

SCIENCE Curriculum Progression at Merebrook Infant School

Learning Objectives	EYFS				Year 1				Year 2			
	EYFS Development Matters	Skills	Knowledge	Key Vocabulary	NC Programmes of Study	Skills	Knowledge	Key Vocabulary	NC Programmes of Study	Skills	Knowledge	Key Vocabulary
To work scientifically <ul style="list-style-type: none"> • Observing closely • Using simple tools • Noticing similarities and differences • Testing ideas • Asking questions • Talking about things they observe • Creating simple representation of things 					To work Scientifically <ul style="list-style-type: none"> • Ask simple questions. • Observe closely, using simple equipment. • Perform simple tests. • Identify and classify. • Use observations and ideas to suggest answers to questions. • Gather and record data to help in answering questions. 							
To understand plants	Comments and asks questions about aspects of their familiar world such as the natural world. Can talk about some of the things they have observed such as plants, natural and found objects. Talks about why things happen and how things work. Developing an understanding of growth, decay and changes over time. Shows care and concern for living things (Plants) and the environment Looks closely at similarities, differences, patterns and change	Observing closely using all their senses using magnifying glasses Using tools and equipment carefully Noticing similarities and differences Testing their ideas Having their own ideas Asking questions why things happen Talking about plants. natural and found objects creating simple representati on of objects	Walk in school's grounds and look at trees, flowers, grass and begin to learn names of common veg, fruit, wild and garden flowers. Look for signs of autumn, winter, spring and summer in the nature outside and talk about the changes that they see over the seasons. In autumn some plants die and the leaves fall off and rot. Plant seeds and bulbs and looking after and watch them grow and talk about the changes they observe. Use magnifying glasses to look closely at leaves and draw leaves and compare them. Go litter picking to clean the environment and watering the flowers in the outdoor area.	Trees, leaves, flowers, stem, roots, seeds, conkers, acorns, grow, fruit, Daffodil, roses, grass, buttercup, daisy, strawberry, carrots, tomatoes water, sun, warmth, air	Identify and name a variety 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.	Observing closely , using magnifying glasses, and comparing and contrasting familiar plants; Describing how they were able to identify and group them, and drawing diagrams showing the parts of different plants including trees. Keep records of how plants have changed over time, for example the leaves falling off trees and buds opening; Compare and contrast what they have found out about different plants.	Plants are living things that grows in the earth and has a stem, leaves, and roots A wild plant will grow by itself. It does not need to be cared for. If it grows somewhere unwanted, it may be a weed. weeds are wild plants that grows in garden and prevents the plants that you want from growing properly Deciduous trees lose their leaves in the autumn every year. Evergreen trees have green leaves all year round. Their leaves are generally thick, waxy and narrow like needles. Tree is a tall plant that has a hard trunk, branches, and leaves Different parts of a plant and their functions	Vegetables: (carrots, broccoli, potatoes, peas etc.) Common garden flowers (rose, poppy, sunflower, daffodil, snowdrop, tulips,) Weeds Common wild flowers: (Dandelion, daisy, buttercup,) Common British trees: (oak, elm, maple, horse chestnut, silver birch) Trees Deciduous Evergreen Different parts of a plant (trunk, branches, twigs, leaves, flowers, petals, fruit, stem, roots, seeds, bulbs)	<ul style="list-style-type: none"> • 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. 	Observing and recording , with some accuracy, the growth of a variety of plants as they change over time from a seed or bulb observing similar plants at different stages of growth Setting up a comparative test to show that plants need light and water to stay healthy.	Germination is when Seeds sprout and root and shoot begins to grow. To germinate , seeds need: Warmth, Air (Oxygen) and Water To grow and survive , plants need: Light, Water, warmth, The life cycle of a plant: The plant grows. The flower comes and then dies. A fruit with seeds is left behind. The seeds get scattered. The process begins again.	Seeds Bulbs Germination Root Shoot sprout Light Warmth Air Water Life cycle

