



Science progression of knowledge  
*Bold is statutory objectives from NC*

| Strand                                       | Rec                                                                                                                                                                                                                                          | Y1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Y2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Y3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Y4                                                                                                                    | Y5                                                          | Y6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
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| Plants<br><br>Evolution and inheritance (Y6) | <p><b>ELG: The Natural World</b><br/>           *explore the natural world around them, making observations and drawings of animals and plants.</p> <p><b>(Forest school sessions to coincide with learning about the natural world)</b></p> | <p><b>Pupils should be taught to:</b></p> <ul style="list-style-type: none"> <li>• <b>identify and name a variety of common wild and garden plants, including deciduous and evergreen trees</b></li> <li>• <b>identify and describe the basic structure of a variety of common flowering plants, including trees</b></li> </ul> <p>Pupils should use the local environment throughout the year to explore and answer questions about plants growing in their habitat. Where possible, they should observe the growth of flowers and vegetables that they have planted. They should become familiar with</p> | <p><b>Pupils should be taught to:</b></p> <ul style="list-style-type: none"> <li>• <b>observe and describe how seeds and bulbs grow into mature plants</b></li> <li>• <b>find out and describe how plants need water, light and a suitable temperature to grow and stay healthy</b></li> </ul> <p>Pupils should use the local environment throughout the year to observe how plants grow. Pupils should be introduced to the requirements of plants for germination, growth and survival, as well as the processes of</p> | <p><b>Pupils should be taught to:</b></p> <ul style="list-style-type: none"> <li>• <b>identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers</b></li> <li>• <b>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</b></li> <li>• <b>investigate the way in which water is transported within plants</b></li> <li>• <b>explore the part that flowers play in the life cycle of flowering plants,</b></li> </ul> | <p><i>Recapped in Art (Georgia Totto O'Keeffe and her work on flowers) and Geography (through Rainfall topic)</i></p> | <p><i>Recapped Geography (through Rainforest topic)</i></p> | <p><b>Pupils should be taught to:</b></p> <ul style="list-style-type: none"> <li>• <b>recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago</b></li> <li>• <b>recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents</b></li> <li>• <b>identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution</b></li> </ul> |

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|  |  | <p>common names of flowers, examples of deciduous and evergreen trees, and plant structures (including leaves, flowers (blossom), petals, fruit, roots, bulb, seed, trunk, branches, stem).</p> <p><b>(Forest school session to coincide with lessons in Science unit.)</b></p> | <p>reproduction and growth in plants. Note: seeds and bulbs need water to grow but most do not need light; seeds and bulbs have a store of food inside them.</p> | <p><b>including pollination, seed formation and seed dispersal</b></p> <p>Pupils should be introduced to the relationship between structure and function: the idea that every part has a job to do. They should explore questions that focus on the role of the roots and stem in nutrition and support, leaves for nutrition and flowers for reproduction. Note: pupils can be introduced to the idea that plants can make their own food, but at this stage they do not need to understand how this happens.</p> <p><b>(Prior learning in Forest school sessions in Spring 2)</b></p> |  |  | <p>Building on what they learned about fossils in the topic on rocks in year 3, pupils should find out more about how living things on earth have changed over time. They should be introduced to the idea that characteristics are passed from parents to their offspring, for instance by considering different breeds of dogs, and what happens when, for example, labradors are crossed with poodles. They should also appreciate that variation in offspring over time can make animals more or less able to survive in particular environments, for example, by exploring how giraffes' necks got</p> |
