






Year 1 Progression & Coverage

Working Scientifically in KS1 - Years 1 and 2

	What pupils should know and be able to do	Key vocabulary
	<p>Pupils learn that scientists answer questions by gathering evidence, recording it and comparing it. Evidence can be gathered by observing and measuring. Pupils learn to make measurements using non-standard units and record using simple bar and tally charts.</p>	<p>observe, measure question, find out, answer, predict, 'what do you think will happen', compare, observe, pattern, results, happened, table, measure, record, graph, chart,</p>
	<p>Careful observation can take time. It can happen over days, weeks and months. Measuring where possible can suggest what may be happening and why. Pupils learn to say what they are looking for and what they are measuring. They learn how to observe closely using the appropriate senses, aided by simple equipment such as magnifying glasses, digital microscopes, egg timers. They begin to take measurements, initially by comparisons, then using non-standard units. Observations can be recorded e.g. using photographs, videos, drawings, labelled diagrams or in writing.</p>	<p>measure, equipment, record, results, observe, compare, describe, compare, similar, different, unit measurements</p>
	<p>Identifying means to recognise something. Pupils learn that living and non-living things can be sorted according to their differences (classifying) They can then group things according to similarities and differences. These are called criteria. A classification key is a way of grouping according to criteria. Pupils classify using simple prepared tables and sorting rings</p>	<p>look, notice, observe, compare, classify, describe, similar, different, features, sort, group, notice, biggest/smallest, best/worst, Venn diagram, key</p>
	<p>Pupils learn that a pattern is something that acts or presents in a predictable or similar way. Patterns help us to explain and predict how things affect other. Pupils can use observations and ideas to suggest answers to questions</p>	<p>pattern, similar, different, predict, observe, measure</p>
	<p>Pupils need to know what a secondary source is in science and the difference between fact and interpretation. They see simple secondary sources to find answers. Can find information to help from books and computers with help.</p>	<p>secondary, fact, interpretation, source.</p>

Scientific Knowledge Year 1

Seasonal Change (see below) - Best covered with at least one lesson in appropriate season

Topic Title (Concept)	Plants (Plant Life)	Everyday Materials (Substances and Properties)	Animals Including humans (Animals and Humans)
NC Reference	Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. • Identify and describe the basic structure of a variety of common flowering plants, including trees.	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.	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. Identify and name a variety of plants and animals in their habitats, including micro-habitats
Prior learning	<i>(ELG 2022 the Natural World)</i> <i>Explore the natural world around them, making observations and drawing pictures of animals and plants</i> <i>Understand some important processes and changes in the natural world around them, including the seasons</i> Early Years: Know the names of some plants and wildflowers in the school grounds and locality Stages of growth and death of plants Know that seeds need water and warmth to grow Observe the changes that take place to plants and trees in autumn, winter and spring Know the basic parts of a plant, flower, stem, root, and basic parts of a tree, trunk, root, branches	<i>(ELG 2022 the Natural World)</i> <i>Explore the natural world around them, making observations and drawing pictures of animals and plants</i> Early Years: Know the names of some materials that are more likely to float and sink Know that some materials are waterproof, and some are not, and the names of some common materials: wood, paper, plastic, metal, glass, fabric Know that some materials can be mixed to make stronger materials, eg when building a wall	<i>(ELG 2022 the Natural World)</i> <i>Explore the natural world around them, making observations and drawing pictures of animals and plants</i> Early Years: Know the names of animals and baby animals that live on a farm Learn what farm animals need to grow and a simple explanation of their life cycles Learn what a habitat is and what an animal needs from its habitat- food, water, shelter Identify some mini-beasts and their habitats Identify why a woodland is a suitable habitat for some animals. Identify some animals living in a polar habitat and their features. Know how they adapt to survive in cold conditions.
Sticky knowledge	Names of trees and other plants that they see regularly. Identify features of these trees and plants e.g. the shape of the leaves, the colour of the flower/blossom/ fruit. Definition and examples of trees which lost their leaves and those that kept them the whole year • Names of the parts of a plant, recognising that they are not always the same e.g. leaves and stems may not be green. Know and recognise: leaf, flower, blossom, petal, fruit, berry, root, seed, trunk, branch, stem, bark, stalk, bud	Some objects can be made from different materials e.g. plastic, metal or wooden spoons. Materials can be described by their properties e.g. shiny, stretchy, rough etc. Some materials e.g. plastic can be in different forms with very different properties. Know and explain the meaning of: Object, material, wood, plastic, glass, metal, water, rock, brick, paper, fabric, elastic, foil, card/cardboard, rubber, wool, clay, hard, soft, stretchy, stiff, bendy, floppy, waterproof, absorbent, breaks/tears, rough, smooth, shiny, dull, see-through, not see-through	Animals vary in many ways having different structures e.g. wings, tails, ears etc. They also have different skin coverings e.g. scales, feathers, hair . These key features can be used to identify them. Animals eat certain things - some eat other animals, some eat plants, some eat both plants and animals. The habitat provides the basic needs of the animals and plants - shelter, food and water. Within a habitat there are different microhabitats e.g. in a woodland - in the leaf litter, on the bark of trees, on the leaves. These microhabitats have different conditions e.g. light or dark, damp or dry. Humans have key parts in common, but these vary from person to person. Humans (and other animals) find out about the world using their senses. Humans have five senses - sight, touch, taste, hearing and smelling .

