

# Science: Curriculum overview 23/24

## Related Early Learning Goal: The Natural World

- Explore the natural world around us, 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 own experiences and what has been read in class.
- Understand some important processes and changes in the natural world around them, including seasons and changing states of matter.

## Knowledge

### Animals, excluding Humans

- Name and describe animals that live in different habitats.
- Describe different habitats.

### Humans

- Describe people who are familiar to them.
- Learn about how to take care of themselves.

### Living Things and their Habitats

- Explore the plants in the surrounding natural environment.
- Explore the animals in the surrounding natural environment.
- Explore plants and animals in contrasting natural environments.

### Seasonal Changes

- Play and explore outside in all seasons and in different weathers.
- Observe living things throughout the year.

### Materials including changing materials

- Explore a range of materials including natural materials.
- Make objects from different materials, including natural materials.
- Observe, measure and record how materials change when heated and cooled.
- Compare how materials change over time and in different conditions.

### Light

- Explore shadows.
- Explore rainbows.

### Forces

- Explore how to change how things work.
- Explore how the wind can move objects.
- Explore how objects move in water.

### Sound

- Listen to sounds outside and identify the source.
- Make sounds.

### Earth and Space

- Learn about the Earth, Sun, Moon, Plants and stars.
- Learn about Space travel.

## Connections to Other Early Learning Goals:

### Communication and language

- Connect one idea or action to another using a range of connectives
- Describe events in some detail
- Listen to and talk about selected non-fiction to develop a deep familiarity with knowledge
- Ask questions to find out more in and to check they understand what has been said
- 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

- Show resilience and perseverance in the face of challenge

### Understanding the world

- Explore the natural world around them

### Maths

- Count objects actions and sounds

### Working Scientifically

Show curiosity and ask questions

Make direct comparisons

Identify sort and group

Record their observations by drawing taking photographs using sorting rings or boxes and simple tick sheet

Talk about what they have done and found out

Using observations to help them to answer their questions

Reception

Autumn

Spring

Summer

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| Year 1 | <h3>Animals Inc Human</h3> <ul style="list-style-type: none"> <li>Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense</li> <li>Describe and compare the structure of a variety of common animals</li> <li>Identify and name a variety of common animals that are carnivores, herbivores and omnivores</li> <li>Identify and name a variety of common animals</li> </ul> <h3>Seasonal Change</h3> <ul style="list-style-type: none"> <li>Observe changes across the four seasons</li> <li>Observe and describe weather associated with the seasons and how day length varies.</li> </ul>  |  | <h3>Materials</h3> <ul style="list-style-type: none"> <li>Distinguish between an object and the material from which it is made</li> <li>Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock</li> <li>Describe the simple physical properties of a variety of everyday materials</li> <li>Compare and group together a variety of everyday materials on the basis of their simple physical properties.</li> </ul> <h3>Seasonal Change</h3> <ul style="list-style-type: none"> <li>Observe changes across the four seasons</li> <li>Observe and describe weather associated with the seasons and how day length varies.</li> </ul> |   | <h3>Plants</h3> <ul style="list-style-type: none"> <li>Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees</li> <li>Identify and describe the basic structure of a variety of common flowering plants, including trees.</li> </ul> <p><b>FOREST SCHOOL LINK</b></p> <h3>Seasonal Change</h3> <ul style="list-style-type: none"> <li>Observe changes across the four seasons</li> <li>Observe and describe weather associated with the seasons and how day length varies.</li> </ul>  |  |
| Year 2 | <h3>Animals Inc Humans</h3> <ul style="list-style-type: none"> <li>Notice that animals, including humans, have offspring which grow into adults</li> <li>Find out about and describe the basic needs of animals, including humans, for survival (water, food and air)</li> <li>Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene</li> <li>Notice that animals, including humans, have offspring which grow into adults</li> <li>Find out about and describe the basic needs of animals, including humans, for survival (water, food and air)</li> <li>Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene</li> </ul> |  | <h3>Materials</h3> <ul style="list-style-type: none"> <li>Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses</li> <li>Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching</li> </ul>   | <h3>Plants</h3> <ul style="list-style-type: none"> <li>Observe and describe how seeds and bulbs grow into mature plants</li> <li>Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.</li> </ul> <p><b>FOREST SCHOOL LINK</b></p>  | <h3>Living things and their habitats</h3> <ul style="list-style-type: none"> <li>Explore and compare the differences between things that are living, dead, and things that have never been alive</li> <li>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</li> <li>Identify and name a variety of plants and animals in their habitats, including microhabitats</li> <li>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.</li> </ul> |  |
| Year 3 | <h3>Animals Inc Humans</h3> <ul style="list-style-type: none"> <li>Understand that nutrition comes from food</li> <li>skeletons and muscles</li> <li>Classify foods into groups</li> </ul>   | <h3>Light</h3> <ul style="list-style-type: none"> <li>Recognise that they need light to see things</li> <li>Notice that light is reflected from Surfaces</li> <li>Safety around light and protecting eyes</li> <li>Shadows - how they are formed</li> <li>Finding patterns with the size of shadows</li> </ul> | <h3>Rocks</h3> <ul style="list-style-type: none"> <li>Compare and group different kinds of rocks.</li> <li>Describe how fossils are formed.</li> <li>Recognise that soils are made from rocks and organic matter</li> </ul>  | <h3>Forces and magnets</h3> <ul style="list-style-type: none"> <li>compare how things move on different surfaces</li> <li>notice that some forces need contact between 2 objects, but magnetic forces can act at a distance</li> <li>observe how magnets attract or repel each other and attract some materials and not others</li> <li>compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials</li> <li>describe magnets as having 2 poles</li> <li>predict whether 2 magnets will attract or repel each other, depending on which poles are facing</li> </ul> | <h3>Plants</h3> <ul style="list-style-type: none"> <li>Roots stem/trunk, leaves and flowers</li> <li>Plants' requirements</li> <li>Water transportation</li> <li>Pollination, seed formation and seed dispersal</li> </ul>   |  |
| Year 4 | <h3>Electricity</h3> <ul style="list-style-type: none"> <li>Identify common appliances that run on electricity</li> <li>construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers</li> </ul>   | <h3>Sound</h3> <ul style="list-style-type: none"> <li>identify how sounds are made, associating some of them with something vibrating</li> <li>recognise that vibrations from sounds travel</li> </ul>   | <h3>States of matter</h3> <ul style="list-style-type: none"> <li>compare and group materials together, according to whether they are solids, liquids or gases</li> <li>observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C)</li> </ul>   |   | <h3>Grouping and classifying</h3> <ul style="list-style-type: none"> <li>Ask relevant scientific questions, independently, about the world around</li> </ul>   | <h3>Living things and their habitats</h3> <ul style="list-style-type: none"> <li>recognise that living things can be grouped in a variety of ways</li> </ul> |