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| Animals including humans | <b>ELG: The Natural World</b><br>*explore the natural world around them, making observations and drawings of animals and plants.<br><br><b>ELG: Managing Self</b> | <b>Pupils should be taught to:</b> <ul style="list-style-type: none"> <li>• identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals</li> <li>• identify and name a variety of common animals that are carnivores,</li> </ul> | <b>Pupils should be taught to:</b> <ul style="list-style-type: none"> <li>• notice that animals, including humans, have offspring which grow into adults</li> <li>• find out about and describe the basic needs of animals, including humans, for survival (water, food and air)</li> </ul> | <b>Pupils should be taught to:</b> <ul style="list-style-type: none"> <li>• 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</li> </ul> | <b>Pupils should be taught to:</b> <ul style="list-style-type: none"> <li>• describe the simple functions of the basic parts of the digestive system in humans</li> <li>• identify the different types of teeth in humans and their simple functions</li> <li>• construct and interpret a variety</li> </ul> | <b>Pupils should be taught to:</b> <ul style="list-style-type: none"> <li>• describe the changes as humans develop to old age</li> </ul> Pupils should draw a timeline to indicate stages in the growth and development of humans. They should learn about the changes | <b>Pupils should be taught to:</b> <ul style="list-style-type: none"> <li>• identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood</li> <li>• recognise the impact of diet, exercise, drugs</li> </ul>                                          |

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|  | <p>*Manage their own basic hygiene and personal needs, including dressing, going to the toilet and understanding the importance of healthy food choices</p> | <p><b>herbivores and omnivores</b></p> <ul style="list-style-type: none"> <li>• describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets)</li> <li>• identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense</li> </ul> <p>Pupils should use the local environment throughout the year to explore and answer questions about animals in their habitat. They should understand how to take care of animals taken from their local environment and the need to return them safely after study. Pupils should become familiar</p> | <ul style="list-style-type: none"> <li>• describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene</li> </ul> <p>Pupils should be introduced to the basic needs of animals for survival, as well as the importance of exercise and nutrition for humans. They should also be introduced to the processes of reproduction and growth in animals. The focus at this stage should be on questions that help pupils to recognise growth; they should not be expected to understand how reproduction occurs.</p> <p>The following examples might be used: egg, chick,</p> | <ul style="list-style-type: none"> <li>• identify that humans and some other animals have skeletons and muscles for support, protection and movement</li> </ul> <p>Pupils should continue to learn about the importance of nutrition and should be introduced to the main body parts associated with the skeleton and muscles, finding out how different parts of the body have special functions.</p> | <p><b>of food chains, identifying producers, predators and prey</b></p> <p>Pupils should be introduced to the main body parts associated with the digestive system, for example: mouth, tongue, teeth, oesophagus, stomach, and small and large intestine, and explore questions that help them to understand their special functions.</p> | <p>experienced in puberty.</p> | <p><b>and lifestyle on the way their bodies function</b></p> <ul style="list-style-type: none"> <li>• describe the ways in which nutrients and water are transported within animals, including humans</li> </ul> <p>Pupils should build on their learning from years 3 and 4 about the main body parts and internal organs (skeletal, muscular and digestive system) to explore and answer questions that help them to understand how the circulatory system enables the body to function. Pupils should learn how to keep their bodies healthy and how their bodies might be damaged – including how some drugs and other substances</p> |
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|                                                                                                                        |                                                                                                                                                                         | with the common names of some fish, amphibians, reptiles, birds and mammals, including those that are kept as pets. Pupils should have plenty of opportunities to learn the names of the main body parts (including head, neck, arms, elbows, legs, knees, face, ears, eyes, hair, mouth, teeth) through games, actions, songs and rhymes. | chicken; egg, caterpillar, pupa, butterfly; spawn, tadpole, frog; lamb, sheep. Growing into adults can include reference to baby, toddler, child, teenager, adult.                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                           | can be harmful to the human body.               |
| <b>Materials</b><br><br>Everyday materials KS1<br><br>Rocks/Properties and changes to materials/states of matter (KS2) | <b>ELG: The Natural World</b><br>*Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter | <b>Pupils should be taught to:</b> <ul style="list-style-type: none"> <li>• distinguish between an object and the material from which it is made</li> <li>• identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock</li> <li>• describe the simple physical properties of a</li> </ul>   | <b>Pupils should be taught to:</b> <ul style="list-style-type: none"> <li>• identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses</li> <li>• find out how the shapes of solid objects made</li> </ul> | <b>Pupils should be taught to:</b> <ul style="list-style-type: none"> <li>• compare and group together different kinds of rocks on the basis of their appearance and simple physical properties</li> <li>• describe in simple terms how fossils are formed when things that have lived are trapped within rock</li> </ul> | <b>Pupils should be taught to:</b> <ul style="list-style-type: none"> <li>• compare and group materials together, according to whether they are solids, liquids or gases</li> <li>• observe that some materials change state when they are heated or cooled, and measure or research the temperature at</li> </ul> | <b>Pupils should be taught to:</b> <ul style="list-style-type: none"> <li>• 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</li> </ul> | <i>Recapped in textiles unit in DT and Art.</i> |

