

PLAN

Planning for assessment

# Knowledge matrices Y1


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| | Year | 1 | Topic | Plants |
|---|---|---|---|---|
| | • Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees.<br>• Identify and describe the basic structure of a variety of common flowering plants, including trees. | | | |

| Prior learning | Future learning |
|---|---|
| • Plant seeds and care for growing plants. (Nursery – Plants)<br>• Understand the key features of the life cycle of a plant and an animal. (Nursery – Plants)<br>• Begin to understand the need to respect and care for the natural environment and all living things. (Nursery – Plants)<br>• Explore the natural world around them. (Reception – Living things and their habitats)<br>• Recognise some environments that are different to the one in which they live. (Reception – Living things and their habitats) | • Observe and describe how seeds and bulbs grow into mature plants. (Y2 - Plants)<br>• Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. (Y2 - Plants)<br>• Identify and name a variety of plants and animals in their habitats, including microhabitats. (Y2 - Living things and their habitats)<br>• Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers. (Y3 - Plants)<br>• Investigate the way in which water is transported within plants. (Y3 - Plants) |

| WHAT PUPILS NEED TO KNOW OR DO TO BE SECURE | |
|---|---|
| **Show understanding of a concept using scientific vocabulary correctly** | |
| **Key learning** | **Possible evidence** |
| Growing locally, there will be a vast array of plants which all have specific names. These can be identified by looking at the key characteristics of the plant. Plants have common parts, but they vary between the different types of plants. Some trees keep their leaves all year while other trees drop their leaves during autumn and grow them again during spring. | • Can name trees and other plants that they see regularly<br>• Can describe some of the key features of these trees and plants e.g. the shape of the leaves, the colour of the flower/blossom<br>• Can point out trees which lost their leaves and those that kept them the whole year<br>• Can point to and name the parts of a plant, recognising that they are not always the same e.g. leaves and stems may not be green |
| **Key vocabulary** | |
| Leaf, flower, blossom, petal, fruit, berry, root, seed, trunk, branch, stem, bark, stalk, bud<br>Names of trees in the local area<br>Names of garden and wild flowering plants in the local area | |


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| Common misconceptions | |
|---|---|
| Some children may think:<br>• plants are flowering plants grown in pots with colored petals and leaves and a stem<br>• trees are not plants<br>• all leaves are green<br>• all stems are green<br>• a trunk is not a stem<br>• blossom is not a flower. | |
| **Apply knowledge in familiar related contexts, including a range of enquiries** | |
| **Activities** | **Possible evidence** |
| • Make close observations of leaves, seeds, flowers etc.<br>• Compare two leaves, seeds, flowers etc.<br>• Classify leaves, seeds, flowers etc. using a range of characteristics.<br>• Identify plants by matching them to named images.<br>• Make observations of how plants change over a period of time.<br>• When further afield, spot plants that are the same as those in the local area studied regularly, describing the key features that helped them. | • Can sort and group parts of plants using similarities and differences<br>• Can use simple charts etc. to identify plants<br>• Can collect information on features that change during the year<br>• Can use photographs to talk about how plants change over time |

| Year | 1 | Topic | Animals, including humans |
|---|---|---|---|

- 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.

| Prior learning | Future learning |
|---|---|
| • Use all their senses in hands-on exploration of natural materials. (Nursery - Humans)<br>• Name and describe people who are familiar to them. (Reception - Humans) | • 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. (Y2 - Living things and their habitats)<br>• Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals. (Y6 - Living things and their habitats)<br>• Give reasons for classifying plants and animals based on specific characteristics. (Y6 - Living things and their habitats) |

**WHAT PUPILS NEED TO KNOW OR DO TO BE SECURE**

**Show understanding of a concept using scientific vocabulary correctly**

| Key learning | Possible evidence |
|---|---|
| Animals vary in many ways having different structures e.g. wings, tails, ears etc. They also have different skin coverings e.g. scales, feathers, hair. These key features can be used to identify them.<br><br>Animals eat certain things - some eat other animals, some eat plants, some eat both plants and animals.<br><br>Humans have key parts in common, but these vary from person to person. Humans (and other animals) find out about the world using their senses. Humans have five senses – sight, touch, taste, hearing and smelling. These senses are linked to particular parts of the body. | • Can name a range of animals which includes animals from each of the vertebrate groups<br>• Can describe the key features of these named animals<br>• Can label key features on a picture/diagram<br>• Can write descriptively about an animal<br>• Can write a What am I? riddle about an animal<br>• Can describe what a range of animals eat<br>• Can play and lead 'Simon says'<br>• During PE lessons, can follow instructions involving parts of the body |

