

Science KS1 Curriculum Intention

Working scientifically (Year 1 and 2):

- asking simple questions and recognising that they can be answered in different ways
- observing closely, using simple equipment
- performing simple tests
- identifying and classifying
- using their observations and ideas to suggest answers to questions
- gathering and recording data to help in answering questions.

	TOPIC	National Curriculum	Knowledge <i>What do we want the children to know? Personalised to our topics/local area</i>	Vocabulary	Resources:
Year 1	Plants	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.	Growing locally, there will be a vast array of plants which all have specific names. These can be identified by looking at the key characteristics of the plant. Plants have common parts, but they vary between the different types of plants. Some trees keep their leaves all year while other trees drop their leaves during autumn and grow them again during spring.	Leaf, flower, blossom, petal, fruit, berry, root, seed, trunk, branch, stem, bark, stalk, bud Names of trees in the local area Names of garden and wild flowering plants in the local area	https://www.planassessment.com/plants-y1
	Animals including humans	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.	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. 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. These senses are linked to particular parts of the body.	Head, body, eyes, ears, mouth, teeth, leg, tail, wing, claw, fin, scales, feathers, fur, beak, paws, hooves Names of animals experienced first-hand from each vertebrate group Senses – touch, see, smell, taste, hear, fingers (skin), eyes, nose, ear and tongue	https://www.planassessment.com/animals-including-humans-y1

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	<p>Everyday materials</p>	<p>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>	<p>All objects are made of one or more materials. Some objects can be made from different materials e.g. plastic, metal or wooden spoons.</p> <p>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.</p>	<p>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</p>	<p>https://www.planassessment.com/everyday-materials-y1</p>
	<p>Seasonal change</p>	<p>Observe changes across the four seasons. Observe and describe weather associated with the seasons and how day length varies.</p>	<p>In the UK, the day length is longest at mid-summer (about 16 hours) and gets shorter each day until mid-winter (about 8 hours) before getting longer again.</p> <p>The weather also changes with the seasons. In the UK, it is usually colder and rainier in winter, and hotter and dryer in the summer. The change in weather causes many other changes. Some examples are: numbers of minibeasts found outside; seed and plant growth; leaves on trees; and type of clothes worn by people.</p>	<p>Weather (sunny, rainy, windy, snowy etc.) Seasons (winter, summer, spring, autumn) Sun, sunrise, sunset, day length</p>	<p>https://www.planassessment.com/seasonal-changes-y1</p>
<p>Year 2</p>	<p>Living things and 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 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 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</p>	<p>All objects are either living, dead or have never been alive. Living things are plants (including seeds) and animals. Dead things include dead animals and plants and parts of plants and animals that are no longer attached e.g. leaves and twigs, shells, fur, hair and feathers (This is a simplification, but appropriate for Year 2 children.)</p> <p>An object made of wood is classed as dead. Objects made of rock, metal and plastic have never been alive (again ignoring that plastics are made of fossil fuels).</p> <p>Animals and plants live in a habitat to which they are suited, which means that animals have suitable features that help them move and find food and plants have suitable features that help</p>	<p>Living, dead, never been alive, suited, suitable, basic needs, food, food chain, shelter, move, feed. Names of local habitats e.g. pond, woodland etc. Names of micro-habitats e.g. under logs, in bushes etc.</p>	<p>https://www.planassessment.com/living-things-y2</p>

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		<p>different sources of food</p>	<p>them to grow well. The habitat provides the basic needs of the animals and plants – shelter, food and water.</p> <p>Within a habitat there are different micro-habitats e.g. in a woodland – in the leaf litter, on the bark of trees, on the leaves. These micro-habitats have different conditions e.g. light or dark, damp or dry. These conditions affect which plants and animals live there. The plants and animals in a habitat depend on each other for food and shelter etc. The way that animals obtain their food from plants and other animals can be shown in a food chain.</p>		
	Plants	<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>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>As for Year 1 plus light, shade, sun, warm, cool, water, grow, healthy</p>	<p>https://www.planassessment.com/plants-y2</p>
	Animals including humans	<p>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>	<p>Animals, including humans, have offspring which grow into adults. In humans and some animals, these offspring will be young, such as babies or kittens, that grow into adults. In other animals, such as chickens or insects, there may be eggs laid that hatch to young or other stages which then grow to adults. The young of some animals do not look like their parents e.g. tadpoles.</p> <p>All animals, including humans, have the basic needs of feeding, drinking and breathing that must be satisfied in order to survive. To grow into healthy adults, they also need the right amounts and types of food and exercise.</p> <p>Good hygiene is also important in preventing infections and illnesses.</p>	<p>Offspring, reproduction, growth, child, young/old stages (examples - chick/hen, baby/child/adult, caterpillar/butterfly), exercise, heartbeat, breathing, hygiene, germs, disease, food types (examples – meat, fish, vegetables, bread, rice, pasta)</p>	<p>https://www.planassessment.com/animals-including-humans-y2</p>