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|  |  | <p><b>variety of everyday materials</b></p> <ul style="list-style-type: none"> <li>• compare and group together a variety of everyday materials on the basis of their simple physical properties</li> </ul> <p>Pupils should explore, name, discuss and raise and answer questions about everyday materials so that they become familiar with the names of materials and properties such as: hard/soft; stretchy/stiff; shiny/dull; rough/smooth; bendy/not bendy; waterproof/not waterproof; absorbent/not absorbent; opaque/transparent. Pupils should explore and experiment with a wide variety of materials, not only those listed in the programme of study, but including</p> | <p><b>from some materials can be changed by squashing, bending, twisting and stretching</b></p> <p>Pupils should identify and discuss the uses of different everyday materials so that they become familiar with how some materials are used for more than one thing (metal can be used for coins, cans, cars and table legs; wood can be used for matches, floors, and telegraph poles) or different materials are used for the same thing (spoons can be made from plastic, wood, metal, but not normally from glass). They should think about the properties of materials that make them suitable or</p> | <ul style="list-style-type: none"> <li>• recognise that soils are made from rocks and organic matter</li> </ul> <p>Linked with work in geography, pupils should explore different kinds of rocks and soils, including those in the local environment.</p> | <p><b>which this happens in degrees Celsius (°C)</b></p> <ul style="list-style-type: none"> <li>• identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature</li> </ul> <p>Pupils should explore a variety of everyday materials and develop simple descriptions of the states of matter (solids hold their shape; liquids form a pool not a pile; gases escape from an unsealed container). Pupils should observe water as a solid, a liquid and a gas and should note the changes to water when it is heated or cooled. Note: teachers should avoid using materials where</p> | <ul style="list-style-type: none"> <li>• know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution</li> <li>• use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating</li> <li>• give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic</li> <li>• demonstrate that dissolving, mixing and changes of state are reversible changes</li> <li>• explain that some changes result in the formation of new</li> </ul> |  |
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|  |  | for example: brick, paper, fabrics, elastic, foil. | unsuitable for particular purposes and they should be encouraged to think about unusual and creative uses for everyday materials. Pupils might find out about people who have developed useful new materials, for example John Dunlop, Charles Macintosh or John McAdam. |  | heating is associated with chemical change, for example, through baking or burning. | <b>materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda</b><br>Pupils should build a more systematic understanding of materials by exploring and comparing the properties of a broad range of materials, including relating these to what they learnt about magnetism in year 3 and about electricity in year 4. They should explore reversible changes, including evaporating, filtering, sieving, melting and dissolving, recognising that melting and dissolving are different |  |
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|  |  |  |  |  |  | <p>processes. Pupils should explore changes that are difficult to reverse, for example, burning, rusting and other reactions, for example, vinegar with bicarbonate of soda. They should find out about how chemists create new materials, for example, Spencer Silver, who invented the glue for sticky notes or Ruth Benerito, who invented wrinkle-free cotton.</p> <p>Note: pupils are not required to make quantitative measurements about conductivity and insulation at this stage. It is sufficient for them to observe that some conductors will produce a brighter bulb in a circuit than others</p> |  |
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|                                  |                                                                                                                                         |                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | and that some materials will feel hotter than others when a heat source is placed against them. Safety guidelines should be followed when burning materials.                