

SCIENCE PROGRESSION IN KNOWLEDGE



| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
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| Life Processes (Biology) | <p>Different animals need different types of food.</p> <p>Animals, including humans, have different body parts ... and these have special functions to help them survive (including senses).</p> <p>Flowering plants have different parts - roots, stems, leaves, flowers, fruit, seeds.</p> | <p>Animals need water, food and air.</p> <p>To stay healthy animals need exercise, a balanced diet and hygiene.</p> <p>Some things are living, some are dead and some have never been alive.</p> <p>Plants need water, light and warmth.</p> | <p>Animals cannot make their own food</p> <p>Many animals, including humans, have skeletons and muscles for support, protection and movement</p> <p>Different parts of flowering plants have different functions. Roots and stems - nutrition, transport of water and support. Leaves - nutrition Flowers - reproduction</p> <p>To stay healthy plants need light, water, nutrients and room to grow</p> | <p>Animals and humans have teeth to help them eat</p> <p>Food is broken down further in the stomach and intestine and absorbed into the blood stream with water</p> | <p>Plants and animals need to reproduce</p> | <p>Oxygen is taken into the blood in the lungs; the blood is pumped by the heart to take oxygen and nutrients to the muscles</p> <p>Some substances and lifestyle choices can have a negative impact on health</p> |
| Classification (Biology) | <p>There is an enormous range of living things.</p> <p>Organisms are classified into groups at different levels based on similarities in observable characteristics.</p> <p>Differences between organisms are used to identify and name them as individual species.</p> <p>Plants are grouped into common wild and garden plants, deciduous and evergreen trees. Animals are grouped into fish, amphibians, reptiles, birds, mammals</p> | <p>Animals and plants can be identified and grouped. This is linked to habitat</p> | | <p>Plants and animals can be grouped using a wider range of characteristics</p> <p>The grouping of organisms becomes more detailed, depending on the purpose of the classification</p> <p>Keys are used for the identification of animals and plants</p> | | <p>A wider range of living things including micro-organism can be identified</p> |

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| | Plants and animals can be grouped using observable features | | | | | |
| Life Cycles and Interdependence (Biology) | <p>Plants and animals grow and change over the course of their lives.</p> <p>Plants: seeds and bulbs grow into plants</p> <p>Animals, including humans, reproduce offspring which grow into adults</p> <p>All living things are inter-dependent</p> <p>Different plants and animals live in different places to which they are suited—by giving them food and shelter.</p> <p>Animals get their food from plants and other animals and in turn are consumed by other animals</p> | Plants make seeds to produce more plants (sexual reproduction) | Nutrients made by plants move to primary consumers and then to secondary consumers through food chains | <p>Plants can reproduce asexually</p> <p>Life cycles differ for different species</p> <p>Human development has different stages between birth and death</p> | <p>Environmental change and human impact affects different habitats differently</p> <p>Plants and animals are adapted to suit their environment</p> <p>Living things have changed over time</p> <p>Living things produce offspring of the same kind, but not identical</p> <p>Adaptation may lead to evolution</p> | <p>Plants and animals grow and change over the course of their lives</p> <p>Plants: seeds and bulbs grow into plants</p> <p>Animals, including humans, reproduce offspring which grow into adults</p> <p>All living things are inter-dependent</p> <p>Different plants and animals live in different places to which they are suited—by giving them food and shelter.</p> <p>Animals get their food from plants and other animals and in turn are consumed by other animals</p> |
| Describing and Using Materials (Chemistry) | <p>There are different materials and they are used to make different objects</p> <p>Materials can be sorted into groups according to their observable properties</p> | Different materials are suitable for different uses (properties that can be observed) | | <p>All materials have mass</p> <p>Materials can be solids, liquids or gases</p> | <p>Materials can be sorted into groups according to properties including hardness, solubility, transparency, conductivity (electrical and thermal) and response to magnets</p> <p>Different properties make materials suitable for different uses (properties that can be measured)</p> | |

