



## Science topic knowledge progression

	Early years	Year 1 and 2	Year 3 and 4	Year 5 and 6
Animals	<p>I can compare and group animals.</p> <p>I can think about different environments and what animals might live there.</p> <p>I understand that animals are born, live and die.</p>	<p>I can name a variety of animals including fish, amphibians, reptiles, birds and mammals.</p> <p>I can classify and name animals by what they eat (carnivore, herbivore and omnivore).</p> <p>I can sort animals into categories (including fish, amphibians, reptiles, birds and mammals).</p> <p>I can sort living and non-living things.</p> <p>I can link the correct part of the human body to each sense.</p> <p>I can identify things that are living, dead and never lived.</p> <p>I can describe how a specific habitat provides for the basic needs of things living there (plants and animals).</p> <p>I can identify and name animals in a range of habitats.</p> <p>I can match living things to their habitat.</p> <p>I can describe how animals find their food.</p> <p>I can name some different sources of food for animals.</p> <p>I can explain a simple food chain.</p> <p>I can explain the basic stages in a life cycle for animals, including humans.</p> <p>I can describe what animals and humans need to survive.</p>	<p>I can group living things in different ways.</p> <p>I can use classification keys to group, identify and name living things.</p> <p>I can create classification keys to group, identify and name living things (for others to use).</p> <p>I can describe how changes to an environment could endanger living things.</p>	<p>I can describe the life cycle of different living things, e.g. mammal, amphibian, insect bird.</p> <p>I can describe the differences between different life cycles.</p> <p>I can describe the process of reproduction in animals.</p> <p>I can describe the ways in which nutrients and water are transported in animals, including humans.</p> <p>I can classify living things into broad groups according to observable characteristics and based on similarities &amp; differences.</p> <p>I can describe how living things have been classified.</p> <p>I can give reasons for classifying plants and animals in a specific way.</p> <p>I can name the 5 Kingdoms and give examples of living things that belong to each of them.</p> <p>I can talk about some of the similarities and differences between the Kingdoms.</p>



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<p><b>Humans</b></p>	<p>I know that there are similarities and differences between others and myself. I know that I was a baby and have grown into a child. I understand that I will grow into an adult.</p>	<p>I can describe why exercise, a balanced diet and good hygiene are important for humans. I can name the parts of the human body that I can see. I can explain the basic stages in a life cycle for animals, including humans. I can describe what animals and humans need to survive.</p>	<p><b>Staying healthy</b></p> <p>I can explain the importance of a nutritious, balanced diet. I can explain how nutrients, water and oxygen are transported within animals and humans. I can describe and explain the skeletal system of a human. I can describe and explain the muscular system of a human. I can describe the purpose of the skeleton in humans and animals.</p>	<p><b>Digestive system</b></p> <p>I can identify and name the parts of the human digestive system. I can describe the functions of the organs in the human digestive system. I can identify and describe the different types of teeth in humans. I can describe the functions of different human teeth. I can use food chains to identify producers, predators and prey. I can construct food chains to identify producers, predators and prey.</p>	<p>I can create a timeline to indicate stages of growth in humans. I can identify and name the main parts of the human circulatory system. I can describe the function of the heart, blood vessels and blood. I can discuss the impact of diet, exercise, drugs and lifestyle on health. I can describe the ways in which nutrients and water are transported in animals, including humans.</p>
<p><b>Plants</b></p>	<p>I can compare plants and group them. I can care for a growing plant.</p>	<p>I can name a variety of common wild and garden plants. I can name the petals, stem, leaf and root of a plant. I can name the roots, trunk, branches and leaves of a tree. I can identify things that are living, dead and never lived. I can describe how a specific habitat provides for the basic</p>	<p>I can describe the function of different parts of flowering plants and trees. I can explore and describe the needs of different plants for survival. I can explore and describe how water is transported within plants. I can describe the plant life cycle, especially the importance of flowers.</p>	<p>I can describe the process of reproduction in plants.</p>	



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		<p>needs of things living there (plants and animals).</p> <p>I can identify and name plants in a range of habitats.</p> <p>I can describe how seeds and bulbs grow into plants.</p> <p>I can describe what plants need in order to grow and stay healthy (water, light &amp; suitable temperature).</p>		
Materials	<p>I can compare materials based on observable properties.</p> <p>I can identify some natural materials (wood and stone).</p>	<p>I can distinguish between an object and the material it is made from.</p> <p>I can explain the materials that an object is made from.</p> <p>I can name wood, plastic, glass, metal, water and rock.</p> <p>I can describe the properties of everyday materials.</p> <p>I can group objects based on the materials they are made from.</p> <p>I can identify and name a range of materials including wood, metal, plastic, glass, brick, rock, paper and cardboard.</p> <p>I can suggest why a material might or might not be used for a specific job.</p> <p>I can explore how shapes can be changed by squashing, bending, twisting and stretching.</p>	<p>I can group materials based on their state of matter (solid, liquid, gas).</p> <p>I can describe how some materials can change state.</p> <p>I can explore how materials change state.</p> <p>I can measure the temperature at which materials change state.</p> <p>I can describe the water cycle.</p> <p>I can explain the part played by evaporation and condensation in the water cycle.</p>	<p>I can compare and group materials based on their properties (e.g. hardness, solubility, transparency, conductivity, [electrical &amp; thermal], and response to magnets).</p> <p>I can describe how a material dissolves to form a solution; explaining the process of dissolving.</p> <p>I can describe and show how to recover a substance from a solution.</p> <p>I can describe how some materials can be separated.</p> <p>I can demonstrate how materials can be separated (e.g. through filtering, sieving and evaporating).</p> <p>I know and can demonstrate that some changes are reversible and some are not.</p> <p>I can explain how some changes result in the formation of a new material and that this is usually irreversible.</p> <p>I can discuss reversible and irreversible changes.</p> <p>I can give evidenced reasons why materials should be used for specific purposes.</p>



