

Intent

- For children to see themselves as scientists (Science Capital).
- To have the skills to be able to work scientifically.
- To understand and explore the natural world.
- To be curious about the world around them.
- To have the scientific vocabulary to engage with the world around them.



KS1 Working Scientifically

- asking simple questions and recognising that they can be answered in different ways (WS1)
- observing closely, using simple equipment (WS2)
- performing simple tests (WS3)
- identifying and classifying (WS4)
- using their observations and ideas to suggest answers to questions (WS5)
- gathering and recording data to help in answering questions (WS6)

| | Curriculum | Knowledge | Skills | Vocabulary |
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| FI | <p>Development Matters</p> <p>3 & 4 year olds</p> <ul style="list-style-type: none"> • 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. • Use all their senses in hands-on exploration of natural materials. | <p>Scientific Enquiry (<i>throughout</i>)</p> <ul style="list-style-type: none"> • To know that different things work in different ways. • To understand that if they do something (cause) there might be an effect. <p>Living Things – Plants</p> <ul style="list-style-type: none"> • To know that plants change. • To understand that we need to look after plants for them to stay alive. • To know very basic vocabulary about plants. <p>Living Things – Animals</p> <ul style="list-style-type: none"> • To be aware that they have a body. • To notice some simple similarities and differences between different bodies. • To notice changes that show that they are growing/getting older (<i>e.g. having birthdays, moving schools</i>). • To know some names of common pets, farm animals and jungle animals. • To notice that animals change (<i>e.g. notice that there are 'baby' animals, recognise that the hungry caterpillar changes into the butterfly</i>). • To know that animals need to eat food. | <p>Scientific Enquiry (<i>throughout</i>)</p> <ul style="list-style-type: none"> • To experience a wide range of different of mechanical objects/objects that can be manipulated. • To try different ways to make an object work, starting to be systematic. • To explore a wide range of materials and processes. <p>Living Things – Plants</p> <ul style="list-style-type: none"> • To experience different plants growing (<i>e.g. seeing cress grow quickly and other plants, such as broad beans taking longer to grow, plants in the outside environment changing</i>). • To look at and talk about what they see at different stages of the plant growing, using very basic vocabulary. • To talk about and show what they can do to look after plants (<i>e.g. water them</i>). • To engage with stories about plants growing (<i>e.g. Titch</i>). <p>Living Things – Animals</p> <ul style="list-style-type: none"> • To join in with songs and rhymes about bodies (<i>e.g. heads, shoulders, knees and toes</i>). • To look at different people (<i>e.g. photos, figures, other children/staff</i>) and talk about what they notice. • To explore bodies through play (<i>e.g. role play doctors</i>). • To engage with books about the body (<i>e.g. lift-the-flap body parts</i>). | <p>Living Things – Plants</p> <p>Plant, grow, bigger Look after, care, water. Seed, leaf, tree, flower.</p> <p>Living Things – Animals</p> <p>Bodies, heads, face, eyes, ears, nose, mouth, shoulders, arms, hands, fingers, thumbs, legs, knees, feet, toes Bigger, smaller, baby, older, younger Birthday, moving, getting bigger, older, new. Pets, cat, dog, rabbit, hamster. Farm animals, cow, sheep, pig, horse, chicken, duck.</p> |

