
Stage 2

Scientific enquiry

Ideas and evidence

- **2Ep1** Collect evidence by making observations when trying to answer a science question
- **2Ep2** Use first hand experience, e.g. observe melting ice
- **2Ep3** Use simple information sources

Plan investigative work

- **2Ep4** Ask questions and suggest ways to answer them
- **2Ep5** Predict what will happen before deciding what to do
- **2Ep6** Recognise that a test or comparison may be unfair

Obtain and present evidence

- **2Eo1** Make suggestions for collecting evidence
- **2Eo2** Talk about risks and how to avoid danger
- **2Eo3** Make and record observations
- **2Eo4** Take simple measurements
- **2Eo5** Use a variety of ways to tell others what happened

Consider evidence and approach

- **2Eo6** Make comparisons
- **2Eo7** Identify simple patterns and associations
- **2Eo8** Talk about predictions (orally and in text), the outcome and why this happened
- **2Eo9** Review and explain what happened

Biology

Living things in their environment

- **2Be1** Identify similarities and differences between local environments and know about some of the ways in which these affect the animals and plants that are found there
- **2Be2** Understand ways to care for the environment. Secondary sources can be used
- **2Be3** Observe and talk about their observation of the weather, recording reports of weather data

Chemistry

Material properties

- **2Cp1** Recognise some types of rocks and the uses of different rocks
- **2Cp2** Know that some materials occur naturally and others are man-made

Material changes

- **2Cc1** Know how the shapes of some materials can be changed by squashing, bending, twisting and/or stretching
- **2Cc2** Explore and describe the way some everyday materials change when they are heated or cooled
- **2Cc3** Recognise that some materials can dissolve in water

Physics

Light and dark

- **2Pl1** Identify different light sources including the sun
- **2Pl2** Know that darkness is the absence of light
- **2Pl3** Be able to identify shadows

Electricity

- **2Pm1** Recognise the components of simple circuits involving cells (batteries)
- **2Pm2** Know how a switch can be used to break a circuit

The Earth and beyond

- **2Pb1** Explore how the sun *appears* to move during the day and how shadows change
- **2Pb2** Model how the spin of the Earth leads to day and night, e.g. with different sized balls and a torch

Stage 3

E Scientific enquiry

Ep Ideas and evidence

- **3Ep1** Collect evidence in a variety of contexts to answer questions or test ideas

Ep Plan investigative work

- **3Ep2** Suggest ideas, make predictions and communicate these
- **3Ep3** With help, think about collecting evidence and planning fair tests

Eo Obtain and present evidence

- **3Eo1** Observe and compare objects, living things and events
- **3Eo2** Measure using simple equipment and record observations in a variety of ways
- **3Eo3** Present results in drawings, bar charts and tables

Eo Consider evidence and approach

- **3Eo4** Draw conclusions from results and begin to use scientific knowledge to suggest explanations
- **3Eo5** Make generalisations and begin to identify simple patterns in results

B Biology

Bp Plants

- **3Bp1** Know that plants have roots, leaves, stems and flowers
- **3Bp2** Explain observations that plants need water and light to grow
- **3Bp3** Know that water is taken in through the roots and transported through the stem
- **3Bp4** Know that plants need healthy roots, leaves and stems to grow well
- **3Bp5** Know that plant growth is affected by temperature

Bh Humans and animals

- **3Bh1** Know life processes common to humans and animals include nutrition (water and food), movement, growth and reproduction
- **3Bh2** Describe differences between living and non-living things using knowledge of life processes
- **3Bh3** Explore and research exercise and the adequate, varied diet needed to keep healthy
- **3Bh4** Know that some foods can be damaging to health, e.g. very sweet and fatty foods
- **3Bh5** Explore human senses and the ways we use them to learn about our world
- **3Bh6** Sort living things into groups, using simple features and describe rationale for groupings

C Chemistry

Cp Material properties

- **3Cp1** Know that every material has specific properties, e.g. hard, soft, shiny
- **3Cp2** Sort materials according to their properties
- **3Cp3** Explore how some materials are magnetic but many are not
- **3Cp4** Discuss why materials are chosen for specific purposes on the basis of their properties

P Physics

Pf Forces and motion

- **3Pf1** Know that pushes and pulls are examples of forces and that they can be measured with forcemeters
- **3Pf2** Explore how forces can make objects start or stop moving
- **3Pf3** Explore how forces can change the shape of objects
- **3Pf4** Explore how forces, including friction, can make objects move faster or slower or change direction

Stage 4

E Scientific enquiry

Ep Ideas and evidence

- **4Ep1** Collect evidence in a variety of contexts
- **4Ep2** Test an idea or prediction based on scientific knowledge and understanding

Ep Plan investigative work

- **4Ep3** Suggest questions that can be tested and make predictions; communicate these
- **4Ep4** Design a fair test and plan how to collect sufficient evidence
- **4Ep5** Choose apparatus and decide what to measure

Eo Obtain and present evidence

- **4Eo1** Make relevant observations and comparisons in a variety of contexts
- **4Eo2** Measure temperature, time, force and length
- **4Eo3** Begin to think about the need for repeated measurements of, for example, length
- **4Eo4** Present results in drawings, bar charts and tables

Eo Consider evidence and approach

- **4Eo5** Identify simple trends and patterns in results and suggest explanations for some of these
- **4Eo6** Explain what the evidence shows and whether it supports predictions. Communicate this clearly to others
- **4Eo7** Link evidence to scientific knowledge and understanding in some contexts

B Biology

Bh Humans and animals

- **4Bh1** Know that humans (and some animals) have bony skeletons inside their bodies
- **4Bh2** Know how skeletons grow as humans grow, support and protect the body
- **4Bh3** Know that animals with skeletons have muscles attached to the bones
- **4Bh4** Know how a muscle has to contract (shorten) to make a bone move and muscles act in pairs
- **4Bh5** Explain the role of drugs as medicines

Be Living things in their environment

- **4Be1** Investigate how different animals are found in different habitats and are suited to the environment in which they are found
- **4Be2** Use simple identification keys
- **4Be3** Recognise ways that human activity affects the environment, e.g. river pollution, recycling waste

C Chemistry

Cs States of matter

- **4Cs1** Know that matter can be solid, liquid or gas
- **4Cs2** Investigate how materials change when they are heated and cooled
- **4Cs3** Know that melting is when a solid turns into a liquid and is the reverse of freezing
- **4Cs4** Observe how water turns into steam when it is heated but on cooling the steam turns back into water

P Physics

Ps Sound

- **4Ps1** Explore how sounds are made when objects, materials or air vibrate and learn to measure the volume of sound in decibels with a sound level meter
- **4Ps2** Investigate how sound travels through different materials to the ear
- **4Ps3** Investigate how some materials are effective in preventing sound from travelling through them
- **4Ps4** Investigate the way *pitch* describes how high or low a sound is and that high and low sounds can be loud or soft. Secondary sources can be used
- **4Ps5** Explore how pitch can be changed in musical instruments in a range of ways

Pm Electricity and magnetism

- **4Pm1** Construct complete circuits using switch, cell (battery), wire and lamps
- **4Pm2** Explore how an electrical device will not work if there is a break in the circuit
- **4Pm3** Know that electrical current flows and that models can describe this flow, e.g. particles travelling around a circuit
- **4Pm4** Explore the forces between magnets and know that magnets can attract or repel each other
- **4Pm5** Know that magnets attract some metals but not others