



Science an Introduction

The principal focus of science teaching in key stage 1 is to enable pupils to experience and observe phenomena, looking more closely at the natural and humanly-constructed world around them. They should be encouraged to be curious and ask questions about what they notice. They should be helped to develop their understanding of scientific ideas by using different types of scientific enquiry to answer their own questions, including observing changes over a period of time, noticing patterns, grouping and classifying things, carrying out simple comparative tests, and finding things out using secondary sources of information. They should begin to use simple scientific language to talk about what they have found out and communicate their ideas to a range of audiences in a variety of ways. Most of the learning about science should be done through the use of first-hand practical experiences, but there should also be some use of appropriate secondary sources, such as books, photographs and videos.

The national curriculum for science aims to ensure that all pupils:

- Develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics
- Develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them
- Are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future.



| Biology | | | |
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| Concept – 1) Living things can be classified according to observable features -There is no content for this Concept in Year 2. | | | |
| Biology | | | |
| Concept – 2) Habitats provide living things with what they need | | | |
| Strand (as per NC) | Working towards ARE | ARE (NC) | Beyond ARE |
| 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 | I can identify that a habitat supplies living things with what they need. | I can explain how, for a named animal or plant, it gets what it needs from its habitat and other living things that are there. | I can explain why there may be a limit as to how many of a certain living thing can live in a particular area. |
| Identify and name a variety of plants and animals in their habitats, including micro-habitats | I can identify a limited range of living things in their habitats. | I can identify a range of living things in habitats of various sizes. | I can identify a range of living things and suggest why they may be found in that habitat. |
| 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 | I can identify a predator– prey relationship. | I can construct a simple food chain and identify what is eating what. | I can suggest, within a simple food chain, what might happen if one of the living things becomes scarce. |



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| Find out and describe how plants need water, light and a suitable temperature to grow and stay health | I can find out one thing that plants need to grow and stay healthy. | I can explore and identify what plants need to thrive. | I can identify the effects of a shortage of each of the things that plants need to grow and stay healthy |
| Biology Concept - 3) Living things exhibit variation and adaptation and these may lead to evolution – There is no content for this concept in Year 2. | | | |
| Biology Concept - 4a) Life exists in a variety of forms and goes through cycles – Plants | | | |
| Strand (as per NC) | Working towards ARE | ARE (NC) | Beyond ARE |
| Observe and describe how seeds and bulbs grow into mature plants | I can identify seeds and bulbs grow into mature plants. | I can describe stages of development of a full grown plant. | I can compare and contrast the growth patterns of different types of plants. |
| Biology Concept - 4b) Life exists in a variety of forms and goes through cycles – Animals | | | |
| Strand (as per NC) | Working towards ARE | ARE (NC) | Beyond ARE |
| Notice that animals, including humans, have offspring which grow into adults | I can recognise that all animals, including humans, have offspring. | I can describe the relationship between adult animals and their offspring. | I can compare and contrast adults and their offspring for different animals. |
| Find out about and describe the basic needs of animals, including humans, for survival (water, food and air) | I can identify the basic needs of animals, including humans, for survival (water, food and air). | I can identify human's basic needs. | I can suggest how the basic needs of different animals influences their choice of habitat. |
| Biology Concept - 5) The human body has a number of systems, each with its own function | | | |
| Strand (as per NC) | Working towards ARE | ARE (NC) | Beyond ARE |
| Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene | I can recognise the importance to humans of exercise, diet and hygiene. | I can describe the importance of a healthy diet and exercise. | I can suggest effects of poor diet and hygiene. |