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| | <ul style="list-style-type: none"> Explore collections of materials with similar and/or different properties. Talk about what they see, using a wide vocabulary <p>3 and 4 year statements from Development Matters 2021 (Understanding the World)</p> | <ul style="list-style-type: none"> To understand that we should look after all living things. To notice that we can find animals in specific places (<i>e.g. if you lift up a log you might find a minibeast, if you look in the trees you might see a bird</i>). <p>Forces</p> <ul style="list-style-type: none"> To understand simple language relating to forces. To notice that we sometimes have to apply forces for objects to work. To notice that there can be changes when we apply force to materials. <p>Materials</p> <ul style="list-style-type: none"> To notice different materials and use basic vocabulary to talk about what I can see. To notice when materials change. | <ul style="list-style-type: none"> To engage with, and comment upon, special occasions such as birthdays and moving schools (<i>e.g. say why people have birthdays and what will happen when children move schools</i>). To joining in with songs and rhymes about a range of different animals (<i>e.g. Old MacDonald, 5 little ducks, Down in the Jungle etc.</i>). To engage with stories about animals in different settings/habitats, including stories where animals grow and change (<i>e.g. The Very Hungry Caterpillar</i>). To engage with animals through play (<i>e.g. small world – telling stories, naming animals, sorting animals</i>). To observe real animals in the local environment. To talk about the need to look after plants and animals and comment on how they look after them (<i>e.g. don't stamp on ants in the garden</i>). To find ways to look after animals in their environment (<i>e.g. with the help of an adult, feed bees when they are sleepy, find the right food for a snail</i>). To explore their local environment, predicting and observing what plants and animals they might find in different areas. <p>Forces</p> <ul style="list-style-type: none"> To explore different objects and materials that require them to: push, pull, pump and stretch. To test out different forces (<i>e.g. going around a room with a magnet to see what it is attracted to</i>). To experience cause and effect with forces (<i>e.g. wind up/friction cars, syringes in water play, pushing things into water, blood pressure machine</i>). To apply forces for a purpose (<i>e.g. push against somebody in Body Balance, move a tyre, pump out paint from dispensers, pull a friend along in a rickshaw, push a wheelbarrow, pump up balls</i>). To try to solve challenges with forces (<i>e.g. balls in pipes, friction cars, stretch elastic as far as can go</i>). <p>Materials</p> <ul style="list-style-type: none"> To explore different materials in the environment and talk about them. To experience different processes of materials (<i>e.g. ice play, cooking</i>). To observe how materials change (<i>e.g. ice melting, butter melting, cooking cake mixture, squashing play dough</i>). | <p>Jungle animals, elephant, giraffe, lion, monkey, crocodile, tiger.</p> <p>Baby, bigger, grow, older, change, different.</p> <p>Food, alive, hungry, need.</p> <p>Look after, care, living things, gentle.</p> <p>Homes, garden, find, minibeast, birds, trees, grass, mud.</p> <p>Forces</p> <p>Push, pull, pump, stretch, press.</p> <p>Pushing, pulling, pumping, stretching, try, move, get, balance, carry.</p> <p>Materials</p> <p>Ice, mixture, hot, cold, runny, squashy, cooking, cooling, melting, changes.</p> |
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| F2 | <p>Children in Reception</p> <ul style="list-style-type: none"> Explore the natural world around them. Describe what they see, hear and feel whilst 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>Reception Statements from Development Matters 2021 (Understanding the World)</p> | <p>Living Things – Animals</p> <ul style="list-style-type: none"> To know that humans have bodies. To know that there are similarities and differences between bodies. To know that people are animals. To know the names of some familiar animals. To know that animals grow and change (<i>get bigger and look different</i>). To know that familiar animals eat different things (<i>e.g. meat and plants</i>). To know we have to care for animals. <p>Living Things – Plants</p> <ul style="list-style-type: none"> To know that plants are living things. To know that plants grow. To know the name of some familiar plants. To know some parts of a plant (<i>leaf, flower, trunk</i>). To know that we have to care for plants. <p>Materials</p> <ul style="list-style-type: none"> To know the name of a variety of everyday objects. To understand there is cause and effect (<i>ice melting, shadows, floating & sinking</i>). <p>Seasons</p> <ul style="list-style-type: none"> To know there are different types of weather. To know the weather and seasons impact on the way animals behave (<i>people wear a coat in winter as it is cold</i>). | <p>Living Things – Animals</p> <ul style="list-style-type: none"> To talk about and represent their own bodies (<i>e.g. self-portraits, looking in mirrors, look at photographs of themselves</i>). To notice some similarities and differences between their own bodies and others (<i>e.g. look at photographs of familiar people and notice different coloured hair, taller/shorter, older/younger</i>). To be able to talk about and name animals they see. After careful observation, to be able to record the animals they see (<i>draw/paint</i>). To respond to and join in with songs, rhymes and poems about the natural world. To be able to notice and talk about when animals are the same and different. To notice and talk about how animals, including humans, grow (<i>they get bigger, look different, different colour hair etc.</i>) To be able to sort different animals in simple ways (<i>e.g. 2 legs, 4 legs. Live in the sea, don't live in the sea. Has feathers, doesn't have feathers</i>). To talk about how we care for the natural environment, including plants and animals. <p>Living Things – Plants</p> <ul style="list-style-type: none"> To be able to talk about and name plants they see. After careful observation, to be able to record the plants they see (<i>draw/paint</i>). To be able to notice and talk about when plants are the same and different. To be able to investigate cause and effect (<i>eg. Watering plants and they grow</i>). To be able to sort different plants. To use different senses to explore the outside environment. To talk about how we care for the natural environment, including plants and animals. <p>Materials</p> <ul style="list-style-type: none"> To be able to talk about and name the everyday objects they see. To be able to investigate cause and effect. To be able to manipulate a range of materials. | <p>Living Things – Animals</p> <p>Body, head, arms, hands, legs, feet, hair, eyes, ears, nose, tongue, fingers. Taller, shorter, bigger, smaller, older, younger, colour. Animals, humans. Cat, dog, rabbit, cow, pigeon, seagull, parrot, goldfish, clownfish, shark, frog, snake, lizard.</p> <p>Grow, bigger, smaller, change, baby, adult. Food, meat, plants. Care, feed, look after, water, food, drink.</p> <p>Living Things – Plants</p> <p>Plants, grow, living, Tree, bush, flower, grass, leaf, flower, trunk. Care, water.</p> <p>Materials</p> <p>Objects, chair, table, wall, book, cup, clothes, bike, doll, spoon, window, door. Different, same. Floating, sinking, melting, shadow</p> <p>Seasons</p> <p>Rain, wind, sun, snow, cold, hot.</p> |