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Living things and their habitats | <b>ELG: The Natural World</b><br>*Explore the natural world around them, making observations and drawing pictures of animals and plants | <i>Recapped in History (seasides) and Geography (weather, UK and land topics)</i> | <b>Pupils should be taught to:</b> <ul style="list-style-type: none"> <li>• explore and compare the differences between things that are living, dead, and things that have never been alive</li> <li>• 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</li> </ul> | <i>Recapped in and Geography (Nepal and mountains topics)</i> | <b>Pupils should be taught to:</b> <ul style="list-style-type: none"> <li>• recognise that living things can be grouped in a variety of ways</li> <li>• explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment</li> <li>• recognise that environments can change and that this can sometimes pose dangers to living things</li> </ul> Pupils should use the local environment throughout the | <b>Pupils should be taught to:</b> <ul style="list-style-type: none"> <li>• describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird</li> <li>• describe the life process of reproduction in some plants and animals</li> </ul> Pupils should study and raise questions about their local environment throughout the year. They should observe life-cycle changes in a variety of living things, for example, plants in | <b>Pupils should be taught to:</b> <ul style="list-style-type: none"> <li>• 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</li> <li>• give reasons for classifying plants and animals based on specific characteristics</li> </ul> Pupils should build on their learning about grouping living things in |

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|  |  | <ul style="list-style-type: none"> <li>• <b>identify and name a variety of plants and animals in their habitats, including microhabitats</b></li> <li>• <b>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</b></li> </ul> <p>Pupils should be introduced to the idea that all living things have certain characteristics that are essential for keeping them alive and healthy. They should raise and answer questions that help them to become familiar with the life processes that are common to all living things. Pupils should be introduced to the</p> | <p>year to raise and answer questions that help them to identify and study plants and animals in their habitat. They should identify how the habitat changes throughout the year. Pupils should explore possible ways of grouping a wide selection of living things that include animals, flowering plants and non-flowering plants. Pupils could begin to put vertebrate animals into groups, for example: fish, amphibians, reptiles, birds, and mammals; and invertebrates into snails and slugs, worms, spiders, and insects. Note: plants can be grouped into categories such as flowering plants (including grasses) and non-flowering</p> | <p>the vegetable garden or flower border, and animals in the local environment. They should find out about the work of naturalists and animal behaviourists, for example, David Attenborough and Jane Goodall. Pupils should find out about different types of reproduction, including sexual and asexual reproduction in plants, and sexual reproduction in animals.</p> <p><b>(Prior learning through Forest School sessions in Autumn term2)</b></p> | <p>year 4 by looking at the classification system in more detail. They should be introduced to the idea that broad groupings, such as micro-organisms, plants and animals can be subdivided. Through direct observations where possible, they should classify animals into commonly found invertebrates (such as insects, spiders, snails, worms) and vertebrates (fish, amphibians, reptiles, birds and mammals). They should discuss reasons why living things are placed in one group and not another. Pupils might find out about the significance of the work of scientists</p> |
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|  |  |  | <p>terms 'habitat' (a natural environment or home of a variety of plants and animals) and 'microhabitat' (a very small habitat, for example for woodlice under stones, logs or leaf litter). They should raise and answer questions about the local environment that help them to identify and study a variety of plants and animals within their habitat and observe how living things depend on each other, for example, plants serving as a source of food and shelter for animals. Pupils should compare animals in familiar habitats with animals found in less familiar habitats, for example, on the</p> |  | <p>plants, for example ferns and mosses. Pupils should explore examples of human impact (both positive and negative) on environments, for example, the positive effects of nature reserves, ecologically planned parks, or garden ponds, and the negative effects of population and development, litter or deforestation.</p> <p><b>(Prior learning through Forest School sessions in Autumn term1)</b></p> |  | <p>such as Carl Linnaeus, a pioneer of classification.</p> <p><b>(Prior learning through Forest School sessions in Autumn term2)</b></p> |