			Recognise characteristics of: vertebrate, invertebrate, reptile, fish, amphibian, carnivore, herbivore, parts of the human body associated with senses, main body parts head, neck, arms, elbows, legs, knees, face, ears, eyes, hair, mouth, teeth)
<p>Working scientifically focus and activities</p> <p>(These are suggested WS areas that complement unit - also refer to and highlight WS milestones as cover and ensure all covered over year/phase)</p>	<p><u>Identify Classify and Group</u></p> <p>Sort and group parts of plants and trees using similarities and differences</p> <p>Use simple charts etc. to identify plants and trees in the local area.</p> <p>Use photographs to talk about how plants change over time</p>	<p><u>Comparative and fair testing</u></p> <p>Test the properties of objects e.g. absorbency of cloths, strength of party hats made of different papers, stiffness of paper plates, and waterproofness of shelters.</p> <p><u>Identify Classify and Group</u></p> <p>Classify objects made of one material in different ways e.g. a group of objects made of metal.</p> <p>Classify in different ways one type of object made from a range of materials e.g. a collection of spoons made of different materials.</p> <p>Classify materials based on their properties.</p>	<p><u>Identify Classify and Group</u></p> <p>Classify animals according to what they eat</p> <p>Identify parts of the body associated with senses</p> <p>Group pictures of animals according to their characteristics, play 'What am? I', label and describe pictures.</p> <p>Identify habitats and microhabitats in the school grounds</p> <p><u>Research using secondary sources</u></p> <p>Research the habitats locally and further afield, e.g. an Oak tree, the Arctic</p> <p><u>Seek Patterns</u></p> <p>Investigate whether size of teeth changes what an animals eat, or whether animals in cold climates all have thick fur</p> <p>Make comparisons to seek patterns about body parts and features e.g. "We both have hands, but his are bigger than mine." "These people have brown eyes and these have blue."</p>
<p>End of unit task</p>	<p>Understand plants</p> <p>Create a spotter's guide to school plants using a categorisation key.</p>	<p>Investigate materials</p> <p>Investigate materials suitable for a baby owl nest (or similar investigation) Use tests on materials to demonstrate their findings</p>	<p>Investigate living things</p> <p>Create an environment for woodlice in the forest school area - Prove that this is a successful habitat</p> <p>Or:</p> <p>How can we organise and classify all the animals in the zoo?</p>

Ongoing learning throughout Y1- Seasonal Changes (Plant Life, Living Things & Their Habitats)

<p>Observation over time Observe changes across the four seasons. Observe and describe weather associated with the seasons and how day length varies.</p>	<p>Collect information about the weather regularly throughout the year. • Present this information in tables and charts to compare the weather across the seasons. • Collect information, regularly throughout the year, of features that change with the seasons e.g. plants, animals, humans. • Present this information in different ways to compare the seasons. Gather data about day length regularly throughout the year and present this to compare the seasons.</p>
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