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| | | | <ul style="list-style-type: none"> To be able to compare the same object made from different things (<i>e.g. chairs – hard, soft etc.</i>) <p>Seasons</p> <ul style="list-style-type: none"> To be able to talk about and name the weather they see. To record the weather they see (<i>e.g. draw pictures for a class/individual diary of the weather, take photographs of different weather, tick a simple chart to record the weather</i>). To notice/show that animals behave differently in different seasons (<i>e.g. putting on their coat at playtime because it is cold, talking about what animals might do when its hot cold</i>). | |
| | Curriculum | Knowledge | Skills | Vocabulary |
| Year 1 | <p>Animals, including Humans</p> <ul style="list-style-type: none"> identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals identify and name a variety of common animals that are carnivores, herbivores and omnivores describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets) 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>Plants</p> <ul style="list-style-type: none"> 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 | <p>Animals, including Humans</p> <ul style="list-style-type: none"> To know the names of a range of common animals. To know that there are 5 main animal groups and understand their characteristics (<i>e.g. warm/cold blooded, eggs, lungs/gills, fur/feathers/scales</i>). To understand the terms carnivore, herbivore and omnivore. To know the names of the parts of a variety of common animals. To name the basic parts of the body. To know the name of the 5 senses and understand what their purpose is. To know which part of the body is associated with each sense. <p>Plants</p> <ul style="list-style-type: none"> To recognise and name a variety of common wild and garden plants. To understand the terms deciduous and evergreen in terms of trees. To understand the basic structure of flowering plants, including trees. To know the names of the parts of flowering plants. <p>Everyday Materials</p> <ul style="list-style-type: none"> To know the names of a range of common materials. To know the name of an object and what it is made from. To know the names of the physical properties of materials. <p>Seasonal Changes (LINKS WITH GEOGRAPHY)</p> | <p>Animals, including Humans</p> <ul style="list-style-type: none"> To ask questions about animals and suggest their own ideas and ways that the questions can be answered (WS1, WS5). To be able to sort animals, using their own classifications (WS4). To be able to classify animals into fish, amphibians, reptiles, birds and mammals. (WS4) To be able to sort range of animals into carnivores, herbivores and omnivores (WS4). To identify the key features of fish, amphibians, reptiles, birds and mammals (WS4). To be able to compare the structure of a variety of common animals including pets. (WS4) To be able to draw and label the basic parts of the body (WS6). To be able to use sense to compare different textures, sounds and smells. (WS4) <p>Plants</p> <ul style="list-style-type: none"> To be able to identify deciduous and evergreen trees. (WS4). To observe the parts of plants closely, using simple equipment (e.g. magnifying glass) (WS2). To draw and label the basic structure of flowering plants (WS6). <p>Everyday Materials</p> <ul style="list-style-type: none"> To be able to observe everyday materials closely to identify the simple physical properties (WS2, WS4). To ask questions about and test materials in order to identify the simple physical properties (<i>e.g. best material for teddy's raincoat</i>) (WS3, WS5). To be able to compare everyday materials on the basis of their properties (WS4) To be able to sort materials by their properties. (WS4) <p>Seasonal Changes (LINKS WITH GEOGRAPHY)</p> | <p>Animals, including Humans</p> <p>Question, sort, features, label, compare, Animal names (<i>including many familiar/local animals and a range from the animal groups</i>).</p> <p>Fish, amphibians, reptiles, birds and mammals, warm/cold blooded, eggs, lungs, gills, fur, feathers, scales.</p> <p>Carnivores, herbivores, omnivores.</p> <p>Scales, fins, tails, tongue, claws, feathers, wings, beak, fur or hair.</p> <p>Head, neck, arms, elbows, legs, knees, face, ears, eyes, hair, nose, mouth, teeth, hands, fingers, wrists, knuckles, shoulders, ankles, hips.</p> <p>Senses, sight, hearing, taste, touch and smell.</p> |