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|                 |                                                                                                                    |                                                            | seashore, in woodland, in the ocean, in the rainforest.<br><br><b>(Forest school sessions delivered to coincide with science unit)</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Light and sound | <b>ELG: The Natural World</b><br>*Understand some important processes and changes in the natural world around them | <i>Recapped in Geography (UK, weather and land topics)</i> | <i>Recapped in Geography (our world and artic)</i>                                                                                     | <b>Pupils should be taught to:</b> <ul style="list-style-type: none"> <li>• recognise that they need light in order to see things and that dark is the absence of light</li> <li>• notice that light is reflected from surfaces</li> <li>• recognise that light from the sun can be dangerous and that there are ways to protect their eyes</li> <li>• recognise that shadows are formed when the light from a light source is blocked by an opaque object</li> <li>• find patterns in the way that the</li> </ul> | <b>Pupils should be taught to:</b> <ul style="list-style-type: none"> <li>• identify how sounds are made, associating some of them with something vibrating</li> <li>• recognise that vibrations from sounds travel through a medium to the ear</li> <li>• find patterns between the pitch of a sound and features of the object that produced it</li> <li>• find patterns between the volume of a sound and the strength of the vibrations that produced it</li> <li>• recognise that sounds get fainter</li> </ul> | <i>Recapped in and Geography (Rainforest topic)</i> | <b>Pupils should be taught to:</b> <ul style="list-style-type: none"> <li>• recognise that light appears to travel in straight lines</li> <li>• 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</li> <li>• 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</li> <li>• use the idea that light travels in straight lines to explain why shadows have the</li> </ul> |

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|  |  |  |  | <p><b>size of shadows change</b></p> <p>Pupils should explore what happens when light reflects off a mirror or other reflective surfaces, including playing mirror games to help them to answer questions about how light behaves. They should think about why it is important to protect their eyes from bright lights. They should look for, and measure, shadows, and find out how they are formed and what might cause the shadows to change.</p> <p>Note: pupils should be warned that it is not safe to look directly at the sun, even when wearing dark glasses.</p> | <p><b>as the distance from the sound source increases</b></p> <p>Pupils should explore and identify the way sound is made through vibration in a range of different musical instruments from around the world; and find out how the pitch and volume of sounds can be changed in a variety of ways.</p> |  | <p><b>same shape as the objects that cast them</b></p> <p>Pupils should build on the work on light in year 3, exploring the way that light behaves, including light sources, reflection and shadows. They should talk about what happens and make predictions. Pupils might work scientifically by: deciding where to place rear-view mirrors on cars; designing and making a periscope and using the idea that light appears to travel in straight lines to explain how it works. They might investigate the relationship between light sources, objects and shadows by using shadow puppets. They could extend their experience of light</p> |
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|                    |                                                                                                                    |                                                                           |                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                 | by looking a range of phenomena including rainbows, colours on soap bubbles, objects looking bent in water, and coloured filters (they do not need to explain why these phenomena occur). |
| Forces and magnets | <b>ELG: The Natural World</b><br>*Understand some important processes and changes in the natural world around them | <i>Recapped in History (Toys through time) and OPAL play magnet play.</i> | <i>Recapped in DT (fairgrounds and moving monsters) and OPAL play magnet play.</i> | <b>Pupils should be taught to:</b> <ul style="list-style-type: none"> <li>• compare how things move on different surfaces</li> <li>• notice that some forces need contact between 2 objects, but magnetic forces can act at a distance</li> <li>• observe how magnets attract or repel each other and attract some materials and not others</li> <li>• compare and group together a variety of everyday materials on the basis of whether</li> </ul> | <i>Recapped in DT (slingshot car and structures).</i> | <b>Pupils should be taught to:</b> <ul style="list-style-type: none"> <li>• explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object</li> <li>• identify the effects of air resistance, water resistance and friction, that act between moving surfaces</li> <li>• recognise that some mechanisms including levers, pulleys and gears allow a smaller</li> </ul> | <i>Recapped in DT (playgrounds) and Geography (Natural Disasters)</i>                                                                                                                     |

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|  |  |  |  | <p><b>they are attracted to a magnet, and identify some magnetic materials</b></p> <ul style="list-style-type: none"> <li>• describe magnets as having 2 poles</li> <li>• predict whether 2 magnets will attract or repel each other, depending on which poles are facing</li> </ul> <p>Pupils should observe that magnetic forces can act without direct contact, unlike most forces, where direct contact is necessary (for example, opening a door, pushing a swing). They should explore the behaviour and everyday uses of different magnets (for example, bar, ring, button and horseshoe).</p> |  | <p><b>force to have a greater effect</b></p> <p>Pupils should explore falling objects and raise questions about the effects of air resistance. They should explore the effects of air resistance by observing how different objects such as parachutes and sycamore seeds fall. They should experience forces that make things begin to move, get faster or slow down. Pupils should explore the effects of friction on movement and find out how it slows or stops moving objects, for example, by observing the effects of a brake on a bicycle wheel. Pupils should explore the effects of levers, pulleys and simple</p> |  |