<p>To understand animals including humans</p>	<p>Comments and asks questions about the natural world. Can talk about some of the things they have observed such as animals, Developing an understanding of growth, decay and changes over time. Shows care and concern for living things (animals) and the environment Looks closely at similarities, differences, patterns and change Eats a healthy range of foodstuffs and understands need for variety in food. Shows some understanding that good practices with regard to exercise, eating, sleeping and hygiene can contribute to good health.</p>	<p>Observing closely using all their senses using magnifying glasses Using tools and equipment carefully Noticing similarities and differences between animals Testing their ideas Having their own ideas Asking questions why things happen Talking about animals and similarities and differences Sorting nocturnal and diurnal animals Sorting healthy and unhealthy food and explain reasoning Sorting animals based on what they eat (meat, plants or both)</p>	<p>Begin to identify and name variety of common animals that are birds, fish, amphibians, reptiles, mammals and invertebrates and begin to learn the names of body parts. Use binoculars to look closely at local birds. Learn the name of their own body parts and the five senses Nocturnal animal means Being active during night time and some facts about them (hedgehogs, owls, foxes, bats) Diurnal animal means Being active during the day. (humans, cats, cows, dogs) Animals including humans need water, food and air to live. Some animals eat meat, some plants and some both with some examples. Hibernation is The process when an animal sleeps during the winter time. Migration is The seasonal movement of animals/birds from one country to another. Make bird feeder and water feed for birds and keep filling them. Make shelters for animals</p>	<p>Humans, elephants, tigers, lions, snakes, frogs, goldfish, ducks, swans, chicks, butterflies, spiders, caterpillars, owls, foxes, bats, hedgehogs, s, cats, dogs etc. Animals body parts: (horn, trunk, main, tail, hooves, claws, paws, beaks, feathers, wings etc.) Body parts: (Ears, eyes, Nose ,Skin, Mouth, Head, Hair, Eyebrows, , Neck, Shoulders, Tummy, Arms, Hands, Fingers, Back Legs, Knees, Feet, Toes etc.) Senses: Seeing, hearing, feeling, smelling, tasting Nocturnal Diurnal Hibernation Migration Healthy food Fruits (name a few) Vegetables (name a few) Meat (name a few) Pasta, rice, bread water Unhealthy food (name a few) Salt Sugar fat Drink Hygiene Water Soap Germs teeth Toothpaste Toothbrush Exercise</p>	<p>Identify and name a variety of common animals that are birds, fish, amphibians, reptiles, mammals and invertebrates. Describe and compare the structure of a variety of common animals (birds, fish, amphibians, reptiles, mammals and invertebrates, including pets). • Identify and name a variety of common animals that are carnivores, herbivores and omnivores. • 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>Using observations to compare and contrast animals at first hand or through videos and photographs, Describing how they identify and group them; Grouping animals according to what they eat;</p>	<p>Invertebrates are animals that do not have a backbone. They include: insects, arachnids molluscs Vertebrates are animals that have a backbone. There are five groups of vertebrates: mammals, fish, birds, reptiles, amphibians Backbone is the column of small linked bones down the middle of your back Mammals give birth to live young, usually have hair or fur, Fish have fins and scales, breathe underwater using gills, lay eggs in water, Birds have wings and beaks ,have feathers, lay eggs, Reptiles lay eggs, have scales , cannot breathe underwater Amphibians lay eggs, live on land and water - can breathe underwater through gills, carnivores are Animals that only eat meat (other animals) are called Herbivores are Animals that only eat plants Omnivores are Animals that eat plants and meat Humans have five senses. Touch, taste, smell, sight and hearing and the relevant body parts (eyes, ears, nose, mouth, skin)</p>	<p>Invertebrates Backbone Insects: flies, butterflies, ladybirds etc. Arachnids: spiders Molluscs: snails Vertebrates Mammals (humans, cats, whales, sheep, hedgehogs, foxes, lions etc.) Fur Young Give birth Fish (salmon, cod and tuna, gold fish, shark, jellyfish) Fins Scales Gills eggs Birds (ducks, chickens, penguins pigeons, swans, black birds, robins, owls Wings Feathers beaks Reptiles (snakes, lizards) Amphibians (frogs, toads) Carnivores Herbivores Omnivores Senses (vision, hearing, smell, taste, touch) (Eyes Body parts: (Ears, Nose ,Skin, Mouth, Tongue, Head, Hair, Eyebrows, Cheek, Chin, Neck, Shoulders,</p>	<p>Notice that animals, including humans, have offspring which grow into adults. Investigate and describe the basic needs of animals, including humans, for survival (water, food and air). Describe the importance for humans of exercise, eating the right amounts of different types of food and hygiene.</p>	<p>observing, through video or first-hand observation and measurement, how different animals, including humans, grow; asking questions about what things animals need for survival and what humans need to stay healthy; and suggesting ways to find answers to their questions. Collect information about favourite foods and present it in a pictogram or bar chart. Investigating the effects of exercise on the body</p>	<p>Life cycle is the changes that an animal or plant passes through from the beginning of its life until its death Offspring is A person or animal’s child or children Growth is the process of getting bigger Animals including humans need water, food, shelter and air to survive To be healthy humans need To have a balanced diet of the right amount of different types of food and drink, To exercise regularly and To be hygienic Healthy means well and not suffering from any illness A balanced diet means to eat the right amount of different types of food and drink. Hygiene means keeping yourself and your surroundings clean, especially in order to prevent illness or the spread of diseases When you exercise, you move your body energetically in order to get fit and to remain healthy We keep good hygiene by washing regularly, having clean clothes, brushing teeth and hair.</p>	<p>Life cycle offspring growth Survive Water Food Air Shelter Balanced diet Healthy Exercise Hygiene</p>