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| | <p>of common flowering plants, including trees.</p> <p>Everyday Materials</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>Seasonal Changes</p> <ul style="list-style-type: none"> observe changes across the four seasons observe and describe weather associated with the seasons and how day length varies. | <ul style="list-style-type: none"> To know the name of the 4 seasons. To understand the characteristics of the 4 seasons. To understand how day length varies across the 4 seasons. | <ul style="list-style-type: none"> To ask questions about seasonal changes and use their ideas/observations/explorations to answer the questions (WS1, WS6) To observe the changes across the 4 seasons. (WS2) To record the changes of the seasons (draw, paint, craft). (WS6) To perform a simple test to gather data about weather patterns (e.g. collect rain). (WS3) To identify and/or gather data about weather patterns across the 4 seasons.(WS4, WS6) | <p>Eyes, nose, ears, mouth, tongue, hands, fingers,</p> <p>Plants</p> <p>Magnifying glass, label.</p> <p>Wild, garden, plants. Poppy, daisy, thistle, buttercup, daffodil, rose, sunflower, dandelion.</p> <p>Deciduous, evergreen. Trunk, branches, bark, leaves, blossom, stem, petals, roots, fruit.</p> <p>Everyday Materials</p> <p>Question, test, compare, sort, Materials, plastic, glass, wood, metal, water, rock, fabric, paper/cardboard. Properties, hard, soft, stretchy, bendy, stiff, flexible, rigid, shiny, dull, rough, smooth, waterproof, not waterproof, absorbent, not absorbent, opaque, transparent.</p> <p>Seasonal Changes</p> <p>Question, test, measure.</p> <p>Season, autumn, winter, spring, summer.</p> <p>Change, weather, patterns, temperature, hot, warm cold, wet, dry, life, blossom, sunny, rain, leaves, snow, frost.</p> |
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| | Curriculum | Knowledge | Skills | Vocabulary |
| Year 2 | <p><u>Animals, including Humans</u></p> <ul style="list-style-type: none"> notice that animals, including humans, have offspring which grow into adults find out about 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><u>Living Things and their Habitats</u></p> <ul style="list-style-type: none"> explore and compare the differences between things that are living, dead, and things 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 | <p><u>Animals including humans</u></p> <ul style="list-style-type: none"> To name the different stages of the human and another animal's lifecycle. To understand the differences between the stages of the life cycle. To know that to survive, animals have the basic needs of water, food and air. To recognise that certain things keep humans healthy. To name different things humans can do to stay healthy: exercise, eat the right amounts of different foods, drink plenty of water, sleep, clean hands, bodies and teeth. <p><u>Living things and their habitats</u></p> <ul style="list-style-type: none"> To understand what it means for something to be living, dead or never alive. To understand what a habitat is. To name a variety of key habitats. To know the climate and environment of key habitats. To name some animals and plants within each key habitat. To understand the suitability of habitats for these animals and plants. To recognise that plants and animals within a habitat depend on each other. To understand what a micro-habitat is. To name a variety of animals and plants in the local environment. To be able to understand different food chains, relating to specific habitats. To name different sources of food within a food chain. To understand the human role in a food chain. <p><u>Plants</u></p> <ul style="list-style-type: none"> To name the different stages of a plant lifecycle starting with a seed. To name the different stages of a plant lifecycle starting with a bulb. | <p><u>Animals including humans</u></p> <ul style="list-style-type: none"> To observe how humans and another animal change as they grow (WS2). To order the different stages of human and another animal's life cycle (WS4). To gather and record data to answer questions about animals and growth/life processes (<i>e.g. are taller children older?</i>) (WS6) To identify what are animal's basic needs (<i>as opposed to 'wants' or preferences</i>). (WS4) To classify foods and behaviors as healthy and unhealthy (WS4). <p><u>Living things and their habitats</u></p> <ul style="list-style-type: none"> To ask questions about living things and understand that they can be answered in different ways (<i>e.g. is a flame alive? Do deciduous trees die in winter?</i>) (WS1) To identify and objects that are living, dead and have never lived (<i>e.g. paper, cotton, wood, plastic, metal, wool, rocks, stones, iPad, animals, fur, leather, plants – picked and not picked</i>). (WS4) To compare objects using charts (<i>e.g. a table with columns for dead, living, never been alive</i>) (WS6) To classify animals by their habitat (<i>e.g. rainforest compared to British forest</i>). (WS4) To compare the characteristics of different habitats and suggest why they are suitable habitats for the plants and animals there. (WS4) To ask questions about the local environment, make suggestions for how the question/s can be answered, then use their observations and/or ideas to suggest answers (WS1 and WS5). (<i>Alongside or separate to the above point</i>) To observe habitats and micro-habitats within the local area (<i>e.g. put a hoop in the environment and draw all the plants and animals, using magnifying glasses</i>). (WS2) To identify suitable sources of food to create a food chain. (<i>e.g. grass, cow, human</i>). (WS4) <p><u>Plants</u></p> | <p><u>Animals including humans</u></p> <p>Reproduce, growth, change, humans, animals, offspring, live young, egg, baby, toddler, child, teenager, adult, life cycle, (key vocabulary for animal chosen). Survival, basic needs, water, food, air. Healthy, unhealthy, exercise, active, diet, water, clean, hygiene</p> <p><u>Living things and their habitats</u></p> <p>Living, alive, dead, died, never alive, objects, sort. Habitat, micro-habitat, environment. Ocean, urban, rainforest, forest, desert, polar desert. Climate, hot, cold, wet, dry, humid. Suitable, diet, climate. Survive, depend, food, diet, predator, prey. Micro-habitat, animals, plants, local, area, forest, grass, soil, logs, rocks. Food chain, habitat, diet, food source, producer, consumer, predator, prey.</p> <p><u>Plants</u></p> |

