# SCIENCE
# PROGRESSION IN KNOWLEDGE

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

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

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

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

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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. | | | | The Sun appears to move across the sky.<br><br>The Earth, Sun and Moon are approximately spherical.<br><br>The Earth is one of eight planets that orbit the Sun.<br><br>The Moon orbits the Earth and looks different at different times of the month.<br><br>The Earth orbits the Sun once every year.<br><br>The seasons change as the Earth's position changes relative to the Sun.<br><br>The Earth rotates on its own axis once every 24 hours.<br><br>It is due to the rotation of the earth that we experience day and night. | |