

## Science Scheme of work - Key Stage One

### Phase One

#### Working Scientifically - Pupils should be taught to:

	<u>Covered</u>
Ask simple questions and, where appropriate, recognise that they can be answered in different ways, with support from a teacher.	
Make close observations to support identification, comparison and noticing change, using simple equipment (magnifying glasses/microscopes).	
Perform simple tests using practical resources to gather evidence in order to answer a question generated with a teacher.	
Perform fair tests which classify, compare, pattern seek enquiries, and make observations over time.	
Identify, using simple secondary sources (such as identification sheets), to name living things. Describe characteristics they used to identify a living thing.	
Classify, using their observations and testing, to compare objects, materials and living things. (Children sort and group these things, identifying their own criteria for sorting with some support).	
Using their observations and ideas to suggest answers to questions with support (e.g. observations they have made, measurements they have taken or information they have gained from secondary sources).	
Gather and record data to help answer questions (children to record observations using photographs, videos, drawings, labelled diagrams, writing or in prepared tables).	
<b>Key vocabulary for working scientifically:</b> question, answer, observe, observing, equipment, identify, classify, sort, group, record (diagram, chart, data), compare/contrast describe, biology, chemistry, physics.	

<p><b>Working scientifically notes and guidance (non-statutory)</b></p> <ul style="list-style-type: none"> <li>○ Pupils in years 1 and 2 should explore the world around them and raise their own questions.</li> <li>○ They should experience different types of scientific enquiries such as practical activities to answer scientific questions.</li> <li>○ They should use simple features to compare objects, materials and living things and, with help, decide how to sort and group them, observe changes over time, and, with guidance, they should begin to notice patterns and relationships.</li> <li>○ They should ask people questions and use simple secondary sources to find answers.</li> <li>○ They should use simple measurements and equipment (for example, hand lenses, egg timers) to gather data, carry out simple tests, record simple data, and talk about what they have found out and how they found it out.</li> <li>○ With help, they should record and communicate their findings in a range of ways and begin to use simple scientific language.</li> </ul>	
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#### Plants - Pupils should be taught to:

	<u>Covered</u>
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.	
Observe the growth of flowers and vegetables that they have planted.	

<b>Key vocabulary for plants:</b> common wild plants, common garden plants, deciduous, evergreen, flowering plants, trees, habitat, growth, plant structures, leaves, flowers, blossoms, petals, fruit, roots, bulb, seed, trunk, branches, stem.	
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<b>Working scientifically (non-statutory notes and guidance)</b>	
<ul style="list-style-type: none"> <li>○ Pupils should use the local environment throughout the year to explore and answer questions about plants growing in their habitat. Where possible, they should observe the growth of flowers and vegetables that they have planted. They should become familiar with common names of flowers, examples of deciduous and evergreen trees, and plant structures (including leaves, flowers (blossom), petals, fruit, roots, bulb, seed, trunk, branches, stem).</li> <li>○ Observe closely, using magnifying glasses, and comparing and contrasting familiar plants</li> <li>○ Describe how to group different plants</li> <li>○ Draw diagrams showing the parts of different plants, including trees</li> <li>○ Keep records of how plants change over time (e.g. leaves falling off trees and buds opening)</li> </ul>	

### Animals including humans - Pupils should be taught to:

	<u>Covered</u>
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.	
<b>Key vocabulary for animals:</b> common animals (fish, amphibians, reptiles, birds, mammals, pets), carnivores, herbivores, omnivores, meat and plants, habitat, body parts (head, neck, arms, elbows, legs, knees, face, eyes, ears, mouth, teeth).	

<b>Working scientifically (non-statutory notes and guidance)</b>	
<ul style="list-style-type: none"> <li>○ Use observations to compare and contrast animals at first hand, or through videos and photographs.</li> <li>○ Group animals according to what they eat.</li> <li>○ Use their senses to compare different textures, sounds and smells.</li> </ul>	

### Seasonal changes - Pupils should be taught to:

	<u>Covered</u>
Observe changes across the four seasons.	
Observe and describe weather associated with the seasons and how day length varies.	
<b>Key vocabulary for seasonal changes:</b> summer, winter, autumn, spring, day, daytime, weather, wind, rain, snow, hail, sleet, fog, sun, hot, warm, cold.	

<b>Working scientifically (non-statutory notes and guidance)</b>	
<ul style="list-style-type: none"> <li>○ Making tables and charts about the weather.</li> <li>○ Making a display/record of what happens in the world around them (including day length) as the seasons change.</li> </ul>	

## Use of everyday materials - Pupils should be taught to:

		<u>Covered</u>
	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.	
	<b>Key vocabulary for everyday materials:</b> wood, plastic, glass, metal, water, rock, brick, paper, fabrics, elastic, foil, properties, hard/soft, stretchy/stiff, shiny/dull, rough/smooth, bendy/not bendy, waterproof/not waterproof, absorbent/not absorbent, opaque/transparent.	