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| | <p>food chain, and identify and name different sources of food</p> <p>Plants</p> <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. <p>The Use of Everyday Materials</p> <ul style="list-style-type: none"> 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 shape of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. | <ul style="list-style-type: none"> To understand the differences between the stages of a plant life cycle. To know that plants need water, light and a suitable temperature to grow and stay healthy. <p>The Use of Everyday Materials</p> <ul style="list-style-type: none"> To understand how each key material's properties make it suitable for different purposes. To understand that some materials can be changed in different ways. To understand the terms: squashing, bending, twisting and stretching. | <ul style="list-style-type: none"> To observe closely how seeds and bulbs change as they grow (<i>e.g. sketching and labelling in a diary, taking photographs and labelling, explain using vocabulary</i>) (WS2). To order the different stages of a bulb and seed's life cycle (WS4). To observe plants at different stages of growth in the local environment. (WS2). To set up, conduct and record a simple comparative test to see what plants need to grow and <u>stay healthy</u> (<i>e.g. cress in different conditions experiment</i>) (WS3, WS6). <p>The Use of Everyday Materials</p> <ul style="list-style-type: none"> To ask questions about the suitability of materials and give their ideas (<i>e.g. what is a window made from and why? Why isn't a wall made out of cardboard?</i>) (WS5) To compare the suitability of a range of everyday materials for different objects (<i>e.g. what are suitable/unsuitable materials for a spoon?</i>) (e.g. (WS4). To ask questions about how materials can be changed and recognise that these questions can be answered in different ways (WS1). To perform simple tests to see how different materials can be changed, using the data to answer questions (<i>e.g. how can we change paper?</i>) (WS3, WS6). | <p>Plant, life cycle, growth, change, seed, bulb, germinate, seedling, plant, stem, leaves, flower, roots. Water, light, temperature, hot, cold, grow, survive, healthy, comparative, test, results.</p> <p>The Use of Everyday Materials</p> <p>Materials, objects, wood, plastic, glass, metal, water, paper, fabric, rock, properties, hard, soft, rigid, flexible, dull, shiny, smooth, rough, opaque, transparent, absorbent, waterproof, purpose, suitable, unsuitable, Material, changes, squashing, bending, twisting, stretching, heating, cooling, reversible changes, irreversible changes.</p> |
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