene can contribute to good health.
	Working Scientifically linked to Birth to 5 Matters - The World Range 6 and ELG Looks closely at similarities, differences, patterns and change in nature (UTW-TW) Knows about similarities and differences in relation to places, objects, materials and living things (UTW-TW) Makes observations of animals and plants and explains why some things occur, and talks about changes (UTW-TW) Understands questions such as who; why; when; where and how (C&L-U) Knows about similarities and differences between themselves and others (UTW-P&C) ELG Explore the natural world around them, making observations and drawing pictures of animals and plants (TNW) 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 (TNW) ELG Make comments about what they have heard and ask questions to clarify their understanding (L, A &U)					

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year One	Through direct input teaching: Animals, including humans Names each sense Identifies parts of the body associated with each sense Identifies, names and draws the basic parts of the human body Explores their environment using the senses Identifies and names some common animals Begins to describe and compare the structure of common animals (British Wildlife) Begins to name some animal groups, (mammals, reptiles, birds, fish, amphibians) Identifies and names a variety of common animals that are carnivores, herbivores and omnivores (British Wildlife) Famous person: Fossil Hunter Mary Anning (History link) Seasonal changes (through Forest School and continuous provision) Discusses change of day length Makes observations of deciduous and evergreen trees Makes close observations of autumn leaves Observes and comments on a class enquiry over time using leaves Makes close observations of autumn leaves Observes and comments on a class enquiry over time using leaves Makes observations and describes the weather during an autumn week Outcomes I can talk about my senses and which parts of my body help me to explore around me	Embedding through continuous provision Animals, including humans Names each sense Identifies parts of the body associated with each sense Identifies, names and draws the basic parts of the human body Explores their environment using the senses Identifies and names some common animals Begins to describe and compare the structure of common animals (British Wildlife) Begins to name some animal groups, (mammals, reptiles, birds, fish, amphibians) Identifies and names a variety of common animals that are carnivores, herbivores and omnivores (British Wildlife) Seasonal changes (through Forest School and continuous provision) Discusses change of day length Makes observations of deciduous and evergreen trees Makes close observations of autumn leaves Observes and comments on a class enquiry over time using leaves Leaf observations Makes observations and describes the weather during an autumn week Outcomes - I can sort animals into groups, saying whether they are mammals, birds, reptiles or fish - I can sort animals into groups according to their diet	Through direct input teaching: Everyday materials Identifies and names a variety of everyday materials, including wood, plastic, glass, metal, water, and rock Distinguishes between an object and the material from which it is made Describes the simple physical properties of a variety of everyday materials Compares and groups together a variety of everyday materials on the basis of their simple physical properties Names materials used inside school and in the school grounds Considers suitability of materials linked to their simple physical properties Through continuous provision investigations: Everyday materials Investigates materials by comparing and observing Investigating materials – observing which materials float and sink -observing which materials are absorbent Material hunt – identifying, classifying Seasonal changes (Through direct input teaching and Forest School) Makes observations and describes the weather during a Winter week Begins to link events, months with seasons (to include: deciduous trees, hibernating animals, birthdays, celebrations) Identifies some common winter garden birds (RSPB Big Schools' Birdwatch – citizen science)	Through direct input teaching: Plants Identifies and describes the basic structure of a variety of common flowering plants, including trees Identifies and names parts of a plant Knows that flowering plants produce seeds Considers the needs of a seed to germinate Helps to nurture seedlings and plants Animals, including humans Consider where different animals live (school grounds, woods, ponds) Identifies and names a variety of common animals including fish, amphibians, reptiles, birds and mammals that might be found in and around the school pond Groups animals according to their diet using previous knowledge concerning carnivore, herbivore and omnivore Outcomes - I can name 3 common plants - I can name the common parts of plants - I can tell you about how different animals live in different places - I know that places animals live are called habitats	Through direct input teaching: Plants Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. Uses leaf shape to help identify trees in school grounds Harvests potatoes Animals, including humans Identifies and names a greater variety of common animals, making connections between structure and diet of other known animals Raise and release butterflies. Learns about life cycle, role and structure of butterflies Outcomes - I can sequence the life cycle of a butterfly - I can name and talk about animals that live in particular UK habitats	

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	- I can tell you the names of some common animals and how their body is the same or different to mine - I can make comments about what I see in our outside areas showing what I know about the seasons and weather		Identifies and names a few common birds that are carnivores, herbivores and omnivores Outcomes - I can name some common materials - I can tell you why things might be made from that material - I can make comments about what I see in our outside areas showing what I know about the seasons and weather	Outcomes - I can name some common materials - I can tell you why things might be made from that material - I can group materials by their properties - I can make comments about what I see in our outside areas showing what I know about the seasons and weather		
	Working Scientifically - asking simple questions and recognising that they can be answered in different ways - observing closely, using simple equipment - identifying and classifying - using their observations and ideas to suggest answers to questions - gathering and recording data to help in answering questions.					
Year Two	Uses of everyday materials Identifies and compares the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. Outcomes - I can perform a simple test to answer a scientific question - I can explain the waterproof properties of wax	Uses of everyday materials Identifies and compares the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. Finds out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching Outcomes - I can identify ways to change the properties of a material (heat, squash, bend, twist) - I can design my own simple test to answer a scientific question	Animals, including humans Notifies that animals, including humans, have offspring which grow into adults. Finds out about and describes the basic needs of animals, including humans, for survival (water, food and air). Describes the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. Outcomes - I can name 5 animals and identify their offspring - I can name the 3 basic needs of animals including humans - I can explain why exercise and diet is important for humans	Plants Observes and describe how seeds and bulbs grow into mature plants Finds out and describe how plants need water, light and a suitable temperature to grow and stay healthy Outcomes - I can explain the stages of plant growth from seed/bulb to mature plants - I can identify what a plant needs to grow	Living things and their habitats Explores and compares the differences between things that are living, dead, and things that have never been alive. Identifies 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. Identifies and names a variety of plants and animals in their habitats, including micro – habitats. Describes 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. Outcomes	Living things and their habitats Identifies that most living things live in habitats to which they are suited and describes how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other Describes 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 Outcomes - I can identify things that are living, dead and were never alive - I can compare two different habitats

