

# Year 1

## Plants

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.

### Key Vocabulary

Leaf, flower, blossom, petal, fruit, berry, root, seed, trunk, branch, stem, bark, stalk, bud  
Names of trees in the local area  
Names of garden and wild flowering plants in the local area

## 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.

### Key Vocabulary

head, body, eyes, ears, mouth, teeth, leg, tail, wing, claw, fin, scales, feathers, fur, beak, paws, hooves, names of animals experienced first-hand from each vertebrate group, parts of the body including those within the school's RSE policy, senses, touch, see, smell, taste, hear, fingers, skin, eyes, nose, ear, tongue

## Everyday 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 a variety of everyday materials on the basis of their simple physical properties.

### Key Vocabulary

Object, material, wood, plastic, glass, metal, water, rock, brick, paper, fabric, elastic, foil, card/cardboard, rubber, wool, clay, hard, soft, stretchy, stiff, bendy, floppy, waterproof, absorbent, breaks/tears, rough, smooth, shiny, dull, see-through, not see-through

## Seasonal Change

Observe changes across the four seasons.

Observe and describe weather associated with the seasons and how day length varies.

### Key Vocabulary

weather, sunny, rainy, raining, shower, windy, snowy, cloudy, hot, warm, cold, storm, thunder, lightning, hail, sleet, snow, icy, frost, puddles, rainbow, seasons, winter, summer, spring, autumn, Sun, sunrise, sunset, day length

# Year 2

## Living Things and their Habitat

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

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, 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

### Key Vocabulary

living, dead, never been alive, suited, suitable, basic needs, food, food chain, shelter, move, feed, water, air, survive, survival, names of local habitats (e.g. pond, woodland etc.), names of micro-habitats (e.g. under logs, in bushes etc.), conditions, light, dark, shady, sunny, wet, damp, dry, hot, cold, names of living things in the habitats and microhabitats studied

## 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.

### Key Vocabulary

light, shade, sun, warm, cool, water, space, grow, healthy, bulb, germinate, shoot, seedling

## Animals, including Humans

Notice that animals, including humans, have offspring which grow into adults.

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.

### Key Vocabulary

offspring, reproduction, growth, baby, toddler, child, teenager, adult, old person, names of animals and their babies (e.g. chick/hen, kitten/cat, caterpillar/butterfly), survive, survival, water food, air, exercise, heartbeat, breathing, hygiene, germs, disease, food types (e.g. meat, fish, vegetables, bread, rice, pasta, dairy)

## Uses of Everyday Materials

Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper 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.

### Key Vocabulary

wood, metal, plastic, glass, brick, rock, paper, cardboard, opaque, transparent and translucent, reflective, non-reflective, flexible, rigid Shape, push/pushing, pull/pulling, twist/twisting, squash/squashing, bend/bending, stretch/stretching

# Year 1 & 2– Working Scientifically

Asking questions and recognising that they can be answered in different ways

Asking simple questions and recognising that they can be answered in different ways

Answering questions and concluding observations and taking measurements

Using their observations and ideas to suggest answers to questions

Making observations and taking measurements

Observing closely, using simple equipment

Recording and presenting evidence

Gathering and recording data to help in answering questions

Engaging in practical enquiry to answer questions

Performing simple tests

Identifying and classifying

# Year 3

## Plants

Identify and describe the functions of different parts of flowering plants: roots; stem/trunk; leaves; and flowers.

Explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant.

Investigate the way in which water is transported within plants.

Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.

### Key Vocabulary

photosynthesis, pollen, insect/wind pollination, male, female, seed formation, seed dispersal (wind dispersal, animal dispersal, water dispersal), air, nutrients, minerals, soil, absorb, transport

## Forces & 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.

### Key Vocabulary

Force, push, pull, twist, contact force, non-contact force, magnetic force, magnet, strength, bar magnet, ring magnet, button magnet, horseshoe magnet, attract, repel, magnetic material, metal, iron, steel, poles, north pole, south pole

## Animals, including Humans

Identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food – they get nutrition from what they eat.

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

### Key Vocabulary

nutrition, nutrients, carbohydrates, sugars, protein, vitamins, minerals, fibre, fat, water, skeleton, bones, muscles, joints, support, protect, move, skull, ribs, spine

## Light

Recognise that they need light in order to see things, and that dark is the absence of light.

Notice that light is reflected from surfaces.

Recognise that light from the sun can be dangerous and that there are ways to protect their eyes.

Recognise that shadows are formed when the light from a light source is blocked by an opaque object..

Find patterns in the way that the size of shadows change.

### Key Vocabulary

light, light source, sun, sunlight, dangerous

## Rocks

Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties.

Describe in simple terms how fossils are formed when things that have lived are trapped within rock.

Recognise that soils are made from rocks and organic matter.

