

## Science Year B

### Year 1/2

#### **Investigation skills**

asking simple questions and recognising that they can be answered in different ways  
observing closely, using simple equipment performing simple tests identifying and classifying  
using their observations and ideas to suggest answers to questions gathering and recording  
data to help in answering questions.

#### **Longitudinal study 1.1 2.1 Our Environment**

Know how to respect living things in their environment

Ask simple questions and recognise that they can be answered in different ways

Describe the changes that take place in vegetation and animal life in a habitat and a  
micro-habitat across the four seasons

Present their ideas and evidence in appropriate ways

Use simple scientific vocabulary to describe their ideas and observations

#### **Autumn**

##### **2.2 Living Things**

explore and compare the differences between things that are living, dead, and things that have  
never been alive

describe the characteristics of living things

know that plants are living things

- identify whether things are alive, dead or have never lived

##### **2.6 Habitats**

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

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

- name different plants and animals and describe how they are suited to different habitats
- describe how animals get their food from other animals and/or from plants, and use  
simple food chains to describe these relationships

#### **Spring**

##### **2.3 Animals needs**

know that animals, including humans, have offspring which grow into adults

describe the basic needs of animals, including humans, for survival

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

- describe the importance of exercise, a balanced diet and hygiene for humans

#### **Summer**

##### **2.4 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.

- describe the basic needs of plants for survival and the impact of changing these the  
main changes as seeds and bulbs grow into mature plants

**Investigation skills**

asking relevant questions and using different types of scientific enquiries to answer them  
setting up simple practical enquiries, comparative and fair tests making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers gathering, recording, classifying and presenting data in a variety of ways to help in answering questions recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions identifying differences, similarities or changes related to simple scientific ideas and processes using straightforward scientific evidence to answer questions or to support their findings.

**Autumn**

**4.3 Digestion**

describe the simple functions of the basic parts of the digestive system in humans  
identify the different types of teeth in humans and their simple functions

- name and describe the functions of the main parts of the digestive system

**Habitats**

construct and interpret a variety of food chains, identifying producers, predators and prey.  
recognise that environments can change and that this can sometimes pose dangers to living things.

- construct and interpret food chains
- explain how environmental changes may have an impact on living things

**Spring**

**3.2 Animals**

identify that humans and some other animals have skeletons and muscles for support, protection and movement.

- name and describe the functions of the main parts of the musculoskeletal system

**4.2 Classification**

recognise that living things can be grouped in a variety of ways  
explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment

**Summer**

**4.5 Sound**

identify how sounds are made, associating some of them with something vibrating  
recognise that vibrations from sounds travel through a medium to the ear  
find patterns between the pitch of a sound and features of the object that produced it  
find patterns between the volume of a sound and the strength of the vibrations that produced it

recognise that sounds get fainter as the distance from the sound source increases

- use the idea that sounds are associated with vibrations, and that they require a medium to travel through, to explain how sounds are made and heard
- describe the relationship between the pitch of a sound and the features of its source; and
- describe the relationship between the volume of a sound, the strength of the vibrations

and the distance from its source

### 3.3 Forces and magnets

compare how things move on different surfaces

notice that some forces need contact between two objects, but magnetic forces can act at a distance

observe how magnets attract or repel each other and attract some materials and not others  
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

describe magnets as having two poles

predict whether two magnets will attract or repel each other, depending on which poles are facing.

- describe the effects of simple forces that act at a distance: magnetic forces, including those between like and unlike magnetic poles

Y5/6

### Investigation Skills

planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs using test results to make predictions to set up further comparative and fair tests reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations identifying scientific evidence that has been used to support or refute ideas or arguments.

### Autumn

#### 5.4 Mixtures

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

know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution

use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating

give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic

demonstrate that dissolving, mixing and changes of state are reversible changes

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.

- identify and describe what happens when dissolving occurs in everyday situations;
- describe how to separate mixtures and solutions into their components
- identify, with reasons, whether changes in materials are reversible or not

### Spring

#### 6.2 Heart & Lungs

identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood

recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function

describe the ways in which nutrients and water are transported within animals, including

humans.

- name and describe the functions of the main parts of circulatory systems
- describe the effects of diet, exercise, drugs and lifestyle on how the body functions

## Summer

### **6.4 Electricity**

associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit

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

- use recognised symbols when representing a simple circuit in a diagram.
- use simple apparatus to construct and control a series circuit
- describe how the circuit may be affected when changes are made to it;
- use recognised symbols to represent simple series circuit diagrams

### **6.5 Light**

recognise that light appears to travel in straight lines

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

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

use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.

- use the idea that light from light sources, or reflected light, travels in straight lines and enters our eyes to explain how we see objects, the formation, shape and size of shadows