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
					- I can name things that are living, dead and were never alive - I can explain how one habitat provides the basic needs for an animal - I can explain a simple food chain	
	Working Scientifically - 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.					

Key Vocabulary

Nursery	Working scientifically Look, see, touch Animals, including humans Family, Body, People, friend Living things and their habitats Animal, Outdoors, Indoors, Light, Dark Plants Leaf, Plant, Flower Seasonal change Cold, hot, rain, sun Everyday materials Hard, soft, object
Pre-School	Working scientifically Similar, Different, Change, Animals, including humans Family, Skin, Hair, Eyes, Light, Dark, Brown, Black, Green, Blue, Foot, Leg, Back, Neck, Arms, Head, Living things and their habitats Home, Habitat, Animal, outdoors, forest, farm

	Plants Leaf, Grow, Plant, Flower Seasonal change Hibernation, Autumn, Seasons, Winter, Spring, Summer, Cold, Snow, Ice, Sun Everyday materials Hard, soft, shape
Reception	<u>Working scientifically</u> Similar, Different, Change, look closely, Magnifying glasses <u>Animals, including humans</u> Family, Skin, Hair, Eyes, Light, Dark, Blond, Brown, Green, Blue, Foot, Leg, Hips, Back, Neck, Arms, Head, Common domestic animals (e.g. dog, cat, hamster) common farm animals (e.g. cow, sheep, pig) common zoo animals (lion, tiger giraffe etc) <u>Living things and their habitats</u> Field, Pond, Mountains, hills, waterfalls, lakes, beach <u>Plants</u> Flowers, Petals, Stems, Stalks, Leaves Common fruit (banana, apples, carrots, potatoes etc) <u>Seasonal change</u> Hibernation, Leaf, Autumn, Seasons, Winter Cold, Snow, Ice, conkers Colder Weather words including rainy, windy, snowy, wet, raining, season names Darker, Hibernating frosty, icy misty, foggy <u>Everyday materials</u> Natural, smooth/wrinkled, wood, plastic, metal, paper, hard, bendy, strong, floppy
Year 1	<u>Working scientifically</u> Same, different, group, change, magnify, observe <u>Animals, including humans</u> Names and body parts of common animals (British Wildlife), carnivore, herbivore, omnivore, senses, parts of the human body <u>Living things and their habitats</u> habitat, basic geographical features i.e. field, pond, mountains, hills, waterfalls, lakes. beach <u>Plants</u> Parts of a plant, i.e. flowers, petals, stems, stalks, leaves Names of common British plants and trees, deciduous, evergreen Words connected to growth i.e. shoot, soil, compost, decay, rot, water, sunlight <u>Seasonal change</u> Weather words: i.e. cool, freezing, overcast, grey, drizzle, showers, storm, thunder, lightning, hail, forecast Day length days: i.e. day, night, daylight, morning, afternoon, evening, dawn, dusk, sunrise, sunset <u>Everyday materials</u> Name: material, metal, paper, glass, water, rock, brick, card, fabric
Year 2	<u>Working scientifically</u> observations, classify, group, fair, identify, test, predict, results, conclusion, <u>Animals, including humans</u>

	offspring (animals and their young), amphibians, reptiles, birds, fish, mammals, pets, trunk, horns, antlers, tail, claws, paws, fin, wings, beak, milk, live young, fur, scales, eggs, cold blooded, warm blooded, feathers, carnivore, herbivore, omnivore, meat, flesh, herb, prey, graze life cycle – chrysalis, cocoon, offspring, metamorphosis, energy, gills, lungs, heart rate, pulse, muscle, organ, running, cycling, trampolining, swimming, basketball, tennis, hygiene, disease, nutrition, food groups, carbohydrate, protein, dairy, <u>Living things and their habitats</u> habitat, field, pond, mountains, hills, waterfalls, lakes, beach, life process, living, non-living, dead, never alive, movement, respiration, sensitivity, growth, reproduction, excretion, nutrition, habitat, conditions, survive, woodland, pond, coast, coastal, minibeast, enquiry, survey, pictogram, habitat, research, ocean, tropical rainforest, arctic, desert, adaptation, survive, food chain, consumer, producer, predator, prey, <u>Plants</u> plant, flowers, petals, stems, stalks, leaves, roots, shoot, soil, compost, decay, rot, water, sunlight, grow, growth, flower, petals, seed head, trunk, bark, temperature, warmth, food store, <u>Everyday materials</u> glass, water, rock, brick, card, fabric, texture, properties, soft, transparent, absorbent, waterproof, rigid, elastic, flexible, rough, smooth, shiny, heavy, predict, method, finding, record, squash, bend, twist, stretch, strength, strong, weak, stiff, tear, rip, weight, bar chart, results,
--	--