



SCIENCE

EYFS

Knowledge, Skills and Understanding breakdown for Science

The relevant statements for science are taken from the following areas of learning:

- Communication and Language
- Personal, Social and Emotional Development
- Understanding the World

Early Learning Goals:

Communication and Language (Listening, Attention and Understanding)

Children make comments about what they have heard and ask questions to clarify their understanding. They describe what they see, hear and feel whilst outside. They make observations and communicate their findings by drawing pictures of animals and plants, including those found in the natural environment around the school.

Through stories and sharing non-fiction materials, children learn new vocabulary and have opportunities to ask questions, to find out more and to check what has been said to them. They have opportunities to articulate their ideas and thoughts in well-formed sentences, to use talk to help work out problems and organise thinking and activities, and to explain how things work and why they might happen.

Personal, Social and Emotional Development (Managing Self)

Children begin to see the need to manage their own basic hygiene and personal needs from an increasingly scientific viewpoint, such as dressing (the need to stay warm in a range of conditions), going to the toilet (a developing awareness that nutrition/excretion are a characteristic of living organisms) and understanding the importance of healthy food choices.

Children learn about the different factors that support their overall health and wellbeing, such as regular physical activity, healthy eating, toothbrushing, the importance of sleep and how to keeping safe in and out of school (internet safety/road safety).

Understanding the World (The Natural World)

Children have opportunities to explore the natural world around them. They use the schools grounds to explore their immediate, local environment and they learn to recognise that there are some environments that are different to the one in which they live. They learn to name and describe some common plants and animals, including mini-beasts. They have opportunities to share their understanding of other environments by talking about their experiences of travel, and by sharing non-fiction books and stories. By drawing on their experiences and what has been read in class, they learn about some similarities and differences between the natural world around them and contrasting environments.

The school grounds provide opportunities to learn about some important processes and changes in the natural world around them, including learning about the seasons and changing states of matter. Children are introduced to the language of scientific enquiry by conducting simple experiments, such as exploring which objects float or sink, or investigating what happens when ice melts.

Challenge

Year EYFS	Children are able to accurately describe the natural world using relevant scientific vocabulary, drawing on knowledge gained through their own experiences and from their own research using sources such as books, the internet and other media.	Children are able to name a common plants and animals from their local and wider environment, e.g identifying an oak or a magpie, rather than just describing them as a tree or bird.	Children confidently make accurate comparisons of animals and plants, highlighting details such as the number of legs and use this as a basis to classify them (i.e. being able to distinguish between an arachnid and an insect or a conifer and deciduous tree)
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SCIENCE

Year 1

Knowledge, Skills and Understanding breakdown for Science

Working Scientifically	Biology	Materials
<p>During years 1 and 2, pupils should be taught to use the following practical scientific methods, processes and skills:</p> <ul style="list-style-type: none"> • Asking simple questions and recognising that they can be answered in different ways. • Performing simple tests by gathering and recording data to help in answering questions • Using their observations and ideas to suggest answers to questions • Observing closely, using simple equipment. • Identifying similarities and differences between different materials, or between different plants and animals, and use these as a basis for suggesting ways to classify or group them. 	<p><u>Seasonal Change</u></p> <ul style="list-style-type: none"> • Observe and describe weather associated with the seasons and how day length varies. <p><u>Animals, including humans</u></p> <ul style="list-style-type: none"> • Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals • Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets) • 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. <p><u>Plants</u></p> <ul style="list-style-type: none"> • 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. 	<p><u>Everyday Materials</u></p> <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, 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

Challenge

Year 1	<p>Demonstrate an ability to work methodically and carefully when conducting an experiment.</p> <p>Begin to recognise what makes a fair test.</p>	<ul style="list-style-type: none"> • Know that the climate and seasons are experienced differently around the world and that the location can also impact on daylength. Children may relate this to what they know about the Earth's tilt and rotation. 	<ul style="list-style-type: none"> • Identify plants and animals in their own local environment and contrast these with plants and animals found in other parts of the world. 	<ul style="list-style-type: none"> • Understand that the properties of a materials can be dependent on shape and form (e.g. that a block of aluminium will behave differently to a sheet of foil)
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SCIENCE

Year 2

Knowledge, Skills and Understanding breakdown for Science

Working Scientifically	Biology	Materials
<p>During years 1 and 2, pupils should be taught to use the following practical scientific methods, processes and skills:</p> <ul style="list-style-type: none"> • Asking simple questions and recognising that they can be answered in different ways. • Performing simple tests by gathering and recording data to help in answering questions • Using their observations and ideas to suggest answers to questions • Observing closely, using simple equipment. • Identifying similarities and differences between different materials, or between different plants and animals, and use these as a basis for suggesting ways to classify or group them. 	<p><u>Habitats</u></p> <ul style="list-style-type: none"> • 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 • Explore and compare the differences between things that are living, dead, and things that have never been alive. <p><u>Animals, including humans</u></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 and eating the right amounts of different types of food, and hygiene. <p><u>Plants</u></p> <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. 	<p><u>Everyday Materials</u></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.

Challenge

Year 2	<p>Evaluate the design of an experiment and make suggestions for how it could be improved.</p> <p>Identify when an experiment is a fair test, or suggest a way to redesign an experiment to make it a fair test.</p>	<p>Confidently link an animal's physiology to its lifestyle, diet and habitat, using relevant scientific vocabulary to explain their thinking and compare different species living in different habitats.</p>	<p>Recognise that plants are not limited in form to that of a stereotypical tree or flower, and that plants are found in a wide range of habitats.</p>	<ul style="list-style-type: none"> • Understand that objects can be made from a mixture of different elements or materials • Recognise that matter can exist in different states (liquid, gas, solid) and apply these terms to materials that they know about (water, glass, rock etc)
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