

# Curriculum Intent – Knowledge Builder

## Science Key Stage 1 curriculum

### Subject Intent Statement:

Science has changed our lives and is vital to the world's future prosperity. Our aim is to encourage pupils to recognise the power of scientific explanation and develop a sense of excitement and curiosity about natural phenomena. We seek to inspire in pupils' a curiosity and fascination about the world around them to ensure that all pupils: develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics; develop understanding of the nature, processes and methods of science through science enquiries that help them to answer scientific questions about the world around them; are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future. We aim to develop knowledge and skills that are transferable to other curriculum areas and which can and are used to promote their spiritual, moral, social and cultural development.

### Year 1

#### Key knowledge:

##### 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

Pupils identify and become familiar with the common names of some fish, amphibians, reptiles, birds and mammals, including those that are kept as pets

Pupils identify and name a variety of common animals that are carnivores, herbivores and omnivores.

Pupils can describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets)

Pupils learn the names of the main body parts (including head, neck, arms, elbows, legs, knees, face, ears, eyes, hair, mouth, teeth) and label parts of the body.

Pupils name and explain the function of the 5 senses

##### Everyday materials

Pupils distinguish between an object and the material from which it is made.

Pupils identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock.

They can describe the simple physical properties of a variety of everyday materials.

Pupils compare and group together a variety of everyday materials on the basis of their simple physical properties.

##### Plants

- identify and name a variety of common wild and garden plants, including deciduous and evergreen trees
- identify and describe the basic structures of a variety of common flowering plants, including trees

Pupils identify and become familiar with common names of flowers, examples of deciduous and evergreen trees, and plant structures (including leaves, flowers (blossom), petals, fruit, roots, bulb, seed, trunk, branches, stem, making a flower diagram

##### Seasonal changes

Pupils observe changes across the four seasons.

Pupils describe the weather and temperature in different seasons and learn how the day length varies.

Know how to use big questions as the basis for investigation such as :

What happens to trees throughout the seasons?

### Year 2

#### Key Knowledge:

##### Animals including humans

Pupils understand that animals including humans grow and have offspring.

Pupils know the names of animals and their offspring and their life cycles

Pupils describe basic needs for survival (water, food, air)

Pupils describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.

##### Uses of everyday materials

Pupils identify and compare the properties and use of materials,

Pupils find out how solid shapes can be changed by squashing, bending, twisting and stretching.

##### Plants

Pupils know about how light, water and temperature affect plants; they revise and develop plant knowledge from year 1

Pupils observe and describe how seeds and bulbs grow into mature plants.

##### Living things and their habitats

Pupils explore and compare differences between things that are living, dead, and never been alive.

Pupils 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.

Pupils identify and name a variety of plants and animals in their habitats, including micro-habitats

Pupils 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

Know how to use big questions as the basis for investigation such as

Why doesn't a panda live in Antarctica?

Are the basic needs of a tiger the same as a human?

Do cacti live in our local environment?

What is a micro-habitat?

What is the best material for cleaning up a spillage?

Do the tallest people have the biggest feet? Are you faster at running if you are older?

<p>Does the wind always blow in the same direction?          What does my pet need to survive?          What material would be best to fix the umbrella?          Where do woodlice prefer to live?</p>	
<p><b>Key Skills: Working scientifically</b></p> <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 in a simple way to help in answering questions.</li> </ul> <p><b>Plants</b>          Pupils might work scientifically by: observing closely, perhaps using magnifying glasses, and comparing and contrasting familiar plants; describing how they were able to identify and group them, and drawing diagrams showing the parts of different plants including trees. Pupils might keep records of how plants have changed over time, for example the leaves falling off trees and buds opening; and compare and contrast what they have found out about different plants.</p> <p><b>Animals including humans</b>          Pupils might work scientifically by: using their observations to compare and contrast animals at first hand or through videos and photographs, describing how they identify and group them; grouping animals according to what they eat; and using their senses to compare different textures, sounds and smells.</p> <p><b>Everyday materials</b>          Pupils might work scientifically by: performing simple tests to explore questions, for example: 'What is the best material for an umbrella? ...for lining a dog basket? ...for curtains? ...for a bookshelf? ...for a gymnast's leotard?'</p> <p><b>Seasonal changes</b>          Pupils might work scientifically by: making tables and charts about the weather; and making displays of what happens in the world around them, including day length, as the seasons change.</p>	<p><b>Key Skills: Working scientifically</b></p> <ul style="list-style-type: none"> <li>• asking more complex questions and recognising that they can be answered in different ways</li> <li>• observing closely, using simple equipment and increasing command of vocabulary to describe their observations precisely</li> <li>• identifying and classifying using an increasing command of scientific vocabulary</li> <li>• using their observations and ideas to suggest answers to increasingly complex questions</li> <li>• gathering and recording data with growing accuracy and precisions to answer questions.</li> </ul> <p><b>Plants</b>          Pupils might work scientifically by: observing and recording, with some accuracy, the growth of a variety of plants as they change over time from a seed or bulb, or observing similar plants at different stages of growth; setting up a comparative test to show that plants need light and water to stay healthy.</p> <p><b>Animals including humans</b>          Pupils might work scientifically by: observing, through video or first-hand observation and measurement, how different animals, including humans, grow; asking questions about what things animals need for survival and what humans need to stay healthy; and suggesting ways to find answers to their questions.</p> <p><b>Uses of everyday materials</b>          Pupils might work scientifically by: comparing the uses of everyday materials in and around the school with materials found in other places (at home, the journey to school, on visits, and in stories, rhymes and songs); observing closely, identifying and classifying the uses of different materials, and recording their observations.</p> <p><b>Living things and their habitats</b>          Pupils might work scientifically by: sorting and classifying things according to whether they are living, dead or were never alive, and recording their findings using charts. They should describe how they decided where to place things, exploring questions for example: 'Is a flame alive? Is a deciduous tree dead in winter?' and talk about ways of answering their questions. They could construct a simple food chain that includes humans (e.g. grass, cow, human). They could describe the conditions in different habitats and micro-habitats (under log, on stony path, under bushes) and find out how the conditions affect the number and type(s) of plants and animals that live there.</p>
<p><b>Key Vocabulary</b>          Animals          Mammal, reptile, amphibian, carnivore, herbivore, omnivore          snails and slugs, worms, spiders, and insects          Plants          Trees, Flowers          Parts of plants including leaves, flowers (blossom), petals, fruit, roots, bulb, seed, trunk, branches, stem          Body parts including head, neck, arms, elbows, legs, knees, face, ears, eyes, hair, mouth, teeth          The 5 senses          Materials- wood, plastic, metal, glass, rock, water          The properties of materials hard/soft; stretchy/stiff; shiny/dull; rough/smooth; bendy/not bendy; waterproof/not waterproof; absorbent/not absorbent; opaque/transparent          Seasons          Weather          Forecast          Temperature</p>	<p><b>Key Vocabulary</b>          All vocabulary from Year 1 plus          Survival          Nutrition          Health          Exercise          survival          Reproduction/ offspring          Life cycle          Habitat/ micro-habitat          Food chain          Environment          Materials - as per Y1 plus brick, cardboard, paper and their properties as per Y1, solid, liquid, suitable, unsuitable          Property          Observe          Classify          Investigation</p>