



Science - Progression Map

Area of Learning (EYFS) & National Curriculum Strand (NC)

Science at Foundation stage is covered mainly in 'Understanding of the World', 'Communication and Language', and 'Personal, Social and Emotional Development'. It is taught through focus tasks and continuous provision, both inside and outside. Activities encourage exploration, problem-solving, observation, prediction, critical thinking, decision-making, and discussion about the surrounding world.

At a Glance

Early Years

Exploration, observation, and discussion about the natural world, understanding cause and effect, and basic health practices.

Year 1

Asking questions, simple investigations, identifying living things and materials, observing seasonal changes, and basic human anatomy.

Year 2

Posing questions, guided investigations, understanding life cycles, habitats, material suitability, and healthy living.

Working Scientifically

During years 1 and 2, pupils will use the following practical scientific methods, processes, and skills through the programme of study content:

- asking simple questions and recognising varied answers
- observing closely, using simple equipment, and performing simple tests
- identifying and classifying
- using observations and ideas to suggest answers to questions
- gathering and recording data to aid in answering questions

Skills Progression

Scientists in Early Years will...

Nursery

- Understand 'why' questions, such as: "Why do you think the caterpillar got so fat?"

Reception

- Describe events in some detail.
- Use talk to solve problems, organise thinking, explain how things work, and predict occurrences.
- Use new vocabulary in different contexts.

ELG – Listening, Attention and Understanding

- Make comments on what they've heard and ask clarifying questions.

Scientists in Year 1 will...

- pose and answer questions, and make predictions about familiar objects and events
- participate in guided investigations to explore and answer questions

- use informal measurements to collect and record observations, using digital technologies as appropriate
- use a range of measures to sort information, including drawings and provided tables

- compare observations with predictions and those of others through discussion
- represent and communicate observations in various ways.

Scientists in Year 2 will...

- pose and respond to questions, and make predictions about familiar objects and events.
- participate in guided investigations to explore and answer questions

- use informal measurements to collect and record observations, including drawings and provided tables
- compare observations with predictions and those of others through discussion.

- represent and communicate observations in various ways.

Plants

Key Learning

Scientists in the Early Years will...

Nursery - Understanding the World

- Talk about observations, using wider vocabulary.
- Explore how things work.
- Plant seeds and care for growing plants.
- Begin to understand respecting and caring for the natural environment.
- Understand the key features of plant and animal life cycles.

Reception - Understanding the World

- Explore the natural world.
- Describe outdoor sights, sounds, and feelings.
- Recognise environments different from their own.
- Understand the effect of changing seasons on the natural world.

ELG

- Explore the natural world, observing and drawing animals and plants.

Scientists in Year 1 will...

Knowledge

- Identify and name common wild and garden plants, including deciduous and evergreen trees.
- Identify and describe the basic structure of common flowering plants (wild and garden flowers), including trees.

Locally growing plants have specific names and can be identified by their key characteristics. Plants have common parts that vary between types. Some trees are evergreen, while others are deciduous.

Scientists in Year 2 will...

Knowledge

- Observe and describe how seeds and bulbs grow into mature plants.
- Find and describe how plants need water, light, and suitable temperature to grow and stay healthy.

Key Vocabulary & Outcomes

Early Years

Key Vocabulary: Grow, soil, seed, water, flower, plant

Outcomes: Children will know plants and trees are ubiquitous and vary in size and shape. They will show awareness that a seed grows into a plant and can describe stages of growth. They will understand plant needs, experience growing a plant from seed, and be aware of different plant types from seeds. They will know fruits and vegetables grow on plants/trees.

Year 1

Key Vocabulary: Seed, soil, water, sunlight, shoot, roots, leaf, grow, stem, flower. Leaves, flower, blossom, trunk, fruit, roots, berry, seed, petal, branch, stem, bark, stalk, bud, deciduous, evergreen. Names of garden and wild flowering plants/trees in the local area.

Outcomes: Can name regularly seen trees and plants. Can describe their key features (e.g., leaf shape, flower colour). Can identify deciduous and evergreen trees. Can point to and name plant parts, recognising variations (e.g., leaves and stems).

Year 2

Key Vocabulary: As for Year 1 plus - light, shade, sun, warm, cool, water, grow, healthy

Outcomes: Can describe how plants grown from seeds and bulbs develop over time. Can identify plants that thrive in different conditions.

Animals Including Humans

Key Learning

Scientists in the Early Years will...

Nursery - Understanding the World

- Talk about observations, using wide vocabulary.
- Begin to understand respecting and caring for all living things.
- Begin to understand their life-story and family history.
- Make healthy choices about food, drink, activity, and tooth brushing.

Reception - Understanding the World

- Understand the key features of plant and animal life cycles.
- Describe outdoor sights, sounds, and feelings.
- Recognise environments different from their own.
- Understand the effect of changing seasons on the natural world.

