****

**Progression of Knowledge and Skills in Science**

***Statements in italics are from the Early Learning Goals or the National Curriculum***

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Working scientifically** | **Plants** | **Animals, including humans** | **Everyday materials** | **Seasonal changes** | **Living Things and Their Habitats** |
| Early Years | * Observe and investigate natural materials and processes
* Use observations to help sort materials/animals by simple criteria
* Pose their own questions, share their own ideas and make their own predictions
* Use what they have learnt to solve simple problems

***CoEL:playing and exploring****– children investigate and experience things and ‘have a go.’****active learning****– children concentrate and keep on trying if they encounter difficulties and enjoy achievements****creating and thinking critically –****children have and develop their own ideas, make links between ideas, and develop strategies for doing things.* | * Know what a plant looks like
* Name different parts of a plant
* Discuss how to look after plants
* Understand how plants are made and grow
* Plant seeds and bulbs and help to care for the growing plants
* Create drawings of plants they have observed closely e.g. spring flowers

***ELG:*** *Explore the natural world around them, making observations and drawing pictures of…plants*  | ***Ourselves**** *Manage their own basic hygiene and personal needs, including dressing, going to the toilet and understanding the importance of healthy food choices.*
* Know about and name body parts
* Describe what different body parts do
* Explore how our bodies change as we grow from baby to toddler to child through sharing photos, stories and having visitors
* Identify some ways that they can keep healthy
* Recognise some ways that babies need to be cared for
* Think about how we are similar and different in terms of our characteristics e.g. eye/hair colour, height
* Draw self-portraits, identifying features

***Animals in familiar environments**** Name different types of animals
* Find out about farm animals and minibeasts through first-hand experience, non-fiction texts and video
* Describe farm animals and minibeasts using descriptive vocabulary
* Think about how familiar animals are similar and different
* Create drawings of animals they have observed closely e.g. chicks, ducklings, insects

***ELG:*** *Explore the natural world around them, making observations and drawing pictures of animals…* | * Name different materials that they come across in their play
* Describe materials using descriptive vocabulary
* Explore the properties of some materials e.g. to find the best filling for Daddy Bear’s cushion
* Know where some materials come from e.g. wool from sheep, wood from trees
* Understand how some materials can change e.g. through cooking processes, mixing sand and water, investigating ice melting

***ELG:*** *Understand some important processes and changes in the natural world around them, including…changing states of matter.* | * Know the names of different seasons
* State what weather is likely in different seasons
* Recognise types of weather
* Discuss ways to be safe in different types of weather

***ELG:*** *Understand some important processes and changes in the natural world around them, including the seasons…* | ***Animals in contrasting envrironments**** Find out about the different habitats animals live in around the world through books, images and small world play

***Minibeasts**** Learn about where minibeasts live in our school grounds and why
* Conduct minibeast hunts in our school grounds and in a contrasting environment

***ELG:*** *Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class* |
| Year 1 | With guidance from and modelling by the teacher,* *Ask simple questions and recognise that they can be answered in different ways*
* *Observe closely, using simple equipment*
* *Perform simple tests*
* *Identify and classify*
* *Use their observations and ideas to suggest answers to questions*
* *Gather and record data to help in answering questions*

Record by:* Explaining ideas for a teacher to scribe
* Classifying physical objects/pictures into sorting hoops
* Completing simple tables using ticks, crosses or single words/numbers
* Complete a simple pictogram
* Drawing and labelling simple diagrams e.g. parts of a tree
* Beginning to classify information into a simple Venn diagram

With increasing independence and accuracy, * *Ask simple questions and recognise that they can be answered in different ways*
* *Observe closely, using simple equipment*
* *Perform simple tests*
* *Identify and classify*
* *Use their observations and ideas to suggest answers to questions*
* *Gather and record data to help in answering questions*

