






Year 2 Progression & Coverage Science

Working Scientifically in KS1 - Years 1 and 2

	What pupils should know and be able to do	Key vocabulary
	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.	observe, measure question, find out, answer, predict, 'what do you think will happen', compare, observe, pattern, results, happened, table, measure, record, graph, chart,
	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.	measure, equipment, record, results, observe, compare, describe, compare, similar, different, unit measurements
	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	look, notice, observe, compare, classify, describe, similar, different, features, sort, group, notice, biggest/smallest, best/worst, Venn diagram, key
	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	pattern, similar, different, predict, observe, measure
	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.	secondary, fact, interpretation, source.

Scientific Knowledge Year 2

<p>Topic Title (Concept)</p> <p>NC Reference</p>	<p>Living Things & Their Habitats (Living Things & Their Habitats)</p> <p>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 Identify and name a variety of plants and animals in their habitats, including micro-habitats. 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>Uses of Everyday Materials (Substances and Properties)</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>Plants (Plant life)</p> <p>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> <p>Identify and name a variety of plants and animals in their habitats, including micro-habitats.</p>	<p>Animals Including Humans (Animals and Humans)</p> <p>Know 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>
<p>Prior knowledge</p>	<p>Name a variety of common wild and garden plants, including deciduous and evergreen trees. Identify and describe the basic structure of plants and trees. Identify and 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 a variety of common animals (fish, amphibians, reptiles, birds and mammals).</p>	<p>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: hard, soft, stretchy, stiff, bendy, floppy, waterproof, absorbent, breaks/tears, rough, smooth, shiny, dull, see-through, not see-through</p>	<p>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. Identify and describe functions of: leaf, flower, blossom, petal, fruit, berry, root, seed, trunk, branch, stem, bark, bud</p>	<p>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. 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>Sticky knowledge</p>	<p>All objects are either living, dead or have never been alive. Living things are plants (including seeds) and animals. Animals and plants live in a habitat to which they are suited. The habitat provides the basic needs of the animals and plants - shelter, food and water. Within a habitat there are different micro-habitats. Microhabitats have different conditions. The way that animals obtain their food from plants and other animals can be shown in a food chain. All food chains begin with plant life.</p> <p>Know and explain: life processes, living, dead, never been alive, food chain, food sources, habitat, microhabitat, depend, survive.</p>	<p>A material can be suitable for different purposes and an object can be made of different materials. Objects made of some materials can be changed in shape by bending, stretching, squashing and twisting. For example, clay can be shaped by squashing, stretching, rolling, pressing etc.</p> <p>Know and explain: opaque, transparent and translucent, reflective, non-reflective, flexible, rigid.</p>	<p>Plants may grow from either seeds or bulbs. These then germinate and grow into seedlings which then continue to grow into mature plants. These mature plants may have flowers which then develop into seeds, berries, fruits etc. Seeds and bulbs need to be planted outside at particular times of year and they will germinate and grow at different rates. Some plants are better suited to growing in full sun and some grow better in partial or full shade. Plants also need different amounts of water and space to grow well and stay healthy.</p> <p>Know and describe: light, shade, sun, warm, cool, water, grow, nutrients, germination, seed, berry, fruit.</p>	<p>Animals, including humans, have offspring which grow into adults. In humans and some animals, these offspring will be young. In other animals, such as chickens or insects, there may be eggs laid. Young of some animals do not look like their parents e.g. tadpoles. All animals have the basic needs of feeding, drinking and breathing. They also need the right amounts and types of food and exercise. Good hygiene is also important in preventing infections and illnesses.</p> <p>Know and explain: Offspring, reproduction, growth, young/old stages (examples - chick/hen, baby/child/adult, caterpillar/butterfly), exercise, heartbeat, breathing, hygiene, germs, disease, food types (with examples)</p>

<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> Explore the outside environment, find objects that are living, dead and have never lived. Identify and describe microhabitats in the school grounds</p> <p><u>Pattern Seeking</u> Create simple food chains for a familiar local habitat Create simple food chains from information given e.g. in picture books (Gruffalo etc.)</p> <p><u>Research from secondary sources</u> Research habitats in known climate zones: polar, tropical</p>	<p><u>Identify Classify and Group</u> Sort and classify materials according to properties. Play what am I?</p> <p><u>Comparative and fair testing</u> Test the properties of materials for particular uses e.g. compare the stretchiness of fabrics to select the most appropriate for Elastigirl's costume, test materials for waterproofness to select the most appropriate for a rain hat etc</p>	<p><u>Observe over time</u> Observing a seed as it grows into a plant. Choose one that produces seeds (eg sunflower) so they can see the full lifecycle</p> <p>Research and plan when and how to plant a range of seeds and bulbs. Look after the plants as they grow - thinning, watering etc. Make close observations and measurements of their plants growing from seeds and bulbs.</p>	<p><u>Identify classify and group</u> Match animals to offspring Classify animals into those who give birth and those who lay eggs Classify food according to the Eatwell guide and healthy/ unhealthy choices</p> <p><u>Pattern seeking</u> describe, including using diagrams, the life cycle of some animals, including humans, and their growth to adults</p> <p><u>Comparative and fair testing</u> Explore the effect of exercise on heartbeat</p>
<p>End of unit task</p>	<p><u>Investigate living things</u> Always, sometimes, never? Food chains end with a carnivore</p>	<p><u>Investigate materials</u> Paper is unsuitable for a model boat. Do you agree or disagree? (reason and justify) or is all paper the same? Devise another hypothesis like this and test (eg best running wear material)</p>	<p><u>Investigate plant growth</u> Grow a selection of plants from seeds and bulbs, looking into what each plant needs to grow. Document growth and changes. Check hypothesis eg, all plants need bright sunlight to grow</p>	<p><u>Describe features of healthy lifestyle</u> Create a picture book for younger pupils to demonstrate what they know about keeping healthy.</p>

Ongoing learning throughout Y1/2- Seasonal Changes

<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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Much of work on seasonal changes will be covered within year 1. Please refer to year 1 coverage [Year 1 Seasons Term 4](#) and discuss with year 1 teacher.

Green highlighted text should be covered in year 2. During Y1&2 it is important to discuss seasonal/weather changes throughout the year. This topic presents good opportunities to meet many of the WS criteria so SK can be repeated in year 2 as required. Make use of the pond and local nature reserve/river/cycle track where possible.