Science Year B

EYFS

Autumn
All about me - describing people in the child's family and circle of friends. Understand that babies grow up and adults age.
Exploring light and dark - exploring sources of light and materials that so / do not let light through.

Spring
Exploring transport and space - exploring forces that make things move; exploring objects that fall to earth slowly e.g feathers and parachutes; exploring wheels and axles; exploring the Earth, Sun, Moon and stars; know that we can travel on land and water, underwater and through the air.

Exploring materials - explore materials and their properties, including sinking and floating / cooling and heating changes e.g. linked to melting / freezing and cooking.

Summer
Exploring living things - recognising and naming a range of animals, exploring mini-beasts, investigating life-cycles of e.g. frogs and butterflies.
Exploring a range of trees and plants, growing plants from seeds and bulbs, exploring plants that we can eat. Name a range of common plants.

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

Science Y3/4

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