

Science



Science is separated into two areas: knowledge and skills (working scientifically). These areas are taught practically through a variety of topics.

Year 3 and 4

Biology

Plants

- To identify and describe the function of different parts of flowering plants.
- To explore and describe the needs of different plants for life and growth.
- To investigate how water is transported within plants.
- To explore the part that flowers play the life cycle of flowering plants (including pollination, seed formation and seed dispersal).

Animals, including humans

- To explain the importance of a nutritious, balanced diet.
- To explain how nutrients, water and oxygen are transported within animals and humans.
- To describe the skeletal system in humans and animals and explain the purpose.
- To describe and explain the muscular system of a human.
- To identify and name the parts of the human digestive system.
- To describe the functions of the organs in the human digestive system.
- To identify and describe the different types of teeth in humans.
- To describe the functions of different human teeth.
- To use and construct food chains to identify producers, predators and prey.

Living things and their habitats

- To group living things in different ways.
- To use classification keys to group, identify and name living things.
- To create classification keys to group, identify and name living things (for others to use).
- To describe how changes to an environment could endanger living things.

Chemistry

States of matter

- To compare and group materials based on their state of matter (solid, liquid, gas).
- To explore and describe how some materials can change state.
- To measure the temperature at which materials change state.
- To describe the water cycle and explain the part played by evaporation and condensation.

Rocks

- To compare and group rocks based on their appearance and physical properties.
- To describe how fossils are formed.
- To explain how soil is made.

Physics

Light

- To explain that light is needed in order to see.
- To describe what dark is (the absence of light).
- To explain that light is reflected from a surface.
- To explain the danger of direct sunlight and describe how to keep protected.
- To explain and demonstrate how a shadow is formed.
- To explore the way that the size of shadows change.

Forces and magnets

- To explore and describe how objects move on different surfaces.
- To explain how some forces require contact and some do not, giving examples.
- To explore and explain how objects attract and repel in relation to objects and other magnets.
- To predict whether objects will be magnetic and carry out an enquiry to test this out.
- To describe how magnets work.
- To predict whether magnets will attract or repel and give a reason.

Sound

- To describe how sound is made.
- To explain how sound travels from a source to our ears.
- To explore patterns between the pitch of a sound and the features of the object that produced it.
- To explore patterns between the volume of a sound and the strength of vibrations that produced it.
- To describe what happens to a sound as it travels away from its source.

Electricity

- To identify and name appliances that require electricity to function.
- To construct a series circuit.
- To identify and name the components in a series circuit (including cells, wires, bulbs, switches and buzzers).
- To draw a circuit diagram.
- To predict and test whether a lamp will light within a circuit.
- To describe the function of a switch in a circuit.
- To describe the difference between conductors and insulators; giving examples of each.

Year 5

Biology

Living things and their habitats

- To describe the life cycle of different living things.
- To describe the differences between different life cycles.
- To describe the process of reproduction in plants and animals.

Animals, including humans

- To describe the changes as humans develop to old age.

Chemistry

Properties and changes of materials

- To compare and group materials based on their properties including hardness, solubility, transparency, conductivity (electrical & thermal) and response to magnets.
- To describe how a material dissolves to form a solution; explaining the process of dissolving.
- To describe and show how to recover a substance from a solution.
- To describe how some materials can be separated.
- To demonstrate how materials can be separated (e.g. through filtering, sieving and evaporating).
- I know and can demonstrate that some changes are reversible and some are not.
- To explain how some changes result in the formation of a new material and that this is usually irreversible.

Physics

Earth and space

- To describe and explain the movement of the Earth and other planets relative to the Sun.
- To describe and explain the movement of the Moon relative to the Earth.
- To describe the Sun, Earth and Moon (using the term spherical).
- To explain and demonstrate how night and day are created.

Forces

- To explain what gravity is.
- To identify and explain the effects of air resistance, water resistance and friction.
- To explain how levers, pulleys and gears allow a smaller force to have a greater effect.

Year 6

Biology

Living things and their habitats

- To classify living things into broad groups according to observable characteristics and based on similarities & differences.
- To give reasons for classifying plants and animals in a specific way.

Animals, including humans

- To identify and name the main parts of the human circulatory system.
- To describe the function of the heart, blood vessels and blood.
- To discuss the impact of diet, exercise, drugs and lifestyle on the health of an individual.
- To describe the ways in which nutrients and water are transported in animals, including humans.

Evolution and inheritance

- To describe how the earth and living things have changed over time.
- To explain how fossils can be used to find out about the past.
- To explain about reproduction and offspring (recognising that offspring normally vary and are not identical to their parents).
- To explain how animals and plants are adapted to suit their environment.
- To explain evolution and link it to adaptation over time.

Chemistry - No content

Physics

Light

- To explain how light travels.
- To explain and demonstrate how we see objects.
- To explain why shadows have the same shape as the object that casts them.
- To explain how simple optical instruments work, e.g. periscope, telescope, binoculars, mirror, magnifying glass etc.

Electricity

- To explain how the number & voltage of cells in a circuit links to the brightness of a lamp or the volume of a buzzer.
- To compare and give reasons for why components work and do not work in a circuit.
- To draw circuit diagrams using correct symbols.

Working scientifically

Year 3 and 4



Year 5 and 6

