

Science scheme of work

Progression grids



	Reception	Year 1	Year 2
Plants	<p>The children will:</p> <ul style="list-style-type: none"> Explore the natural world around them, making observations and drawing pictures of animals and plants 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. Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter. 	<p>The children will be able to:</p> <ul style="list-style-type: none"> Name a variety of wild and garden plants Name a variety of evergreen trees Name the parts of a flower (e.g. flowers, blossom, petals, fruit, roots, bulb, seed, stem) Describe the structure of a flower Name the parts of a tree (e.g. roots, trunk, branches, bark) Describe the structure of a tree 	<p>The children will be able to:</p> <ul style="list-style-type: none"> Observe and describe how seeds and bulbs grow into mature plants Observe and understand why plants need water, light and suitable temperature to grow and stay healthy
Animals, including humans	<p>The children will be able to:</p> <ul style="list-style-type: none"> Name a variety of common animals including fish, amphibians, reptiles, birds and mammals Name a variety of common animals that are carnivores, herbivores and omnivores Describe and compare the external features of common animals including fish, amphibians, reptiles, birds and mammals Name, draw and label the basic parts of a human body (e.g. head, neck, arms, legs) Name each body part associated with each sense Compare different textures, sounds and smells Use observations to compare and contrast and use them to identify and group animals by what they eat 	<p>The children will be able to:</p> <ul style="list-style-type: none"> Match offspring to animals including humans Find out and describe the basic needs of animals including humans for survival (water, food and air) Describe the importance of human exercise, eating the right amounts of different types of food and hygiene Make observations of growth Explore and compare the differences between things that are living, dead and things that have never been alive 	
Everyday Materials	<p>The children will be able to:</p> <ul style="list-style-type: none"> Name objects and the materials they are made from Name everyday materials Identify everyday materials including wood, plastic, glass, metal, water and rock Describe simple properties of everyday materials Compare the properties of everyday materials Group materials based on properties Explore and experiment the suitability of materials for purpose Perform simple tests to explore suitability 	<p>The children will be able to:</p> <ul style="list-style-type: none"> Identify suitability of everyday materials Compare suitability of everyday materials including wood, metal, plastic, glass, rock, brick, paper, cardboard Find out how shapes of solid objects from made from some materials can be changed e.g. squashing, bending Identify different uses of the same materials e.g. Coins/ cans Discuss that the same objects can be made from different materials e.g. spoon- metal or wood Find out about people who have developed useful materials e.g. John Dunlop, Charles Macintosh Compare uses of everyday materials in different environments 	

<p>Seasonal changes</p>		<p>The children will be able to:</p> <ul style="list-style-type: none"> • Name the four seasons • Identify features of each season • Observe changes across the four seasons: Autumn, Winter, Spring, Summer • Name different weather types • Talk about changes in weather • Observe changes in weather across the four seasons • Record changes in weather • Record changes in seasons • Discuss day length as season change 	
<p>Living things and their habitats</p>			<p>The children will be able to:</p> <ul style="list-style-type: none"> • Name common habitats and the animals that live there (including Microhabitats) • Describe how habitats provide for basic needs of plants and animals • Compare different habitats • Describe how animals obtain food from plants and other animals, exploring the use of a food chain • Name different sources of food
<p>Working Scientifically</p>		<ul style="list-style-type: none"> • Make observations • Explore and investigate characteristics • Describe using different senses • Uses appropriate vocabulary in group and individual discussions • Begin to answer questions • Begin to explain what they know • Complete records by filling out and drawing including charts, tables, diagrams and pictures • Uses simple equipment e.g. magnifying glasses • Perform tests • Sort in different ways • Begin to notice patterns and relationships 	<ul style="list-style-type: none"> • Make detailed observations • Explore and investigate characteristics to compare and contrast characteristics • Describe using different senses, knowledge and own ideas in full sentences • Uses subject specific vocabulary in group • Answer a range of different types of questions including how and why • To make own choices for how to record and communicate findings • To make predictions and explore own ideas <ul style="list-style-type: none"> • Find things out using secondary sources Explain what they know • Gather data and keep records in a range of ways including charts, tables, diagrams and pictures some over time <ul style="list-style-type: none"> • To identify need for and use equipment appropriately • To perform a simple test, explaining what they have found out and how they found it out <ul style="list-style-type: none"> • Sort and classify given reasons for choices • Talk about pattern and relationship • Explore questions making sensible suggestions for how to find out.

