

# Common Road Infant and Nursery School

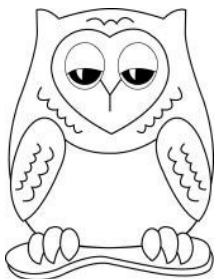
# Our Science Curriculum

Our Science curriculum is guided by the **National Curriculum (2014)** for KS1 Science, and the **2021 Development Matters Framework** for EYFS. Pupils should be taught about:

- **Plants** – The names of common plants and trees, the parts of plants and their functions, what plants need to survive.
- **Animals** – The names of common animals and their features, classification of animals based on their type and diet, life cycles of animals including butterflies and chickens, food chains.
- **Humans** – What humans need to survive, how to stay healthy and hygienic.
- **Habitats** – The names of different habitats in locations around the world, and which plants and animals live there.
- **Seasons** – Typical features of each season and how seasons change and differ to each other.

## Intent

Our intent is that Science teaching will help our young children to understand, explain, observe and question the world around them. We teach carefully sequenced, progressive lessons which focus on accurate vocabulary choices and scientific investigation. It is essential that our children have a wide, rich vocabulary in order to explain what they see in the world around them. We aim to provide a hands-on science curriculum which allows children to question and explore through practical experiences. We give all children a strong understanding of the world around them whilst acquiring specific skills and knowledge to help them to think scientifically, to gain an understanding of scientific processes and also an understanding of the uses and implications of Science, today and for the future.



**EYFS – Children learn about the world around them through observation and exploration. They learn about the seasons by observing wildlife and plantlife throughout the year, comparing similarities and differences. They learn about animals and their habitats (specifically woodland), and compare their local environment with others. They learn about the different stages of human life, and name parts of the human body. They learn about plants by planting a variety of different plants and observing them closely. They explore common materials by naming them.**

**Year 1**

**Autumn term - Everyday Materials**

Children identify and classify objects based on the materials they are made from. They identify and explore properties of common materials – investigating what they are suitable for. Children begin to observe and explore the seasons – focusing on autumn and its effect on wildlife and plantlife.



**Year 2**

**Autumn term – Uses of Everyday Materials**

Children identify properties of materials, investigating what they are suitable for. They begin to understand how scientific knowledge can affect our daily lives, particularly focussing on why materials are chosen for different jobs. Children investigate and explore how materials can be changed.



**Year 1**

**Spring term – Humans / Plants**

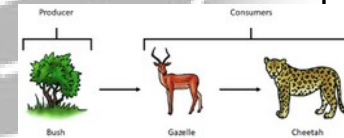
Children name and locate parts of the body, linking them to each of their senses. Children will learn about types of common plants and trees, and be able to identify parts of plants. They will observe and compare a variety of plants. Children continue to observe and compare the seasons – focusing on winter and moving in to spring.



**Year 2**

**Summer term – Living Things and Their Habitats**

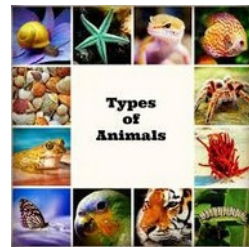
Children learn about what animals need to survive, the types of environments that they live in, and how they are suited to their environments. They learn about life cycles by studying butterflies and chicks – looking after and observing them closely.



**Year 1**

**Summer term – Animals**

Children will classify animals based on their characteristics and diet, and be able to identify features of a range of animals. Children continue to observe and compare the seasons – focussing on summer.



**Year 2**

**Summer term – Plants / Humans**

Children learn about the life cycle of a plant by planting, observing and investigating. They learn about what plants need to survive, through investigation and questioning. Children learn about human health and hygiene through a range of practical activities.