	<b>Working scientifically (non-statutory notes and guidance)</b> <ul style="list-style-type: none"><li>○ Perform simple tests to explore questions such as 'what is the best material for...'<ul style="list-style-type: none"><li>- Making an umbrella?</li><li>- Lining a dog basket?</li><li>- For curtains?</li><li>- For a bookshelf?</li><li>- For a gymnast's leotard?</li></ul></li></ul>	
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## Phase Two

### Working Scientifically - Pupils should be taught to:

	<u>Covered</u>
Ask simple questions and, where appropriate, recognise that they can be answered in different ways, with support from a teacher and independently with resources.	
Make close observations to support identification, comparison and noticing change, using simple equipment (magnifying glasses/microscopes) to make observations.	
Perform simple tests using practical resources to gather evidence in order to answer a question generated with a teacher or by themselves.	
Perform fair tests which classify, compare, pattern seek enquiries, and make observations over time with more independence.	
Identify, using simple secondary sources (such as more detailed identification sheets), to name living things. Describe in greater details the characteristics they used to identify a living thing.	
Classify, using their observations and testing, to compare objects, materials and living things. (Children sort and group these things, identifying their own criteria for sorting).	
Using their observations and ideas to suggest answers to questions (e.g. observations they have made, measurements they have taken or information they have gained from secondary sources).	
<b>Key vocabulary for working scientifically:</b> question, answer, observe, observing, equipment, identify, classify, sort, group, record (diagram, chart, data), compare/contrast describe, biology, chemistry, physics.	

### Plants - Pupils should be taught to:

	<u>Covered</u>
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	
<b>Key vocabulary for plants:</b> common, wild plants, deciduous, evergreen, plant, leaf, root, leaves, bud, flowers, blossom, petals, root, stem, tree, deciduous, evergreen, trunk, branches, fruit, vegetables, bulb, seed, water, light, suitable, temperature, grow, healthy, germination.	

<b>Working scientifically (non-statutory notes and guidance)</b> <ul style="list-style-type: none"> <li>○ Observe and record, with some accuracy, the growth of a variety of plants as they change over time from seed or bulb.</li> <li>○ Observe similar plants at different stages of growth.</li> <li>○ Setting up a comparative test to show that plants need light and water to stay healthy.</li> </ul>	
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### Animals including humans - Pupils should be taught to:

	<u>Covered</u>
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 of human's exercise, eating the right amounts of different types of food, and hygiene.	
<b>Key vocabulary for animals including humans:</b> offspring, grow, adults, survival, water, food, air, exercise, hygiene, nutrition, egg/chick/chicken, spawn/tadpole/frog, egg/caterpillar/pupa/butterfly, lamb/sheep, baby/toddler/child/teenager/adult	

<b>Working scientifically (non-statutory notes and guidance)</b> <ul style="list-style-type: none"> <li>○ Observe (through video or first-hand) and measure how different animals, including humans, grow.</li> </ul>	
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	<ul style="list-style-type: none"> <li>○ Ask questions about what things animals need for survival and what humans needs to stay healthy.</li> <li>○ Suggest ways to find answers to their questions.</li> </ul>	
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### Living things and their habitat - Pupils should be taught to:

		<u>Covered</u>
	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 different sources of food.	
	<b>Key vocabulary for living things and their habitat:</b> living, dead, never alive, habitats, micro habitats, food, food chain, sun, grass, cow, human, alive, healthy, familiar habitats/ less familiar, shelter, sea shore, woodland, ocean, rainforest, conditions, hot/warm/cold, dry/damp/wet, bright/shade/dark.	

	<p><b>Working scientifically (non-statutory notes and guidance)</b></p> <ul style="list-style-type: none"> <li>○ Sort and classify things according to whether they are living, dead or were never alive and record findings using charts.</li> <li>○ Describe how they decided where to place things.</li> <li>○ Explore questions such as ‘is a flame alive?’, ‘Is a deciduous tree dead in winter?’ and talk about ways of answering these questions.</li> <li>○ Children could construct a simple food chain that includes humans (e.g. grass, cow, human).</li> <li>○ Describe the conditions in different habitats and micro-habitats (under log, stony path, under bushes) and find out how the conditions affect the number and type(s) of plants and animals that live there.</li> </ul>	
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### Use of everyday materials - Pupils should be taught to:

		<u>Covered</u>
	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.	
	<b>Key vocabulary for use of everyday materials:</b> wood (matches, floors, telegraph poles), metal (coins, cans, cars, table legs), plastic, glass, brick, rock, paper, cardboard, squashing, bending, twisting, stretching, suitable/unsuitable, purpose.	

	<p><b>Working scientifically (non-statutory notes and guidance)</b></p> <ul style="list-style-type: none"> <li>○ Compare the uses of everyday materials in and around school with materials found in other places (at home, the journey to school, on visits, in stories/rhymes/songs).</li> <li>○ Observe closely identify and classify the uses of materials and record their observations.</li> </ul>	
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