EYFS story plans

<p>Cave Baby/Bringing the Rain to Kapiti Plain</p>	<p>I am Henry Finch/Look Up!</p>	<p>Billy and the Beast/I Want My Hat Back</p>
<ul style="list-style-type: none"> -Discover nocturnal animals and describe features including owls, bats, badgers, hedgehogs and foxes. - Discuss what a habitat is and talk about features of a woodland habitat. Discuss similarities and differences across habitats in relation to woodlands. Name and describe features of animals within a woodland habitat. - Make observational drawings of trees and talk about tree growth. - Talk about seasonal change including weather and tree changes. - Talk about how to take care of the natural world. - Discuss day/night and light/ dark. - Name sources of light (science) including sun, torches, stars and lights. - Engage in small world space (stars/ night). - Participate in a 'camping' style activity where children can experience camping, den building, hot chocolates etc. 	<ul style="list-style-type: none"> - Experience: local town walk, looking at bridges, Friday market - Talk about the features of environments, including towns - Talk about own experiences of their immediate environment - Recognise features of towns from aerial views - Compare and contrast environments (similarities and differences), including towns - Talk about how to look after the environments, such as recycling - Understand the importance of changing states, such as melting - Explore floating and sinking 	<ul style="list-style-type: none"> - Talk about hot and cold environments and houses. Look at Antarctica and icy environments. - Talk about ice features and the changes states of matter. Ice experiments linked to igloos - Explore how light travels through materials when making our homes. - Talk about natural homes including homes for animals.
<p>The Extraordinary Gardener/The Tiny Seed</p>	<p>Night Pirates/Lost and Found</p>	<p>Naughty Bus/ I Will Never Not Ever Eat a Tomato</p>
<ul style="list-style-type: none"> -Find out about a Farm setting. -Name and describe farm animals and their young. -learn names of the seasons of the year. -Learn about farm jobs that take place during different seasons of the year. -Find out about different types of weather. - Explore what clothes we need to wear for weather conditions. -Comparing environment/habitats: 'Ponds'. Walk to the local pond. -Find out what the children observe e.g. ducks, geese, and swans. -Name and describe features of the creatures that live in a pond. -Find out about the life cycle of a frog. -Sequence pictures to show the growth. 	<ul style="list-style-type: none"> - Recognise environments that are different to the one in which we live in, making comparisons between environments. - Explore ocean habitats, drawing pictures of under the sea animals. - Talk about how sea animals adapt to the ocean. - Talk features of 'Summer' including weather changes, trees, school environment, the sea side etc. - Discuss dinosaurs and past habitats, relating to changing states of matter - Participate in a 'seaside' day experiencing summer beach clothes, ice creams, seaside games and puppet shows. 	<ul style="list-style-type: none"> -Explore plants and talk about different parts. -Plant flowers (sunflowers) Observe their growth. -Plant vegetables (carrots and turnip). - Discuss weather needed for plant and vegetable growth. - Observe the decay changing state of vegetables. (Science) explore senses language when tasting fruit and vegetables -Make a small world garden including growing grass, making shed, vegetable patch, bench, stepping stones. -Explore what minibeasts are hiding under a leaf of a plant/ under the ground.

Year One story plans

<p><u>Where the Wild Things Are/ Julian is a Mermaid</u></p>	<p><u>The Comet/Astro Girl</u></p>	<p><u>Izzy Gismo/A Walk in London</u></p>
<p>Materials Name and describe a variety of everyday materials, including wood, plastic, glass, metal, water, and rock. To describe the properties of everyday materials. To compare and group together a variety of materials on the basis of their physical properties. What materials would Max use to make a boat? What materials would not be suitable? Why? Make a variety of boats from a variety of materials to see which one float the best. Can they still float with a load? To explore the five sense and the human body, including food tasting.</p>	<p>Animals Day and night observations - Look at the differences between light and dark. Changes that occur between night and day. Investigate shadows. Animals - Link to day and night processes by looking at nocturnal and diurnal animals. Name a variety of common animals. Children to investigate the features of animals Eg. How do you know this is a bird? How do you know this is a reptile? Describe and compare the external features across a variety of animals. Understand the terms carnivores, herbivores or omnivores. Sort common animals into categories based on what they eat.</p>	<p>Weather Identify the seasonal and daily weather patterns of the UK. Name the different types of weather and discuss changes observed. Record the changes observed through keeping a weather diary. Explore weather by making and using equipment to gather information e.g. rain gauges, sun dials, wind socks or flags. Record a weather forecast/report - Links to computing.</p>
<p><u>The Sea Saw/ The Odd Egg</u></p>	<p><u>Beegu/Pig the Pug</u></p>	<p><u>Stanley's Stick/Dinosaur and all that Rubbish</u></p>
<p>Plants: To grow our own tomatoes and lettuce and identify healthy foods by looking at the story. To understand how seeds and bulbs grow into mature plants by planting different types of seeds. To name a variety of wild and garden plants e.g. Go outside for a walk and identify what flowers and plants we have in our school grounds. Name the parts and the structure of a flower e.g., by labelling pictures. Understand why plants needs water, light, suitable temperature to grow and stay healthy. To name the types of trees within the school environment by going on a walk around the grounds. To describe the different parts of a tree.</p>	<p>Materials: What objects are there in our school - what are they made from? Name everyday materials and describe their properties. Group different materials based on physical properties. Look at how materials for toys has changed over the years. Look at how a teddy bear may be made from a range of different materials. Senses and the human body: Which part of the body is associated with each sense? Demonstrate all 5 senses being used. Kitchen science, dissolving and absorbency.</p>	<p>Seasonal Change To name the four seasons and identify features of each one. Observe changes across the seasons: autumn, winter, spring and summer. E.g., go outside to observe changes to trees in outdoor area. Link seasons to geography. Also embedding/ introducing jungle animals and pets needs and care. E.g., investigating vets, discussing wild and domestic animals.</p>