| Key vocabulary | |
|---|---|
| • Head, body, eyes, ears, mouth, teeth, leg, tail, wing, claw, fin, scales, feathers, fur, beak, paws, hooves<br>• Names of animals experienced first-hand from each vertebrate group<br>• Parts of the body including those linked to PSHE teaching (see joint document produced by the ASE and PSHE Association)<br>• Senses – touch, see, smell, taste, hear, fingers (skin), eyes, nose, ear and tongue<br><br>**N.B.**<br>The children need to be able to name and identify a range of animals in each group e.g. name specific birds and fish. They do not need to use the terms mammal, reptiles etc. or know the key characteristics of each, although they will probably be able to identify birds and fish, based on their characteristics.<br><br>The children also do not need to use the words carnivore, herbivore and omnivore. If they do, ensure that they understand that carnivores eat other animals, not just meat.<br><br>Although we often use our fingers and hands to feel objects, the children should understand that we can feel with many parts of our body. | • Can label parts of the body on pictures and diagrams<br>• Can explore objects using different senses |

| Common misconceptions |
|---|
| Some children may think:<br><br>• only four-legged mammals, such as pets, are animals<br>• humans are not animals<br>• insects are not animals<br>• all ‘bugs’ or ‘creepy crawlies’, such as spiders, are part of the insect group<br>• amphibians and reptiles are the same. |

| Apply knowledge in familiar related contexts, including a range of enquiries | |
|---|---|
| **Activities** | **Possible evidence** |
| • Make first-hand, close observations of animals from each of the groups.<br>• Compare two animals from the same or different groups.<br>• Classify animals using a range of features.<br>• Identify animals by matching them to named images.<br>• Classify animals according to what they eat.<br>• Make first-hand close observations of parts of the body e.g. hands, eyes.<br>• Compare two people.<br>• Take measurements of parts of their body.<br>• Compare parts of their own body.<br>• Look for patterns between people e.g. Do people with big hands have big feet?<br>• Classify people according to their features.<br>• Investigate human senses e.g. Which part of my body is good for feeling, which is not? Which food/flavours can I identify by taste? Which smells can I match? | • Can sort and group animals using similarities and differences<br>• Can use simple charts etc. to identify unknown animals<br>• Can create a drawing of an imaginary animal labelling its key features<br>• Can use secondary resources to find out what animals eat, including talking to experts e.g. pet owners, zookeepers etc.<br>• Can use first-hand close observations to make detailed drawings<br>• Can name body parts correctly when talking about measurements and comparisons e.g. “My arm is x straws long.” “My arm is x straws long and my leg is y straws long. My leg is longer than my arm.” “We both have hands, but his are bigger than mine.” “These people have brown eyes and these have blue.”<br>• Can talk about their findings from investigations using appropriate vocabulary e.g. “My fingers are much better at feeling than my toes” “We found that the crisps all taste the same.” |


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| Year | 1 | Topic | Everyday materials |
|---|---|---|---|

- 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.

| Prior learning | Future learning |
|---|---|
| • Use all their senses in hands-on exploration of natural materials. (Nursery - Materials, including changing materials)<br>• Explore collections of materials with similar and/or different properties. (Nursery - Materials, including changing materials)<br>• Talk about the differences between materials and changes they notice. (Nursery - Materials, including changing materials) | • Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. (Y2 - Uses of everyday materials)<br>• Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. (Y2 - Uses of everyday materials) |

## WHAT PUPILS NEED TO KNOW OR DO TO BE SECURE

### Show understanding of a concept using scientific vocabulary correctly

| Key learning | Possible evidence |
|---|---|
| All objects are made of one or more materials. Some objects can be made from different materials e.g. plastic, metal or wooden spoons.<br><br>Materials can be described by their properties e.g. shiny, stretchy, rough etc. Some materials e.g. plastic can be in different forms with very different properties. | • Can label a picture or diagram of an object made from different materials<br>• Can describe the properties of different materials |
| **Key vocabulary** | |
| Object, material, wood, plastic, glass, metal, water, rock, brick, paper, fabric, elastic, foil, card/cardboard, rubber, wool, clay, hard, soft, stretchy, stiff, bendy, floppy, waterproof, absorbent, breaks/tears, rough, smooth, shiny, dull, see-through, not see-through | |