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|                      | <ul style="list-style-type: none"> <li>identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery</li> <li>recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit</li> <li>recognise some common conductors and insulators, and associate metals with being good conductors</li> </ul>  | <p>through a medium to the ear</p> <ul style="list-style-type: none"> <li>find patterns between the pitch of a sound and features of the object that produced it</li> <li>find patterns between the volume of a sound and the strength of the vibrations that produced it</li> <li>recognise that sounds get fainter as the distance from the sound source increases</li> </ul>   | <ul style="list-style-type: none"> <li>identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature</li> </ul> <h3>Animals Inc humans</h3> <ul style="list-style-type: none"> <li>describe the simple functions of the basic parts of the digestive system in humans</li> <li>identify the different types of teeth in humans and their simple functions</li> <li>construct and interpret a variety of food chains, identifying producers, predators and prey</li> </ul> | <p>them and begin to identify how they can answer them.</p> <ul style="list-style-type: none"> <li>Compare, sort and group living things from a range of environments, in a variety of ways, based on observable features and behaviour.</li> <li>Gather, record, classify and present observations and measurements in a variety of ways (pictorial representations, timelines, diagrams, keys, tables, charts and graphs).</li> <li>Use scientific vocabulary to report and answer questions about their findings based on evidence collected, draw simple conclusions and identify next steps, improvements and further questions.</li> </ul> | <ul style="list-style-type: none"> <li>explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment</li> <li>recognise that environments can change and that this can sometimes pose dangers to living things</li> </ul> <p><b>FOREST SCHOOL LINK</b></p> |
| <p><b>Year 5</b></p> | <h3>Properties and Changes in Materials</h3> <ul style="list-style-type: none"> <li>compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets</li> <li>know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution</li> <li>use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating</li> <li>give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic</li> <li>demonstrate that dissolving, mixing and changes of state are reversible changes</li> <li>explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda</li> </ul> | <h3>Earth &amp; space</h3> <ul style="list-style-type: none"> <li>describe the movement of the Earth and other planets relative to the sun in the solar system</li> <li>describe the movement of the moon relative to the Earth</li> <li>describe the sun, Earth and moon as approximately spherical bodies</li> <li>use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky</li> </ul> | <h3>Living things and habitats</h3> <ul style="list-style-type: none"> <li>describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird</li> <li>describe the life process of reproduction in some plants and animals</li> </ul>  | <h3>Forces &amp; mechanisms</h3> <ul style="list-style-type: none"> <li>explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object</li> <li>identify the effects of air resistance, water resistance and friction, that act between moving surfaces</li> <li>recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect</li> </ul>   | <h3>Animals including Humans</h3> <ul style="list-style-type: none"> <li>describe the changes as humans develop to old age</li> </ul>   |

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| <b>Year 6</b> | <p><b>LIVING THINGS AND THEIR HABITATS</b></p> <ul style="list-style-type: none"> <li>describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals</li> <li>give reasons for classifying plants and animals based on specific characteristics</li> </ul> <p><b>FOREST SCHOOL LINK</b></p> | <p><b>Animals including humans</b></p> <ul style="list-style-type: none"> <li>identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood</li> <li>recognise the impact of diet, exercise, drugs and lifestyle on the way their body's function</li> <li>describe the ways in which nutrients and water are transported within animals, including humans</li> </ul> | <p><b>Evolutions and Inheritance</b></p> <ul style="list-style-type: none"> <li>recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago</li> <li>recognise that living things produce offspring of the same kind, but normally off spring vary and are not identical to their parents</li> <li>identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution</li> </ul> | <p><b>Electricity</b></p> <ul style="list-style-type: none"> <li>associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit</li> <li>compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches</li> <li>use recognised symbols when representing a simple circuit in a diagram.</li> </ul> | <p><b>Light</b></p> <ul style="list-style-type: none"> <li>recognise that light appears to travel in straight lines</li> <li>use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye</li> <li>explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes</li> <li>use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them</li> </ul> |
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