ELG

- Explore the natural world, observing and drawing animals.
- Know similarities and differences between their natural world and contrasting environments, drawing on experiences and class readings.

Personal, Social and Emotional Development

- Know and discuss factors supporting overall health and wellbeing: regular exercise, healthy eating, tooth brushing, sensible screen time, good sleep, and pedestrian safety.

ELG

- Manage basic hygiene and personal needs, including dressing, toileting, and understanding healthy food choices.

Scientists in Year 1 will...

Knowledge

- Identify and name common animals: fish, amphibians, reptiles, birds, and mammals.
- Identify and name common carnivores, herbivores, and omnivores.
- Describe and compare structures of common animals (fish, amphibians, reptiles, birds, mammals, including pets).
- Identify, name, draw, and label basic human body parts and associate senses with them.

Humans have common body parts that vary individually. Humans and animals use five senses (sight, touch, hearing, taste, smell) to explore the world, linked to specific body parts.

Scientists in Year 2 will...

Knowledge

- Notice that animals, including humans, have offspring that grow into adults.
- Find out about and describe basic animal and human needs for survival (water, food, air).
- Describe the importance of exercise for humans, eating proper food amounts, and hygiene.

Animals and humans have offspring. For humans and some animals, offspring are young (babies, kittens). Other animals (chickens, insects) lay eggs or have different stages that grow into adults; some young may not resemble parents (e.g., tadpoles). All animals, including humans, have basic needs (feeding, drinking, breathing) for survival and healthy growth. They also require proper food amounts, exercise, and good hygiene to prevent illness.

Key Vocabulary & Outcomes

Early Years

Key Vocabulary: Feel, touch, smell, taste, hear, soft, hard, loud, quiet, animal names as appropriate. Clean, wash, hygiene, brush, toothpaste/brush, being safe, road, safety. Feel, touch, soft/hard, rough, smooth, slippery, slimy, smell, taste, like, dislike, taste, hear, loud/quiet. Fruit, vegetable, healthy, animal names as appropriate, hygiene, safety, road safety, pedestrian.

Outcomes: Through sensory exploration, children will describe feelings/tastes/sounds/looks/smells. They will show awareness of animal needs and how to care for them. Children will describe healthy practices, including eating fruits and vegetables and exercising. They will name animals and identify features/body parts. They will use senses to explain characteristics with appropriate vocabulary.

Year 1

Key Vocabulary: Head, body, ear, eyes, mouth, teeth, leg, tail, wing, claw, find, scales, feathers, fur, beak, paws, hooves, carnivore, herbivore omnivore, reptiles, mammals, sense, touch, see, smell, taste, hear, fingers, (skin) eyes, nose, ear and tongue.

Outcomes: Animals - Can name a range of animals from vertebrate groups and describe their key features. Can label features on pictures/diagrams and write descriptively or riddles about animals. Can describe what various animals eat. Humans - Can play and lead 'Simon Says'. Can follow instructions involving body parts in PE. Can label body parts on pictures and diagrams and explore objects using different senses.

Year 2

Key Vocabulary: Offspring, reproduction, growth, child, young, old, stages examples, chicken, hen, baby, child, adult, caterpillar, butterfly. Exercise, heartbeat, breathing, hygiene, germs, disease, food, types sample, meat, fish, vegetables, bread, rice pasta.

Outcomes: Can describe how animals, including humans, have offspring that grow into adults, using appropriate stage names. Can state basic animal and human needs for survival. Can state the importance of exercise, proper nutrition, and hygiene for humans. Can name foods correctly within the Eat Well guide.

Living Things and Their Habitats

Year 2 only

Key Learning

Scientists in Year 2 will...

Knowledge

- Explore and compare living, dead, and never alive things.
- Identify that most living things suit their habitats and describe how different habitats provide for basic needs of animals and plants, and how they depend on each other.
- Identify and name a variety of plants and animals in their habitat, including micro-habitats.
- Describe how animals obtain food from plants and other animals using a simple food chain, identifying different food sources.

Objects are categorised as living (plants, animals, seeds), dead (dead animals/plants, unattached parts like twigs, leaves, shells), or never alive (rock, metal, plastic). Living things are suited to their habitats, possessing features that aid movement, food finding, and growth. Habitats provide basic needs: shelter, food, water. Micro-habitats (e.g., woodland, tree bark, leaf litter) have varying conditions (light/dark, damp/dry) that influence their plant and animal populations. Trees and animals within a habitat are interdependent for food and shelter. Food chains illustrate how animals get food from plants and other animals.

Key Vocabulary & Outcomes

Key Vocabulary

Living, dead, never been alive, suited, suitable, basic needs, food, pond, shelter, move, feed, names of local habitats, e.g., pond, woodland. Names of micro habitats e.g., bushes, etc.

Outcomes

Can find and classify items outside as living, dead, or never alive. Can name plants and animals from studied habitats and micro-habitats. Can discuss how animal and plant features suit their habitat. Can explain animal diets and how plants provide shelter. Can construct a food chain starting with a plant, with arrows indicating correct direction.