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<p>To investigate living things and their habitats</p>	<p>Comments and asks questions about aspects of their familiar world such as the natural world. Can talk about some of the things they have observed such as plants, animals, natural and found objects. Talks about why things happen and how things work. Developing an understanding of growth, decay and changes over time. Shows care and concern for living things and the environment Looks closely at similarities, differences, patterns and change</p>	<p>Observing closely using all their senses using magnifying glasses Using tools such as magnifying glasses and nets carefully Noticing similarities and differences Asking questions why things happen Talking about mini beasts and looking at different features and similarities and differences Creating simple representation of mini beasts and labelling them Sorting mini beasts according to their similarities and differences (legs, wings)</p>	<p>Learn the life cycle of sunflowers, chicks, frogs, butterflies and humans etc. Begin to learn what is living, what is non -living and what is dead. Bio blitz (mini beast hunt) using keys and tools such as nets and magnifying glasses to identify the mini beasts and looking at similarities and differences Release the mini beasts in their own habitats A Habitat is a place where animals live. A Habitat has food, water and shelter for the living things. Learn about different habitats in the school grounds (grass, woods, meadow, playground and their features) Begin to understand and learn why animals choose a certain habitat to live in. Begin to learn what animals eat, using the idea of simple food chain.</p>	<p>Life cycle Egg, chick, chicken, frog spawn, tadpole, frog let, frog, seed, plant, sunflower, caterpillar, cocoon, chrysalis, butterfly, baby, child, adult, old adult Dead Alive Living Non living Habitat Grass Wood Meadow</p>					<p>Explore and compare the differences between things that are living, that are dead and that have never been alive. 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. Identify and name a variety of plants and animals in their habitats, including microhabitats. 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>Sorting and classifying things according to whether they are living, dead or were never alive, and recording their findings using charts. Describing how they decided where to place things, exploring questions for example: 'Is a flame alive? Is a deciduous tree dead in winter?' and talk about ways of answering their questions. Constructing a simple food chain that includes humans (e.g. grass, cow, human). Describing the conditions in different habitats and micro-habitats (under log, on stony path, under bushes) and find out how the conditions affect the number and type(s) of plants and animals that live there</p>	<p>MRS GREN: (all living things: move, eat, breath, make babies, are sensitive, make waste, grow) Living: a thing that is alive Dead: No longer being alive. extinct means none left in the world, all died out A habitat is the natural home of an animal or plant Examples of a habitat include a pond, seashore, garden, and desert. Animals and plants are adapted to their habitats. This means they have special features that help them to survive there. micro habitat is a small scale habitat within a larger habitat (e.g. a leaf on a tree). A food chain is a chain of living things that depend on each other for food. prey are Animals that are eaten by another animal for food A producer is a plant that makes its own food from sunlight consumer is an animal that eats plants or other animals A predator is an animals that eats other animals</p>	<p>MRS GREN: living dead alive extinct habitat micro habitat habitat adapted food chain producer prey predator consumer</p>
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<p>To investigate materials</p>	<p>Comments and asks questions about aspects of their familiar world such as natural world. Can talk about some of the things they have observed such as natural and found objects. Talks about why things happen and how things work. Developing an understanding of growth, decay and changes over time. Shows care and concern for the environment Looks closely at similarities, differences, patterns and change</p>	<p>Observing closely using all their senses using magnifying glasses Using tools and equipment carefully Noticing similarities and difficulties between materials Testing their ideas Having their own ideas Asking questions why things happen when doing simple tests Talking about different materials and looking at different features and similarities and differences Sorting different items based on the materials Sorting natural and man made things</p>	<p>Begin to distinguish between items and the materials they are made of, plastic, metal, fabric, paper, cardboard. Glass Use Some describing words to describe the materials (Hard, soft, smooth, rough, bendy, stretchy, squashy) Begin to Learn Natural and man-made materials and begin to sort them. Doing simple tests to find out what material is waterproof, Doing simple tests to find out how