## Progression Overview

	<b>EYFS</b>	<b>Year 1</b>	<b>Year 2</b>
<b>Plants</b>	<ul style="list-style-type: none"> <li>• Explore the natural world around them.</li> <li>• Plant seeds and care for growing plants.</li> <li>• Understand the key features of the life cycle of a plant and an animal.</li> <li>• Begin to understand the need to respect and care for the natural environment and all living things.</li> </ul>	<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>	<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>
<b>Animals, including humans</b>  <b>Living things and their habitats</b>	<ul style="list-style-type: none"> <li>• Explore the natural world around them.</li> <li>• Understand the key features of the life cycle of a plant and an animal.</li> <li>• Begin to understand the need to respect and care for the natural environment and all living things.</li> </ul>	<ul style="list-style-type: none"> <li>• Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals</li> <li>• Identify and name a variety of common animals that are carnivores, herbivores and omnivores</li> <li>• Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets)</li> <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> </ul>	<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>• 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>
<b>Materials</b>	<ul style="list-style-type: none"> <li>• Explore the natural world around</li> </ul>	<ul style="list-style-type: none"> <li>• Distinguish between an object and</li> </ul>	<ul style="list-style-type: none"> <li>• Identify and compare the suitability of</li> </ul>

	<p>them.</p> <ul style="list-style-type: none"> <li>• Use all their senses in hands-on exploration of natural materials.</li> <li>• Explore collections of materials with similar and/or different properties.</li> <li>• Talk about what they see, using a wide vocabulary.</li> <li>• Talk about the differences between materials and changes they notice.</li> </ul>	<p>the material from which it is made</p> <ul style="list-style-type: none"> <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>	<p>a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses</p> <ul style="list-style-type: none"> <li>• Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching</li> </ul>
<p><b>Seasons</b></p>	<p><b>Forces</b></p> <ul style="list-style-type: none"> <li>• Explore and talk about different forces they can feel.</li> </ul>	<ul style="list-style-type: none"> <li>• Observe changes across the 4 seasons</li> <li>• Observe and describe weather associated with the seasons and how day length varies</li> </ul>	<p>**Seasons revisited in Geography – linked to climate and weather patterns around the world.</p>
<p><b>Scientific enquiry</b></p>	<ul style="list-style-type: none"> <li>• Explore the natural world around them.</li> </ul>	<ul style="list-style-type: none"> <li>• Asking simple questions and recognising that they can be answered in different ways</li> <li>• Observing closely, using simple equipment</li> <li>• Performing simple tests</li> <li>• Identifying and classifying</li> <li>• Using their observations and ideas to suggest answers to questions</li> <li>• Gathering and recording data to help in answering questions</li> </ul>	<ul style="list-style-type: none"> <li>• Asking simple questions and recognising that they can be answered in different ways</li> <li>• Observing closely, using simple equipment</li> <li>• Performing simple tests</li> <li>• Identifying and classifying</li> <li>• Using their observations and ideas to suggest answers to questions</li> <li>• Gathering and recording data to help in answering questions</li> </ul>

Year group	1	1	1	1
Area	Plants	Animals including humans	Materials	Seasons
Overview	Children gain lots of practical experience with plants – planting bulbs and seeds, looking after plants, observing growth and looking closely at the parts of a plant. They learn about different types of trees, being able to name deciduous and evergreen trees.	Children identify a range of animals and compare them in different ways – by type and diet. They begin to justify their classifications. Children name and locate parts of their body and talk about the related senses.	Children sort and group a wide range of objects according to what they are made from. They also begin to discuss basic properties.	Children identify features of the seasons throughout the year. Comparisons are made – looking at weather, plant life and animals. The effects of changes in weather are related to their own lives.
Investigation	<ul style="list-style-type: none"> <li>• <i>Observation over time</i> – Planting different varieties, looking after them and keeping records of growth through pictures and notes.</li> <li>• <i>Identifying and classifying</i> – Plants in different environments. Naming, grouping and sorting.</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Identifying and classifying</i> - Grouping animals into appropriate categories based on diet and type.</li> <li>• <i>Research</i> – Research an animal and create a fact file.</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Identifying and classifying</i> – Sorting objects in the classroom into groups according to materials they are made from.</li> <li>• <i>Fair testing</i> – Keeping teddy dry investigation.</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Pattern seeking</i> – Looking at similarities between seasons.</li> <li>• <i>Observations over time</i> – Go for a seasons walk, observe the weather and environment throughout the half term.</li> </ul>
Previous knowledge	In EYFS children have observed and explored the world around them by: <ul style="list-style-type: none"> <li>- planting seeds and bulbs and watching them grow;</li> <li>- experimenting with water and ice and different containers;</li> <li>- collecting natural materials linked to the seasons;</li> <li>- noticing how we change as we grow up</li> </ul>			
Specific vocabulary	tulip, daisy, dandelion, rose, buttercup, seed, petal, stem, leaf, bulb, flower, roots, trunk, branches, deciduous, evergreen.	<b>Humans</b> – body, head, legs, arms, hands, feet, fingers, toes, neck, shoulders, elbows, wrists, waist, knees, ankles, eyes, ears, nose, mouth, tongue <b>Classification</b> —Fish, amphibians, reptiles, birds, mammals <b>Features</b> —Trunk, gills, wings, paws, claws, fangs, fur, tail, fins, shell <b>Diet</b> - carnivore, herbivore, omnivore	<b>Materials</b> – brick, wood, metal, plastic, glass, paper, leather, rock <b>Properties</b> – hard, soft, smooth, rough, strong, waterproof, flexible	autumn, winter, spring, summer, weather, rain, drizzle, hail, snow, sunny, windy, cloudy, stormy, cold, warm, hot, dry, wet