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	<p>Uses of everyday materials</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>All objects are made of one or more materials that are chosen specifically because they have suitable properties for the task. For example, a water bottle is made of plastic because it is transparent allowing you to see the drink inside and waterproof so that it holds the water. When choosing what to make an object from, the properties needed are compared with the properties of the possible materials, identified through simple tests and classifying activities. A material can be suitable for different purposes and an object can be made of different materials.</p> <p>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. This can be a property of the material or depend on how the material has been processed e.g. thickness.</p>	<p>Names of materials – wood, metal, plastic, glass, brick, rock, paper, cardboard</p> <p>Properties of materials – as for Year 1 plus opaque, transparent and translucent, reflective, non-reflective, flexible, rigid</p> <p>Shape, push/pushing, pull/pulling, twist/twisting, squash/squashing, bend/bending, stretch/stretching</p>	<p>https://www.planassessment.com/uses-of-everyday-materials-y2</p>
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Key Stage One

Key Stage One Enquiry Map



	Observe changes over time	Notice patterns	Grouping and classifying	Fair and comparative tests	Secondary sources
Plants	Make observations of how plants change over a period of time	Make close observations of leaves, seeds, flowers etc. Compare two leaves, seeds, flowers etc When further afield, spot plants that are the same as those in the local area studied regularly, describing the key features that helped them.	Classify leaves, seeds, flowers etc. using a range of characteristics.		
Animals including plants		Make first-hand, close observations of animals from each of the groups. Compare two animals from the same or different groups. Make first-hand close observations of parts of the body e.g. hands, eyes. Compare two people Look for patterns between people e.g. Do people with big hands have big feet?	Classify animals using a range of features. Classify animals according to what they eat. Classify people according to their features.	Investigate human senses e.g. Which part of my body is good for feeling, which is not? Which food/flavours can I identify by taste? Which smells can I match?	
Everyday materials			Classify objects made of one material in different ways e.g. a group of object made of metal. Classify in different ways one type of object made from a range of materials e.g. a collection of spoons made of different materials. Classify materials based on their properties.	Test the properties of objects e.g. absorbency of cloths, strength of party hats made of different papers, stiffness of paper plates, waterproofness of shelters.	

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	Observe changes over time	Notice patterns	Grouping and classifying	Fair and comparative tests	Secondary sources
Seasonal change	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				
Living things and their habitats	Observe animals and plants carefully, drawing and labelling diagrams.		Classify objects found in the local environment.		Create simple food chains from information given e.g. in picture books (Gruffalo etc.).
Plants	Make close observations and measurements of their plants growing from seeds and bulbs.	Make close observations of seeds and bulbs. Make comparisons between plants as they grow.	Classify seeds and bulbs.		Research and plan when and how to plant a range of seeds and bulbs.
Animals including humans	Observe animals growing over a period of time e.g. chicks, caterpillars, a baby.		Classify food in a range of ways, including using the Eatwell Guide .	Explore the effect of exercise on their bodies. Investigate washing hands, using glitter gel.	Ask people questions and use secondary sources to find out about the life cycles of some animals.
Uses of everyday materials			Classify materials.	Test the properties of materials for particular uses e.g. compare the stretchiness of fabrics	

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Other resources:

- **Assessment materials** - <https://pstt.org.uk/resources/curriculum-materials/assessment>
- **CIEC Interactive planning tool (supportive template for planning investigations)**
<https://www.york.ac.uk/ciec/resources/primary/skills-for-science/>
- **CIEC: how stories can support science teaching**
<http://www.ciec.org.uk/resources/pencils-poems-and-princesses.html>
<http://www.ciec.org.uk/primary/new-for-2020-2021.html>
- **Role badges:** <https://www.york.ac.uk/media/ciec/skillsforscience/rolebadges/role-badges.pdf>
- **Primary Science Teaching Trust (PSTT) resources** - <https://pstt.org.uk/resources/curriculum-materials>
- **Scientific vocabulary from STEM-** <https://www.stem.org.uk/elibrary/resource/34636>
- **4-7 years Investigation posters** - <https://www.primarilyscience.co.uk/resource/4-7-years-investigation-posters-a4/>
- **BBC Terrific Science** - <https://www.bbc.co.uk/teach/terrific-scientific>
- **Reach out CPD (FREE)-** <https://www.reachoutcpd.com/>
- **Explorify** - <https://explorify.uk/en/activities>