water freezes and how it melts Begin to learn how materials such as water and chocolate can change status from solid to liquid Learn that plastic does not rot by observing over time and Picking plastic to care for the environment. Make compost using fruit peels and leaves and twig and observe changes over time what happens to natural things</p>	<p>Plastic, metal, paper, cardboard, glass, fabric Hard, soft, smooth, rough, Natural Man made Waterproof Melting Freezing heat</p>	<ul style="list-style-type: none"> • Distinguish between an object and the material from which it is made. • Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water and rock. • Describe the simple physical properties of a variety of everyday materials. • Compare and group together a variety of everyday materials on the basis of their simple physical properties. 	<p>Performing simple tests to explore questions, for example: ‘What is the best material for an umbrella? ...for lining a dog basket? ...for curtains? ...for a bookshelf? ...for a gymnast’s leotard?’ Finding out how objects are similar / different based on the materials they are made from. Investigating How materials are similar and different to each other Sorting natural materials from man-made materials</p>	<p>Objects are things that you can touch or see. Objects are made from materials Some materials are natural while others are man -made. Natural materials are materials which are found in nature. Man-made materials are materials which have been produced by humans glass is a hard transparent material metal is a hard substance such as iron, steel, gold, or lead plastic is a material which is light in weight and does not break easily rock is the hard substance which the Earth is made of wood is the material which forms the trunks and branches of trees physical properties of materials Absorbent, waterproof, bendy transparent rough smooth shiny ,soft stiff stretchy Brittle ,elastic</p>	<p>objects materials natural man-made nature (absorbent , water proof, bendy Opaque, transparent Rough, shiny, smooth Soft, stiff, stretchy Shiny, dull, flexible) (wood, plastic, glass, metal, water, rock)</p>	<p>Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses •Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.</p>	<p>Comparing the uses of everyday materials in and around the school with materials found in other places (at home, the journey to school, on visits, and in stories, rhymes and songs); Observing closely, identifying and classifying the uses of different materials, and recording their observations.</p>	<p>Wood is opaque, hard, stiff and strong and good for doors and chairs Glass is Transparent, hard, smooth and good for Window Metal is Shiny, hard, smooth and good for coins and cutlery Plastic bag is bendy, smooth, translucent, stretchy Fabric is Stretchy, opaque and suitable for Clothes Brick is rough, strong, opaque, dull Paper is translucent, flexible, not waterproof Cardboard is rough, dull, opaque, not waterproof Tinfoil is shiny, bendy, waterproof, opaque</p>	<p>wood, metal, plastic, glass, brick, rock, paper, cardboard absorbent water- proof bendy, opaque transparent, rough, shiny smooth, soft stiff, stretchy shiny, dull flexible, solid squashing, hardness strength bending, twisting stretching</p>
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<p>To understand seasonal changes</p>	<p>Developing an understanding of growth, decay and changes over time. Looks closely at similarities, differences, patterns and change.</p>	<p>Noticing and observing changes to the deciduous trees throughout the seasons Asking questions about changes they observe throughout the seasons. Talking about the weather and the changes they observe during the seasons.</p>	<p>Day Time The time between sunrise and sunset. Night Time The time between sunset and sunrise. There are 4 seasons. Autumn, winter, spring and summer. Learn about signs of different seasons and the weather associated with each season.</p>	<p>Day, night, sunrise, sunset Seasons, autumn, Conker Pine Cone, acorn Golden Leaves Fireworks Bonfires Rainy, windy, cloudy Harvest Foods winter, cold, frost, snow, ice, freezing spring, daffodils, crocuses, blossom, new leaves, baby animals, rainbow, showers, thunderstorm summer, green leaves and grass, sunny, hot, dry</p>	<p>Observe changes across the four seasons. Observe and describe weather associated with the seasons and how day length varies.</p>	<p>making tables and charts about the weather; and making displays of what happens in the world around them, including day length, as the seasons change</p>	<p>The year is divided into four parts according to the weather and daylight hours. Each part is called a season. The seasons are called Autumn Winter Spring Summer Autumn and signs of autumn, weather associated with autumn, days starting to get shorter Winter and signs of winter, weather associated with winter, days are short Spring and signs of spring, weather associated with spring, days starting to get longer Summer and signs of summer, weather associated with summer, days are long Weather is The conditions outside,</p>	<p>Season , Autumn, Winter Spring, Summer Weather, Daylight Months of the year Temperature Sunny, Windy Breezy, Cloudy Stormy, Rainy Snowy, foggy Thunderstorm Rainbow, Showers Dry, wet, Hot Cold, Chilly, Frost Ice, freezing</p>				
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