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| Common misconceptions | |
|---|---|
| Some children may think:<br><br>• only fabrics are materials<br>• only building materials are materials<br>• only writing materials are materials<br>• the word ‘rock’ describes an object rather than a material<br>• ‘solid’ is another word for hard. | |
| **Apply knowledge in familiar related contexts, including a range of enquiries** | |
| **Activities** | **Possible evidence** |
| • Classify objects made of one material in different ways e.g. a group of object made of metal.<br>• Classify in different ways one type of object made from a range of materials e.g. a collection of spoons made of different materials.<br>• Classify materials based on their properties.<br>• Test the properties of objects e.g. absorbency of cloths, strength of party hats made of different papers, stiffness of paper plates, waterproofness of shelters. | • Can sort objects and materials using a range of properties<br>• Can choose an appropriate method for testing an object for a particular property<br>• Can use their test evidence to answer the questions about properties e.g. “Which cloth is the most absorbent?” |

| | Year | 1 | Topic | Seasonal changes |
|---|---|---|---|---|
| | • Observe changes across the four seasons.<br>• Observe and describe weather associated with the seasons and how day length varies. | | | |

| Prior learning | Future learning |
|---|---|
| • Understand the key features of the life cycle of a plant and an animal. (Nursery – Plants & Animals, excluding humans)<br>• Explore the natural world around them. (Reception – Seasonal changes)<br>• Describe what they see, hear and feel whilst outside. (Reception – Seasonal changes)<br>• Understand the effect of changing seasons on the natural world around them. (Reception – Seasonal changes) | • Recognise that light from the sun can be dangerous and that there are ways to protect their eyes. (Y3 - Light)<br>• Use the idea of the Earth's rotation to explain day and night and the apparent movement of the Sun across the sky. (Y5 - Earth and space)<br>• The seasons and the Earth's tilt, day length at different times of year, in different hemispheres. (KS3) |

| WHAT PUPILS NEED TO KNOW OR DO TO BE SECURE | |
|---|---|
| **Show understanding of a concept using scientific vocabulary correctly** | |
| **Key learning** | **Possible evidence** |
| In the UK, the day length is longest at mid-summer (about 16 hours) and gets shorter each day until mid-winter (about 8 hours) before getting longer again.<br><br>The weather also changes with the seasons. In the UK, it is usually colder and rainier in winter, and hotter and dryer in the summer. The change in weather causes many other changes. Some examples are: numbers of minibeasts found outside; seed and plant growth; leaves on trees; and type of clothes worn by people. | • Can name the four seasons and identify when in the year they occur<br>• Can describe weather in different seasons over a year<br>• Can describe days as being longer (in time) in the summer and shorter in the winter<br>• Can describe other features that change through the year |

| Key vocabulary | |
|---|---|
| • Weather (sunny, rainy, windy, snowy etc.)<br>• Seasons (winter, summer, spring, autumn)<br>• Sun, sunrise, sunset, day length | |

**Common misconceptions**

Some children may think:

- it always snows in winter
- it is always sunny in the summer
- there are only flowers in spring and summer
- it rains most in the winter.

**Apply knowledge in familiar related contexts, including a range of enquiries**

| Activities | Possible evidence |
|---|---|
| • Collect information about the weather regularly throughout the year.<br>• Present this information in tables and charts to compare the weather across the seasons.<br>• Collect information, regularly throughout the year, of features that change with the seasons e.g. plants, animals, humans.<br>• Present this information in different ways to compare the seasons.<br>• Gather data about day length regularly throughout the year and present this to compare the seasons. | • Use the evidence gathered to describe the general types of weather and changes in day length over the seasons.<br>• Use their evidence to describe some other features of their surroundings, e.g. themselves, animals, plants that change over the seasons<br>• Demonstrate their knowledge in different ways e.g. making a weather forecast video, writing seasonal poetry, creating seasonal artwork |