

How children learn science at Key Stage 1

The principal focus of science teaching in Key Stage 1 is to enable pupils to experience and observe phenomena, looking more closely at the natural and humanly-constructed world around them. They should be encouraged to be curious and ask questions about what they notice.

Cycle A – 2018/2019

Topics	Working Scientifically	Objectives Covered
Animals Including Humans (1)	Pupils will work scientifically by: using their observations to compare and contrast animals at first hand or through videos and photographs, describing how they identify and group them; grouping animals according to what they eat; and using their senses to compare different textures, sounds and smells.	<ul style="list-style-type: none">• Identify and name a variety of common animals that are birds, fish, amphibians, reptiles 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 (birds, fish, amphibians, reptiles and mammals, and including pets).• Identify, name draw and label the basic parts of the human body and say which parts of the body is associated with each sense.
Everyday Materials (1)	Pupils will work scientifically by: performing simple tests to explore questions, for example: 'What is the best material for an umbrella? ...for lining a dog basket? ...for curtains? ...for a bookshelf? ...for a gymnast's leotard?'	<ul style="list-style-type: none">• Distinguish between an object and the material from which it is made.• Identify and name a variety of everyday materials, including wood, plastic, glass, water and rock.• Describe the simple physical properties of a variety of everyday materials.

		<ul style="list-style-type: none"> • Compare and group together a variety of everyday materials on the basis of their physical properties.
Animals Including Humans (2)	<p>Pupils will work scientifically by: observing, through video or first-hand observation and measurement, how different animals, including humans, grow; asking questions about what things animals need for survival and what humans need to stay healthy; and suggesting ways to find answers to their questions</p>	<ul style="list-style-type: none"> • 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.
Uses of Everyday Materials (2)	<p>Pupils will work scientifically by: comparing the uses of everyday materials in and around the school with materials found in other places (at home, the journey to school, on visits, and in stories, rhymes and songs); observing closely, identifying and classifying the uses of different materials, and recording their observations.</p>	<ul style="list-style-type: none"> • 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.

Cycle B – 2019/ 2020

Topics	Working Scientifically	Objectives Covered
Plants (1)	Pupils will work scientifically by: observing closely, perhaps using magnifying glasses, and comparing and contrasting familiar plants; describing how they were able to identify and group them, and drawing diagrams showing the parts of different plants including trees. Pupils might keep records of how plants have changed over time, for example the leaves falling off trees and buds opening; and compare and contrast what they have found out about different plants.	<ul style="list-style-type: none">• Identify and name a variety of common plants, including garden plants, wild plants and trees, and those classified as deciduous and evergreen• Identify and describe the basic structure of a variety of common plants including roots, stem/trunk, leaves and flowers.
Seasonal Change (1)	Pupils will work scientifically by: making tables and charts about the weather; and making displays of what happens in the world around them, including day length, as the seasons change.	<ul style="list-style-type: none">• Observe changes across the four seasons• Observe and describe weather associated with the seasons and how day length varies.
Living Things & Their Habitats (2)	Pupils will work scientifically by: sorting and classifying things according to whether they are living, dead or were never alive, and recording their findings using charts. They should describe how they decided where to place things, exploring questions for example: 'Is a flame alive? Is a deciduous tree dead in winter?' and talk about ways of answering their questions. They could construct a simple food chain that includes humans (e.g. grass, cow, human). They could	<ul style="list-style-type: none">• 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.

	describe the conditions in different habitats and micro-habitats (under log, on stony path, under bushes) and find out how the conditions affect the number and type(s) of plants and animals that live there.	<ul style="list-style-type: none"> • 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.
Plants (2)	Pupils will work scientifically by: observing and recording, with some accuracy, the growth of a variety of plants as they change over time from a seed or bulb, or observing similar plants at different stages of growth; setting up a comparative test to show that plants need light and water to stay healthy.	<ul style="list-style-type: none"> • 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.

Working Scientifically

The following opportunities for working scientifically will be provided across Years 1 and 2 so that the expectations in the programme of study can be met by the end of Year 2. Pupils are **not** expected to cover each aspect for every area of study.

Asking questions. Children should ask simple questions and recognise that they can be answered in different ways.

Scientific enquiries. They should be able to do the following types of enquiry:

- Observations. They should observe closely, using simple equipment.

- Simple tests
- Identifying and classifying
- Secondary sources. They should use simple secondary sources to find answers.

Recording. They should gather and record data to suggest answers to their questions. With help, they should record in a range of ways and begin to use simple scientific language.

Analysing observations. They should use their observations and ideas to suggest answers to questions. They should notice patterns and relationships in their observations. They should talk about what they have found out and how they found out.