



Subject Leader: Science – Where your subject sits in EYFS

In planning and guiding what children learn, practitioners must reflect on the different rates at which children are developing and adjust their practice appropriately, referring to the **Characteristics of Effective Teaching and Learning**. These are: **playing and exploring** – children investigate and experience things, and ‘have a go’; **active learning** – children concentrate and keep on trying if they encounter difficulties, and enjoy their achievements for their own sake; **creating and thinking critically** – children have and develop their own ideas, make links between ideas, and develop strategies for doing things. In addition, the **Prime Areas of Learning** (Personal, Social and Emotional Development, Communication and Language and Physical Development) underpin and are an integral part of children’s learning in all areas.

EYFS Understanding the World Educational Programme (Statutory)

Understanding the world involves guiding children to make sense of their physical world and their community. The frequency and range of children’s personal experiences increases their knowledge and sense of the world around them – from visiting parks, libraries and museums to meeting important members of society such as police officers, nurses and firefighters. In addition, listening to a broad selection of stories, nonfiction, rhymes and poems will foster their understanding of our culturally, socially, technologically and ecologically diverse world. As well as building important knowledge, this extends their familiarity with words that support understanding across domains. Enriching and widening children’s vocabulary will support later reading comprehension.

EYFS Science Skills

Create opportunities to discuss how we care for the natural world around us. Offer opportunities to sing songs and join in with rhymes and poems about the natural world. After close observation, draw pictures of the natural world, including animals and plants. Name and describe some plants and animals children are likely to see, encouraging children to recognise familiar plants and animals whilst outside.

Teach children about a range of contrasting environments within both their local and national region. Model the vocabulary needed to name specific natural features of the world. Share non-fiction texts that offer an insight into contrasting environments. Listen to how children communicate their understanding of their own environment and contrasting environments through conversation and in play.

Observe and interact with natural processes, such as ice melting, light travelling through transparent material, an object casting a shadow, a magnet attracting an object

Observe and interact with natural processes, such as a sound causing a vibration, light travelling through transparent material, an object casting a shadow, a magnet attracting an object and a boat floating on water.

EYFS SCIENCE KNOWLEDGE

Nursery

Reception

Throughout the year to know and identify seasonal change

To know about family structures and be able to talk about who is part of their family.

(Au1)

To know the difference between farm animals and wild animals.

(Au2)

To be able to categorise animals by their characteristics. **(Au2)**

To know that every living being has a life cycle and they change in shape and size as they grow.

(Sp2)

To know that living beings follow a similar growth pattern and make comparisons. **(Sp2)**

To know that different creatures live in different places based on their characteristics, e.g. farm animals can live around people, however wild animals can be dangerous so we have to be careful. **(Su1)**

Wild animals live in forests/jungles/ safari and sometimes zoo's or aquariums.

(Su1)

Throughout the year to know and identify seasonal change

To know the names of different body parts.

To know that in Autumn the leaves fall off the trees and it gets colder

To know that some animals are nocturnal.

To know that some animals hibernate

To know how to ask questions about the world through using my senses - feeling, hearing, seeing

To know some important processes and changes in the natural world around them, including the seasons and changing states of matter.

To know the difference between light and darkness

To know why shadows are created

To know that humans and other animals can grow.

To know that materials can be changed by cooking or adding fluids

To know some important processes and changes in the natural world around them, including the seasons and changing states of matter.

To know environments vary from one another.

To know that some materials are better at floating than others

To know that in Spring New life occurs (blossom/a range of flowers grow)

To know the features of a snail and other minibeasts

To know where minibeasts and snails can be found

To know that different animals live in different habitats according to their needs

To know how to care for growing plants.

To know about growth, decay and changes over time

To know some similarities and differences in relation to living things.

To know that different animals live in different habitats according to their needs

To select appropriate materials according to their properties.

To know that different materials are better suited for a purpose and why
To know that some things in the world are man-made, and some things are natural.

To know I need to respect and care for the natural environment and all living things.

Scientific Enquiry (also linked to CoEL)

- Provide children with have frequent opportunities for outdoor play and exploration.
- Encourage interactions with the outdoors to foster curiosity and give children freedom to touch, smell and hear the natural world around them during hands-on experiences.
- Encourage focused observation of the natural world.
- Listen to children describing and commenting on things they have seen whilst outside, including plants and animals.
- Encourage positive interaction with the outside world, offering children a chance to take supported risks, appropriate to themselves and the environment within which they are in

Development Matters: (Non-Statutory Guidance)

- Explore the natural world around them.
- Describe what they see, hear and feel whilst outside.
- Recognise some environments that are different from the one in which they live.
- Understand the effect of changing seasons on the natural world around them.

Assessment

- Can children talk about and draw what they can see?
- Can children describe their environment and comment on contrasting environments from books?
- Can children describe what changes in each season?

Vocabulary

Science, experiment, investigation, test, why, senses, world, plants (leaf, stem, root, flower, seeds), animals, humans, materials, see through, push/pull (linked to magnets), natural, change, grow, decay, rot, environment

ELG: People, Culture and Communities (Statutory)

Children at the expected level of development will:

- Explore the natural world around them, making observations and drawing pictures of animals and plants
- Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class
- Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter

KS1 Science

Working Scientifically:

During years 1 and 2, pupils should be taught to use the following scientific methods, processes and skills through the teaching of the programme of study content:

- 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

National Curriculum for Science - Year 1

Plants

In year 1, children should use their local environment to explore and answer questions about plants that grow in their habitat.

The national curriculum states that children should be taught to:

- 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 tree

Animals, Including Humans

Again using their local environment and through their own observations, the primary science curriculum states that children should be taught to:

- 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

Everyday Materials

In year 1, the national curriculum for science states that pupils should explore, name, discuss and raise and answer questions about everyday materials, so they become more familiar with them.

Pupils should be taught to:

- 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

Seasonal Changes

In year 1, as part of the seasonal changes topic, children will be taught to:

- observe changes across the 4 seasons
- observe and describe weather associated with the seasons and how day length varies

National Curriculum for Science Year 2

Living Things and Their Habitats

In Year 2, children will be introduced to the idea that all living things have certain characteristics that are essential in keeping them alive. Children should be taught to:

- 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.

Plants

In year 2, children will develop their knowledge and understanding of plants. The national curriculum for science states that pupils should:

- 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

Animals, Including Humans

The primary science curriculum states that, in year 2, children should be taught to:

- notice that animals, including humans, have offspring which grow into adults
- find out about 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

In year 2, children will develop their understanding of everyday materials by learning about the uses of everyday materials. The national curriculum states children should be taught to:

- 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