Materials

Key Learning

Scientists in the Early Years will...

Nursery - Understanding the World

- Use all senses to explore natural materials.
- Explore material collections with similar/different properties.
- Discuss material differences and observed changes.
- Explore and discuss different forces they can feel.

Reception - Understanding the World

- Learn new vocabulary.
- Explore the natural world.

ELG

- Understand important natural processes and changes, including seasons and states of matter.

Scientists in Year 1 will...

Knowledge

- Distinguish between an object and its material.
- Identify and name everyday materials: wood, plastic, glass, metal, water, rock.
- Describe simple physical properties of various everyday materials.
- Compare and group everyday materials based on simple physical properties.

All objects are made of one or more materials; some objects can be made from different materials (e.g., plastic, metal, or wood spoons). Materials have properties like shiny, dull, rough, smooth. Some materials exist in different forms with varied properties.

Scientists in Year 2 will...

Knowledge

- Identify and compare the suitability of everyday materials (wood, metal, plastic, glass, brick, rock, paper, cardboard) for specific uses.
- Find out how solid object shapes can change by squashing, bending, twisting, and stretching.

Objects are made of materials chosen for suitable properties. For example, a window is transparent for visibility. A material can serve multiple purposes, and an object can be made from different materials. Some materials, like clay, can have their shapes changed by squashing, stretching, and rolling.

Key Vocabulary & Outcomes

Early Years

Key Vocabulary: Feel, soft, hard, wet, dry, warm, cold, loud, quiet. Water, ice, freeze, melt, heat, warm, cold, float, sink, heavy, light, hard, soft, smooth, metal, magnetic

Outcomes: Children will describe how something feels/tastes/sounds/looks/smells through sensory exploration. They will discuss material differences using appropriate vocabulary. Children will explain how ice melts, water freezes, and what happens to chocolate when heated. They will demonstrate awareness of material properties when choosing materials for tasks (e.g., floating device, magnet use) and explain their choices.

Year 1

Key Vocabulary: Objects, material, wood, plastic, glass, metal, water, rock, brick, paper, fabric, elastic, foil, card, cardboard, rubber, wool, clay. Properties, hard, soft, stretch, stiff, bendy, floppy, waterproof, absorbent, break, tears, rough, shiny, smooth. Dull, see a picture or diagram of an object made of different materials. Can describe the properties of various materials.

Year 2

Key Vocabulary: Names of materials, increased range from Year 1. Properties of materials as for Year 1 plus, opaque, transparent, translucent, reflective, non-reflective, flexible, rigid, shape, push/pushing, pull/pulling, squashing/squashing/bend/bending, stretch, stretching.

Outcomes: Can name an object, its material, identify properties, and link properties to specific uses. Can label pictures/diagrams of objects made from different materials. Can identify material properties needed for purpose (e.g., rubber car tyre). While changing object shapes, can describe actions used (e.g., flexible, stretchy). Can recognise that a material may come in different forms with varied properties.

Seasonal Changes

Key Learning

Scientists in the Early Years will...

Nursery - Understanding the World

- Use all senses to explore natural materials.

Reception - Understanding the World

- Learn new vocabulary.
- Explore the natural world.
- Describe outdoor sights, sounds, and feelings.
- Understand the effect of changing seasons on the natural world.

ELG

- Understand important natural processes and changes, including seasons and states of matter.

Scientists in Year 1 will...

Knowledge

- Observe changes across the four seasons.
- Observe and describe weather associated with seasons and variations in day length.

In the UK, day length is longest in mid-summer (approx. 16 hours) and shortest in mid-winter (8 hours), with gradual changes. Weather also changes seasonally; UK winters are typically colder/rainier, summers hotter/drier. These weather changes impact mini-beast populations, plant growth, tree leaves, and clothing choices.

(Pupils should be aware that it is not safe to look directly at the sun even when wearing dark glasses).

Confidently discuss changing seasons. Daily discussions and observations. Weather forecasts.

Key Vocabulary & Outcomes

Early Years

Key Vocabulary: Leaves, changing, colours (and colour names), growing, falling, cold, warm, hot, types of weather. Autumn, Winter, Spring, Summer, warmer, colder, ice, frost, leaves, changing, growing, types of weather.

Outcomes: Children will observe and comment on weather, trees, and plants, recognising their seasonal changes. They will describe features of individual seasons (e.g., changes to trees, plants, weather) and name them.

Year 1

Key Vocabulary: Weather - sunny, rainy, windy, snowy etc. Season, Autumn, Winter, Spring, Summer, sun, sunrise, sunset and day length.

Outcomes: Can name the four seasons and their occurrence. Can describe seasonal weather over a year. Can describe longer days in summer and shorter in winter. Can describe other features that change annually. Confidently discuss different weather types.