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| Chemistry Concept - 1) Different rocks have different properties and the formation of soil & fossils can be explained – There is no content for this Concept in Year 2. | | | |
| Chemistry Concept - 2) Materials have physical properties which can be investigated and compared | | | |
| Strand (as per NC) | Working towards ARE | ARE (NC) | Beyond ARE |
| Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching | I can identify that the shape of some objects can be changed. | I can describe changes achieved by applying forces in different directions. | I can identify that some changes to shapes are permanent and others are temporary, and that this can influence their uses. |
| Chemistry Concept - 3) The physical properties of materials determine their uses | | | |
| Strand (as per NC) | Working towards ARE | ARE (NC) | Beyond ARE |
| Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses | I can identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. | I can select and justify a material for a particular use. | For particular materials in particular uses, I can identify limitations as well as suitability. |
| Chemistry Concept - 4) Materials can exist in different states and that these states can sometimes be changed - There is no content for this Concept in Year 2. | | | |
| Physics Concept - 1) There are contact and non-contact forces; these affect the motion of objects - There is no content for this Concept in Year 2. 2) Day, night, month, seasonal change & year are caused by the position and movement of the Earth - There is no content for this Concept in Year 2. 3) Light & sound can be reflected & absorbed and enable us to see & hear - There is no content for this Concept in Year 2. 4) Electricity can make circuits work and can be controlled to perform useful functions - There is no content for this Concept in Year 2. | | | |



| Working Scientifically Concept - 1) Planning investigations (a) Pupils can ask questions, b) Pupils can plan an enquiry) | | | |
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| Strand (as per NC) | Working towards ARE | ARE (NC) | Beyond ARE |
| Ask simple questions | I can, with prompting, ask simple questions that can be tested. | I can ask simple questions that can be tested, e.g. about the local environment and how organisms depend on each other. | I can, with support, develop relevant, testable questions. |
| Recognise that questions can be answered in different way | I can offer way of gathering evidence to answer a question. | I can suggest different ways of answering a question, e.g. testing the suitability of materials for different purposes. | I can plan enquiry, such as a comparative or fair test. |
| Working Scientifically Concept – 2) Conducting experiments - (a) Pupils can use equipment to take measurements) | | | |
| Strand (as per NC) | Working towards ARE | ARE (NC) | Beyond ARE |
| Observe closely, using simple equipment | I can examine objects closely, e.g. pebbles. | I can examine carefully, e.g. using a hand lens. | I can observe carefully and suggest useful measurements, e.g. examine a leaf and suggest measuring its length. |
| Perform simple tests | I can, with support, conduct simple tests. | I can conduct simple tests, e.g. setting up comparative tests to show that plants need water and light. | I can conduct a series of simple tests. |
| Working Scientifically Concept - 3) Recording evidence – (a) Pupils record work with diagrams and label them) | | | |
| Strand (as per NC) | Working towards ARE | ARE (NC) | Beyond ARE |
| Record and communicate their findings in a range of ways and begin to use simple scientific language | I can, with prompting, identify what might usefully be recorded. | I can, with assistance, draw and label diagrams, e.g. recording plants changing over time, starting from seed or bulb. | I can, with prompting, draw and label diagrams. |



| Working Scientifically | | | |
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| 4) Reporting findings – (a) Pupils process findings to develop conclusions and identify causal relationships) | | | |
| Strand (as per NC) | Working towards ARE | ARE (NC) | Beyond ARE |
| Identify and classify | I can identify key findings from an enquiry. | I can identify and group key outcomes from enquiry, e.g. describing conditions in different habitats and how these affect the numbers and types of organisms. | I can, with prompting, suggest what an enquiry shows. |
| Working Scientifically | | | |
| 5) Conclusions and predictions – (a) Pupils can analyse data, b) Pupils can draw conclusions) | | | |
| Strand (as per NC) | Working towards ARE | ARE (NC) | Beyond ARE |
| Gather and record data to help answer questions | I can collect data. | I can collect data relevant to the answering of questions, e.g. seeing how the shapes of some materials can be changed. | I can recognise patterns that relate to scientific ideas, when prompted. |
| Use their observations and ideas to suggest answers to questions | I can suggest answers to enquiry questions using data. | I can answer enquiry questions using data and ideas, e.g. to help decide how the properties of certain materials make them suitable for certain applications. | I can, with support, use evidence to produce simple conclusion. |

'Working scientifically' is described separately in the programme of study, but must always be taught through and clearly related to the teaching of substantive science content in the programme of study. Throughout the notes and guidance, examples show how scientific methods and skills might be linked to specific elements of the content.

Pupils should read and spell scientific vocabulary at a level consistent with their increasing word reading and spelling knowledge at key stage 1.