Year Two story plans

<p>Jim and the Beanstalk/ We are the Water Protectors</p>	<p>Ocean Meets the Sky/ Dear Earth</p>	<p>Rose Revere Engineer/ Iggy Peck Architect</p>
<p>Plants Planting potatoes and beans. Observe and describe how seeds and bulbs mature into plants. Create a diary of the seed that they are growing and how it changes over time. Find out and describe how plant need water, light and suitable temperature to grow healthy. Conduct an experiment where seeds are planted and not given these things, observe what happens. Name and explain the functions of different parts of plants.</p> <p>Healthy Eating Describe the importance for human of exercise, eating the right amount of different types of food and hygiene. Look at food pyramid.</p>	<p>Day and night processes - find out why is it dark at night and light in day through exploration of the planet's rotation. Investigate how the planets of the solar system all rotate around the sun. Create an act out how the planets rotate around the sun. - This will link to the animation project. Exploration of the difference between planets and moons. Dinosaurs / evolution</p>	<p>Materials (The Bridge): Identify suitability of materials to create and build bridges. Compare and discuss the suitability of materials e.g., why is paper not suitable for a bridge? Talk about and identify how the different uses of the same materials e.g., what else are bricks used for? Discuss that the same objects e.g., bridges can be made from different materials - wooden bridges, metal bridges etc. Find out how shapes of materials can be changed when goats are walking over the bridge e.g., squashing, bending, twisting. Compare uses of everyday materials in different environments. Investigate, design and test suitable materials to create a waterproof jacket for the goats when the troll tosses them into the water. Find out about people who have developed useful materials e.g., John Dunlop, Charles Macintosh. Living Things: (Under the Bridge). Who lives under the bridge? What is he like? Discuss and describe the important of exercise and hygiene to keep healthy. Talk about digestion and how the body uses food to get what it needs.</p>
<p>The Last Stop on Market Street/ The Journey Home</p>	<p>Lubna and Pebble/ Tadpoles Promise</p>	<p>The Minpins/ The Bear Under the Stairs</p>
<p><i>Recap Animals from Year 1 - naming animals, carnivore/herbivore/omnivore, describe external features. Link this to the animals that are in the story and use this to create drawings and watercolour paintings of different animals found in each place.</i> Find and describe the basic needs of animals including humans for survival (water, food and air). Look at animals in the story and how they get what they need in each place. Make observations of growth in humans and animals in the story and then extend to other animals and plants that could be in different setting. Match offspring to animals including humans. Explore and compare the differences between things that are living, dead and things that have never been alive. Look at the different places that are in the story and identify these things e.g., dead leaves, living animals, never been alive things like the bags that they take on the journey etc. Weather. Forest Animals. Seasons. Minibeasts. States of matter.</p>	<p>Habitats: Journey around the world to look at a variety of habitats. Identify and name plants and animals in their habitat. Discuss how different habitats are suited to particular plants and animals based on their needs. Look at eco system and how plants and animals within an environment can be codependent. Move on to discuss food chains - how to plants and animals get food from one another. Name sources of food and represent this in a simple food chain. Link food chains to the importance of protecting the environment and how extinction can lead to the collapse of a food chain/ ecosystem. Endangered animals and protected habitats.</p>	<p>Exploring colour through science. Explore the spectrum of colour, rainbows and conduct various kitchen experiments with a colour focus e.g. walking water experiment to create a rainbow, Skittles experiment.</p>