### Key Vocabulary

rock, stone, pebble, boulder, grain, crystals, layers, hard, soft, texture, absorb water, fossil, bone, flesh, minerals, marble, chalk, granite, sandstone, slate, soil, types of soil (e.g. peaty, sandy, chalk, clay)

# Year 4

## Animals including Humans

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.  
Construct and interpret a variety of food chains, identifying producers, predators and prey.

### Key Vocabulary

digestive system, digestion, mouth, teeth, saliva, oesophagus, stomach, small intestine, nutrients, large intestine, rectum, anus, teeth, incisor, canine, molar, premolars, herbivore, carnivore, omnivore, producer, predator, prey, food chain

## States of Matter

Compare and group materials together, according to whether they are solids, liquids or gases.  
Observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C).  
Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature

### Key Vocabulary

solid, liquid, gas, heating, cooling, state change, melting, freezing, melting point, boiling, boiling point, evaporation, condensation, temperature, water cycle

## 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.

### Key Vocabulary

Sound, source, vibrate, vibration, travel, pitch (high, low), volume, faint, loud, insulation

## Electricity

Identify common appliances that run on electricity.  
Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers.  
Identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery.  
Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit.  
Recognise some common conductors and insulators, and associate metals with being good conductors.

### Key Vocabulary

electricity, electrical appliance/device, mains, plug, electrical circuit, complete circuit, component, cell, battery, positive, negative, connect/connections, loose connection, short circuit, crocodile clip, bulb, switch, buzzer, motor, conductor, insulator, metal, non-metal, symbol

# Year 3 & 4– Working Scientifically

## Asking questions and recognising that they can be answered in different ways

Asking relevant questions and using different types of scientific enquiries to answer them

## Engaging in practical enquiry to answer questions

Setting up simple practical enquiries, comparative and fair tests

## Answering questions and concluding observations and taking measurements

Using straightforward scientific evidence to answer questions or to support their findings

Identifying differences, similarities or changes related to simple scientific ideas and processes

## Communicating their findings

Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions

## Making observations and taking measurements

Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers

## Recording and presenting evidence

Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions

## Evaluating and raising further questions and predictions

Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions

Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions

# Year 5

## Living Things and their Habitats

Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird.  
Describe the life process of reproduction in some plants and animals

### Key Vocabulary

life cycle, reproduce, sexual, fertilises, asexual, plantlets, runners, tubers, bulbs, cuttings

## Properties and changes of materials

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

### Key Vocabulary

thermal/electrical insulator/conductor, change of state, mixture, dissolve, solution, soluble, insoluble, filter, sieve, reversible/non-reversible change, burning, rusting, new material

## Animals including Humans

Describe the changes as humans develop to old age.

### Key Vocabulary

Puberty – the vocabulary to describe sexual characteristics

## Earth & Space

Describe the movement of the Earth, and other planets, relative to the Sun in the solar system.

Describe the movement of the Moon relative to the Earth.

Describe the Sun, Earth and Moon as approximately spherical bodies.

Use the idea of the Earth's rotation to explain day and night and the apparent movement of the Sun across the sky

### Key Vocabulary

Sun, Moon, Earth, planets, Mercury, Jupiter, Saturn, Venus, Mars, Uranus, Neptune, spherical, Solar System, rotate, star, orbit

## Forces

Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.

Identify the effects of air resistance, water resistance and friction that act between moving surfaces.

Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.

### Key Vocabulary

force, gravity, Earth, air resistance, water resistance, friction, mechanisms, simple machines, levers, pulleys, gears

# Year 6

## Living Things and their Habitats

Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals. Give reasons for classifying plants and animals based on specific characteristics.

### Key Vocabulary

vertebrates, fish, amphibians, reptiles, birds, mammals, invertebrates, warm-blooded, cold-blooded, insects, spiders, snails, worms, flowering, non-flowering, mosses, ferns, conifers

## Animals including Humans

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.

### Key Vocabulary

heart, pulse, rate, pumps, blood, blood vessels, transported, lungs, oxygen, carbon dioxide, nutrients, water, muscles, cycle, circulatory system, diet, exercise, drugs, lifestyle

## Evolution and Inheritance

Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago. Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents. Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.

### Key Vocabulary

offspring, sexual reproduction, vary, characteristics, suited, adapted, environment, inherited, species, fossils, evolve, evolution

## 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.

### Key Vocabulary

As for Year 3 - Light, plus straight lines, light rays

## 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.

### Key Vocabulary

Circuit, complete circuit, circuit diagram, circuit symbol, cell, battery, bulb, buzzer, motor, switch, voltage



# Year 5 & 6– Working Scientifically

## Asking questions and recognising that they can be answered in different ways

Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary

## Answering questions and concluding observations and taking measurements

Identifying scientific evidence that has been used to support or refute ideas or arguments

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

## Communicating their findings

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

## Making observations and taking measurements

Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate

## Recording and presenting evidence

Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs

## Engaging in practical enquiry to answer questions

Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary

## Evaluating and raising further questions and predictions

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

Using test results to make predictions to set up further comparative and fair tests