Record by:* Explaining ideas in simple written sentences e.g. within a thought bubble or speech bubble
* Completing simple tables using pictures, words and phrases
* Beginning to draw tables independently
* Completing a pictogram
* Classifying information into a simple Venn diagram
* Capturing observations in a diary over time
* Drawing and labelling to complete more complex diagrams e.g. life cycle, food chain
 | **What’s growing in our gardens?/Longitudinal Study*** *Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees*
* *Identify and describe the basic structure of a variety of common flowering plants, including trees*
* Identify a range of common plants and trees within our school grounds using spotter’s guides
* Classify plants into garden plants/wildflowers
* Begin to recognise how bees are important for plants
* Grow bee-friendly plants from seed
* Draw and label diagrams of plants and trees and show an awareness of the functions of the parts
 | **Ourselves*** *Identify, draw and label the basic parts of the human body and say which part of the body is associated with each sense*
* Measure their hands and feet using non-standard units and record the information clearly
* Classify objects using their senses
* Make observations on a senses walk

**Animal detectives*** *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,* including dogs, sharks, birds of prey and crocodiles
* Understand what animals need to survive
* Classify animals into groups based on their suitability as a pet, their class and their diet
* Describe, draw and label a diagram of a bird of prey
* Perform a simple test to find out which bird seed is the most popular among the birds in our school garden
* Use a venn diagram to compare the structure of two familiar animals
 | **Let’s Build and Marvellous 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 everyday materials on the basis of their simple physical properties*
* Perform simple guided tests of strength, transparency and waterproofness and observe the outcomes
* Gather and record data as part of a group to help select the best material for a wall, window and roof
 | **Longitudinal Study:*** *Observe changes across the four seasons*
* Investigate whether our school grounds are the most colourful in autumn

**Wonderful Weather*** *Observe and describe weather associated with the seasons*
* *Observe changes across the four seasons*
* *Understand how day length varies with the seasons*
* Measure and record rainfall
* Record data in a pictogram to help them answer questions
 | - |
| Year 2 | **Plants – Thriving Plants*** *Observe and describe how seeds and bulbs grow into mature plants*
* *Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy*
* Set up a simple test to find out what happens to plants grown in different conditions
* Predict what might happen to the plants growing in different places
* Observe and complete observational drawings of the inside of seeds and bulbs
* Gather and record data in a diary
* Compare the results of the test with the predictions made
 | **All about Diet and Health*** *Find out about and describe the basic needs of animals, including humans, for survival (water, food and air)*
* *Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene*
* Identify what a healthy, balanced diet consists of
* Classify a range of common foods into their food groups on the Eatwell Plate
* Gather, record and analyse data using a tally chart and bar chart
* Design a healthy packed lunch
* Carry out a simple test to measure the fat content of crisps
* Describe ways to maintain health and care for our bodies through exercise
* Observe changes in heart rate and breathing and record data in a simple table

**Growth*** *Notice that animals, including humans, have offspring which grow into adults*
* Recognise that not all animal offspring look like their parents
* Create simple representations of the life cycle of a chicken, frog and mammal
* Understand that most mammals give birth to live young and most other animals lay eggs
* Identify and sequence the stages of the human life cycle
* Gather and record data to help them answer the question ‘Do older children always have longer feet?
 | **Materials Matter** * *Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper,* rubber, fabric *and cardboard for particular uses*
* *Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching*
* Perform simple tests of bounciness and absorbency with increasing independence
* Gather and record data by taking simple measurements and completing tables
* Understand the importance of Charles Macintosh’s work
 | - | **Longitudinal study (microhabitats):** Investigate how we can attract the most minibeasts to our bug hotel throughout the year**Animal Habitats – Dead or Alive*** *Explore and compare the differences between things that are living, dead and things that have never been alive*
* *Identify and name a variety of plants and animals in…*familiar habitats, including pond habitats, woodland habitats and habitats within the school grounds.
* *Identify that most living things live in habitats to which they are suited and describe how different habitats* (woodland, pond and habitats within the school grounds) *provide for the basic needs of different kinds of animals and plants, and how they depend on each other*
* *Describe how animals* (within familiar habitats) *obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food*
* Construct a simple food chain including a blackbird

**Habitats around the World*** *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*
* *Identify and name a variety of plants and animals in their habitats*
* *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*
* Understand how dangers to the environment can endanger habitats
* Use observations to suggest how animals are suited to Arctic and Antarctic habitats and different parts of the ocean
* Suggest answers to the question ‘How can we protect the ocean habitat?’
* Construct a simple food chain including a penguin
 |