

SCIENCE - Progression in Key Learning



| | | Reception | Year 1/2 | Year 3/4 | Year 5/6 Year |
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| Asking Questions | Asking Questions | <ul style="list-style-type: none"> 30-50 comments and asks questions about aspects of their familiar world such as the place where they live or the natural world | Pupils should be taught to: <ul style="list-style-type: none"> ask simple questions and recognise that they can be answered in different ways | Pupils should be taught to: <ul style="list-style-type: none"> ask relevant questions and use different types of scientific enquiries to answer them set up simple practical enquiries, comparative and fair tests | Pupils should be taught to: <ul style="list-style-type: none"> plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary |
| | Measuring and Recording | <ul style="list-style-type: none"> 30-50 can talk about some of the things they have observed in the world 40-60+ Looks closely at similarities, differences, patterns and change 40-60+ months Create simple representations of events, people and objects Self-Confidence & Self- Awareness <p>Exceeding: Can talk about the plans they have made to carry out activities and what they might change if they were to repeat the.</p> | Pupils should be taught to: <ul style="list-style-type: none"> observe closely, using simple equipment perform simple tests gather and record data to help in answering questions | Pupils should be taught to: <ul style="list-style-type: none"> make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables gather, record, classify and present data in a variety of ways to help in answering questions | Pupils should be taught to: <ul style="list-style-type: none"> take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs |
| | Concluding | <ul style="list-style-type: none"> 40-60+ Talks about why things happen and how things work. <p>ELG The World: Explain why some things occur, and talk about changes</p> | Pupils should be taught to: <ul style="list-style-type: none"> identify and classify use their observations and ideas to suggest answers to questions | Pupils should be taught to: <ul style="list-style-type: none"> identify differences, similarities or changes related to simple scientific ideas and processes report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions use straightforward scientific evidence to answer questions or to support their findings | Pupils should be taught to: <ul style="list-style-type: none"> identify scientific evidence that has been used to support or refute ideas or argument report and present 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 |

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| Evaluating | | | Pupils should be taught to: | Pupils should be taught to: |
| | | | <ul style="list-style-type: none"> • use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions | <ul style="list-style-type: none"> • use test results to make predictions to set up further comparative and fair tests |

Biology

| Biology | | | | | | | |
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| | Reception | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| | | <i>Pupils should be taught to:</i> | <i>Pupils should be taught to:</i> | <i>Pupils should be taught to:</i> | <i>Pupils should be taught to:</i> | <i>Pupils should be taught to:</i> | <i>Pupils should be taught to:</i> |
| Plants | <ul style="list-style-type: none"> • 22-36 Notices detailed features of objects in their environment. • 30-50 Comments and asks questions about some of the things they have observed in the world. • Make observations of animals and plants and explain why some things occur, and talk about changes. • The World ELG: Knows about similarities and differences in relation to places, objects, materials and living things • The World ELG: Makes observations of plants and animals | <ul style="list-style-type: none"> • 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 | <ul style="list-style-type: none"> • 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 | <ul style="list-style-type: none"> • 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 | | | |

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| <p style="writing-mode: vertical-rl; transform: rotate(180deg);">Seasonal Change</p> | <p>Understanding the World- The World</p> <ul style="list-style-type: none"> • Develop an understanding of growth, decay and changes over time | <ul style="list-style-type: none"> • observe changes across the four seasons • observe and describe weather associated with the seasons and how day length varies | | | | | |
| <p style="writing-mode: vertical-rl; transform: rotate(180deg);">Animals including Humans</p> | <ul style="list-style-type: none"> • 40-60+ shows care and concern for living things and the environment • Make observations of animals and plants and explain why some things occur, and talk about changes. • The World ELG: Knows about similarities and differences in relation to places, objects, materials and living things • The World ELG: Makes observations of plants and animals • Health & Self-Care Exceeding: Knows about, and can make healthy choices in relation to, healthy eating and exercise | <ul style="list-style-type: none"> • 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 | <ul style="list-style-type: none"> • 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 | <ul style="list-style-type: none"> • 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 | <ul style="list-style-type: none"> • 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 | <ul style="list-style-type: none"> • describe the changes as humans develop to old age | <ul style="list-style-type: none"> • 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 |

Living Things and Their Habitats

- The World ELG: Knows about similarities and differences in relation to places, objects, materials and living things
- Talks about the features of their own immediate environment and how environments may vary from one another
- Exceeding: Knows that the environment and living things are influenced by human activity
- Exceeding: Can describe some actions which people in their own community do that help to maintain the area they live in.

- explore and compare the difference 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 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

- 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
- recognise that environments can change and that this can sometimes pose dangers to living things

- 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

- 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

Light

- recognise that they need light in order to see things and that the 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 a solid object
- find patterns in the way that the size of shadows changes

- 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

Forces

- 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 on 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

- 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

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| <p style="text-align: center;">Earth and Space</p> | | | | | | <ul style="list-style-type: none"> • describe the movement of the Earth, and other planets, relative to the Sun • 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 | |
| <p style="text-align: center;">Sound</p> | | | | | <ul style="list-style-type: none"> • 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 | | |

Materials

- 22-36 Notices detailed features of objects in their environment
- The World ELG: Knows about similarities and differences in relation to places, objects, **materials** and living things
- Exceeding: Knows the properties of some materials and can suggest some of the purposes they are used for
- Exceeding: Are familiar with basic scientific concepts such as floating, sinking, experimentation

- 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

- 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

- 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,

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| | | | | | | including changes associated with burning and the action of acid on bicarbonate of soda | |
| States of Matter | | | | | <ul style="list-style-type: none"> • 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 | | |
| Rocks | | | | <ul style="list-style-type: none"> • 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 | | | |