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|             |  |  |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <p>machines on movement.</p> <p>Pupils might find out how scientists, for example, Galileo Galilei and Isaac Newton helped to develop the theory of gravitation.</p> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Electricity |  |  |  |  | <p><b>Pupils should be taught to:</b></p> <ul style="list-style-type: none"> <li>• identify common appliances that run on electricity</li> <li>• construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers</li> <li>• identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery</li> <li>• recognise that a switch opens and</li> </ul> | <p><i>Recapped in DT (electrical systems)</i></p>                                                                                                                    | <p><b>Pupils should be taught to:</b></p> <ul style="list-style-type: none"> <li>• associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit</li> <li>• compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches</li> <li>• use recognised symbols when representing a simple circuit in a diagram</li> </ul> |

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|  |  |  |  |  | <p><b>closes a circuit and associate this with whether or not a lamp lights in a simple series circuit</b></p> <ul style="list-style-type: none"> <li>• <b>recognise some common conductors and insulators, and associate metals with being good conductors</b></li> </ul> <p>Pupils should construct simple series circuits, trying different components, for example, bulbs, buzzers and motors, and including switches, and use their circuits to create simple devices. Pupils should draw the circuit as a pictorial representation, not necessarily using conventional circuit symbols at this stage; these will be introduced in year 6.</p> |  | <p>Building on their work in year 4, pupils should construct simple series circuits, to help them to answer questions about what happens when they try different components, for example, switches, bulbs, buzzers and motors. They should learn how to represent a simple circuit in a diagram using recognised symbols.</p> <p>Note: pupils are expected to learn only about series circuits, not parallel circuits. Pupils should be taught to take the necessary precautions for working safely with electricity.</p> |
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|                                                               |                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                |                                                                    | Note: pupils might use the terms current and voltage, but these should not be introduced or defined formally at this stage. Pupils should be taught about precautions for working safely with electricity. |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                         |
| <p>Earth and Space</p> <p>Including Seasonal Change (KS1)</p> | <p><b>ELG: The Natural World</b></p> <p>*Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class</p> <p>*Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter</p> | <p><b>Pupils should be taught to:</b></p> <ul style="list-style-type: none"> <li>• <b>observe changes across the 4 seasons</b></li> <li>• <b>observe and describe weather associated with the seasons and how day length varies</b></li> </ul> <p>Pupils should observe and talk about changes in the weather and the seasons.</p> <p>Note: pupils should be warned that it is not safe to look directly at the sun, even when wearing dark glasses.</p> | <p><i>Recapped in Geography (our world and art topics)</i></p> | <p><i>Recapped in Geography (mountains, climate and Nepal)</i></p> | <p><i>Recapped in Geography (Europe and rivers topics)</i></p>                                                                                                                                             | <p><b>Pupils should be taught to:</b></p> <ul style="list-style-type: none"> <li>• <b>describe the movement of the Earth and other planets relative to the sun in the solar system</b></li> <li>• <b>describe the movement of the moon relative to the Earth</b></li> <li>• <b>describe the sun, Earth and moon as approximately spherical bodies</b></li> <li>• <b>use the idea of the Earth's rotation to explain day and night and the apparent</b></li> </ul> | <p><i>Recapped in Geography (natural disasters)</i></p> |

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|  |  |  |  |  |  | <b>movement of the sun across the sky</b><br>Pupils should be introduced to a model of the sun and Earth that enables them to explain day and night. Pupils should learn that the sun is a star at the centre of our solar system and that it has 8 planets: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune (Pluto was reclassified as a 'dwarf planet' in 2006). They should understand that a moon is a celestial body that orbits a planet (Earth has 1 moon; Jupiter has 4 large moons and numerous smaller ones). |  |
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