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Forces	<p>Expectation of knowledge- Pushing is a force. Forceful- strong action. May know about gravity and that there is less gravity in space.</p>	<p>I can explore and describe how objects move on different surfaces. I can explain how some forces require contact and some do not, giving examples. I can explore and explain how objects attract and repel in relation to objects and other magnets. I can predict whether objects will be magnetic and carry out an enquiry to test this out. I can describe how magnets work. I can predict whether magnets will attract or repel and give a reason.</p>	<p>I can explain what gravity is and its impact on our lives. I can identify and explain the effect of air resistance. I can identify and explain the effect of water resistance. I can identify and explain the effect of friction. I can explain how levers, pulleys and gears allow a smaller force to have a greater effect.</p>
Electricity	<p>Expectation of knowledge- Electricity makes things work. Should be able to name some things that use electricity to function but not the difference between mains and cellular electricity. Wouldn't always link cellular power with electricity.</p>	<p>I can identify and name appliances that require electricity to function. I can construct a series circuit. I can identify and name the components in a series circuit (including cells, wires, bulbs, switches and buzzers). I can draw a circuit diagram. I can predict and test whether a lamp will light within a circuit. I can describe the function of a switch in a circuit. I can describe the difference between a conductor and insulators; giving examples of each.</p>	<p>I can explain how the number &amp; voltage of cells in a circuit links to the brightness of a lamp or the volume of a buzzer. I can compare and give reasons for why components work and do not work in a circuit. I can draw circuit diagrams using correct symbols.</p>
Light	<p>Expectation of knowledge- They can see in the light.</p>	<p>I can describe what dark is (the absence of light). I can explain that light is needed in order to see.</p>	<p>I can explain how light travels. I can explain and demonstrate how we see objects.</p>



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	<p>They can see better with more light.</p> <p>They can identify shadows.</p> <p>They can see reflections in mirrors.</p>		<p>I can explain that light is reflected from a surface.</p> <p>I can explain and demonstrate how a shadow is formed.</p> <p>I can explore shadow size and explain why shadows are sometimes bigger at different times of the day.</p> <p>I can explain the danger of direct sunlight and describe how to keep protected.</p>	<p>I can explain why shadows have the same shape as the object that casts them.</p> <p>I can explain how simple optical instruments work, e.g. periscope, telescope, binoculars, mirror, magnifying glass etc.</p>
Seasons	<p>I have some aware of the seasons.</p>	<p>I can name the seasons and suggest the type of weather in each season.</p> <p>I can observe and comment on changes in the seasons.</p>		
Rocks	<p>Expectation of knowledge-</p> <p>They know dinosaurs 'make' fossils.</p> <p>They know that rocks come in different colours, sizes and strengths.</p> <p>They know that rocks can be used to build things.</p> <p>Stone Age- They know that different types of stones were used for different tasks.</p>		<p>I can compare and group rocks based on their appearance and physical properties, giving a reason.</p> <p>I can describe how fossils are formed.</p> <p>I can describe how soil is made.</p> <p>I can describe and explain the difference between sedimentary and igneous rock.</p>	
Sound	<p>Expectation of knowledge-</p> <p>They know that they hear things using their ears.</p> <p>They know that musical instruments make sound.</p> <p>They know how a few instruments make sound (strings moving on a guitar and pressing the keys of a piano).</p> <p>They know that the sound is louder if you are closer to it.</p>		<p>I can describe how sound is made.</p> <p>I can explain how sound travels from a source to our ears.</p> <p>I can explain the place of vibration in hearing.</p> <p>I can explore the correlation between pitch and the object producing a sound.</p> <p>I can explore the correlation between the volume of a sound and the strength of the vibrations that produced it.</p> <p>I can describe what happens to a sound as it travels away from its source.</p>	



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Earth and space	<p>Expectation of knowledge-</p> <p>They know that we live on Earth and that is a planet.</p> <p>They know that we have one moon.</p> <p>They know that astronauts have been to the moon and there is a space station in space.</p> <p>They know that the Sun is a star.</p> <p>They know there are different planets in our solar system.</p> <p>They know that the closer to the Sun a planet is, the hotter it is.</p> <p>They know that planets are different sizes and may know that not all are solid.</p>	<p>I can describe and explain the movement of the Earth and other planets relative to the Sun.</p> <p>I can describe and explain the movement of the Moon relative to the Earth.</p> <p>I can explain and demonstrate how night and day are created.</p> <p>I can describe the Sun, Earth and Moon (using the term spherical).</p>
Evolution and inheritance	<p>Expectation of knowledge-</p> <p>They may know that humans evolved from monkeys.</p> <p>They may know that some animals have changed over time.</p> <p>They may know that some animals are endangered and some are extinct.</p>	<p>I can describe how the earth and living things have changed over time.</p> <p>I can explain how fossils can be used to find out about the past.</p> <p>I can explain about reproduction and offspring (recognising that offspring normally vary and are not identical to their parents).</p> <p>I can explain how animals and plants are adapted to suit their environment.</p> <p>I can link adaptation over time to evolution.</p> <p>I can explain evolution.</p>