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| <p>Changing, Mixing and Separating Materials (Chemistry)</p> | <p>There are different materials and they are used to make different objects</p> | <p>The shape of some solid materials can be changed by a contact force acting on them</p> | <p>Materials can be mixed together</p> <p>Mixtures occur when materials are mixed together but don't react to each other</p> <p>Soils are a mixture of rocks and organic matter</p> <p>Fossils are formed when trapped within rock</p> | <p>Materials can be changed</p> <p>Some materials change state when heated or cooled Heating causes melting and evaporation Removing heat causes condensing and solidifying (freezing)</p> | <p>Some materials will dissolve in a liquid</p> <p>Changes including baking, burning and the reaction of certain chemicals result in new materials</p> <p>Changes that result in new materials are not usually reversible</p> <p>Dissolving, mixing and changes of state are reversible changes</p> <p>Mixtures can be separated by filtering, sieving and evaporating</p> | |
| <p>Light (Physics)</p> | <p>We see with our eyes</p> | | <p>We need light to see things Darkness is the absence of light</p> <p>Light travels from a light source in a straight line. Some materials let light pass through them</p> <p>When light hits a material, some of it is reflected off the material</p> <p>Some materials block the light and a shadow is formed</p> <p>The size of shadows change according to the size and shape of objects and distance from the light source</p> <p>There is a variety of sources of light, including the Sun</p> <p>Sunlight can be dangerous</p> | | | <p>Some materials reflect light better than others</p> <p>Light travels in straight lines</p> <p>We see light from a source reflected off an object into our eyes</p> <p>Shadows and reflections are different</p> <p>Shadows have the same shape as the object that casts them</p> |
| <p>Sound (Physics)</p> | <p>We hear with our ears.</p> | | | <p>Sounds can be different</p> <p>Sounds are made when something vibrates</p> <p>Sounds get fainter the further they are from the source</p> <p>Sound travels through a medium (solid, liquid or gas)</p> <p>Sound travels in all directions from a source</p> | | |

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| | | | | <p>The nature of sounds depends on how the vibrations are produced</p> <p>The volume of a sound can be changed</p> <p>The pitch of a sound can be changed</p> <p>Some materials reflect sound; some absorb sound and act as sound insulators</p> | | |
| Electricity (Physics) | | | | <p>Electrical appliances need a source of electricity to work.</p> <p>A complete circuit is needed for an electric current to flow.</p> <p>A circuit is made up of different components.</p> <p>A switch opens and closes a circuit.</p> <p>Some materials are better conductors than others.</p> | | <p>There are recognised symbols for circuits and their components.</p> <p>When a battery or cell is connected in a circuit, it provides a push (voltage) that causes electrons (current) flow in a circuit.</p> <p>An increase in voltage will cause an increase in current.</p> <p>For a fixed voltage an increase in resistance will cause a decrease in current.</p> <p>Some components can resist the current more than others.</p> |
| Forces (Physics) | | <p>Forces arise between two objects</p> <p>Pushing and /or pulling can make things start moving, stop, go faster or slower</p> | <p>Pushing and /or pulling can make things start moving, stop, go faster or slower or change their shape</p> <p>Some forces need contact between two objects (contact forces)</p> <p>Some forces act between objects although they are not in contact (non-contact forces)</p> <p>Magnets can act at a distance</p> <p>Magnets exert attractive and repulsive forces on each other</p> <p>Some materials are magnetic, some are not</p> | | <p>The force of gravity caused by the Earth pulls objects towards its centre</p> <p>Some mechanisms allow a smaller force to have a greater effect</p> <p>Drag forces resist movement</p> | |

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| | | | When one object moves over another one there will be a force between them that opposes motion. This is called friction. | | | |
| Earth in Space (Physics) | Temperature and day length changes over the year - this pattern is referred to as the seasons. | | | | <p>The Sun appears to move across the sky.</p> <p>The Earth, Sun and Moon are approximately spherical.</p> <p>The Earth is one of eight planets that orbit the Sun.</p> <p>The Moon orbits the Earth and looks different at different times of the month.</p> <p>The Earth orbits the Sun once every year.</p> <p>The seasons change as the Earth's position changes relative to the Sun.</p> <p>The Earth rotates on its own axis once every 24 hours.</p> <p>It is due to the rotation of the earth that we experience day and night.</p> | |