Year group	2	2	2	2
Area	Plants	Animals including humans	Uses of everyday materials	Habitats
Overview	Children have lots of opportunities to work practically – looking closely at the structure of plants and describing and observing plant growth by looking after their own seeds and bulbs. They investigate what plants need to survive, and the effects on plants when they do not have everything that they need.	Children talk about how we can determine whether something is alive, dead or non-living. They explore how animals grow and change by looking at life-cycles, and construct food chains based on what they know about diet. Children explore and identify what humans need to survive, relating this to changes that they can make in their own lives.	Children classify a wide range of materials according to their properties. They explain why materials have been chosen for different purposes, and focus on using knowledge from scientific investigations to suggest materials to use for different purposes.	Children explore different habitats around the world, and micro-habitats within the school grounds. They learn about how animals are suited to their environments, and what the right environment needs to have for the things living there. They design habitats suitable for a range of different animals.
Investigation	<ul style="list-style-type: none"> <li>• <i>Observation over time</i> – Planting different varieties, looking after them and keeping records of growth through pictures and notes.</li> <li>• <i>Fair testing</i> – The effects of light on plant growth.</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Fair testing</i> – Investigating the effects of good / poor hygiene (hand washing).</li> <li>• <i>Observations over time</i> – Observing the life cycle of chicks and butterflies.</li> <li>• <i>Identifying and classifying</i> – Alive / dead / non-living.</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Identifying and classifying</i> – Sorting materials according to their properties.</li> <li>• <i>Fair testing</i> – Investigating the best materials to use for different purposes.</li> <li>• <i>Observations over time</i> – Investigating the effects of heating and cooling.</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Research</i> – Researching different habitats around the world.</li> </ul>
Previous knowledge	<p>In Year 1, children have begun to explore these topics by:</p> <ul style="list-style-type: none"> <li>- <b>Materials</b> – identifying and classifying based on type of material. Children begun to discuss basic properties of materials.</li> <li>- <b>Animals</b> – classifying animals according to type and diet.</li> <li>- <b>Plants</b> – identifying parts of plants and trees, naming common plants and trees. Children observed plant growth.</li> </ul>			
Specific vocabulary	<p><b>Naming and classifying</b> – tulip, daisy, dandelion, rose, buttercup, seed, petal, stem, leaf, bulb, flower, roots, trunk, branches, deciduous, evergreen.</p> <p><b>Plant growth</b> - life cycle, germination, anther, pollination</p>	<p>Living, dead, non-living</p> <p>Food chain, producer, consumer, predator, prey</p> <p>Life cycle, offspring</p>	<p><b>Materials</b> – brick, wood, metal, plastic, glass, paper, leather, rock</p> <p><b>Properties</b> – hard, soft, smooth, rough, strong, transparent, translucent, opaque, waterproof, flexible</p>	<p>Habitat, micro-habitat, adaptations</p>

