

# Science Curriculum – Programme of Study – Cycle 1

Year 1 and 2	Year 3 and 4	Year 5 and 6
<p><b>Turrets and Tiaras</b> <b>Everyday materials</b></p> <ul style="list-style-type: none"> <li>Distinguish between objects and the material from which it is made.</li> <li>Identify and name a variety of everyday materials, wood, plastic, glass, metal, rock.</li> <li>Describe the simple properties of everyday materials and group them according to their properties.</li> <li>Compare and group together a variety of everyday materials on the basis of their simple physical properties.</li> <li>Find out how the shapes of solids can be made by some materials changing shape, squashing, bending, twisting, and stretching.</li> <li>Identify and compare the suitability of a variety of everyday materials for particular uses.</li> </ul>	<p><b>Ice Worlds</b> <b>Forces</b></p> <ul style="list-style-type: none"> <li>Compare how things move on different surfaces – friction - and notice that some forces need contact between two objects.</li> <li>Observe how magnets attract and repel and attract certain materials.</li> <li>Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials.</li> <li>Describe magnets as having 2 poles and predict whether 2 magnets will attract or repel, depending on facing poles.</li> </ul> <p><b>Animals including humans</b></p> <ul style="list-style-type: none"> <li>Identify that animals need the right types of food and nutrition, and that they get nutrition from what they eat.</li> <li>Identify that humans and animals have skeletons and muscles for support and movement.</li> </ul> <p><b>Living things and their habitats</b></p> <ul style="list-style-type: none"> <li>Recap on learning in year 2 related to adaptations.</li> </ul> <p><b>States of matter</b></p> <ul style="list-style-type: none"> <li>Compare solids, liquids and gases.</li> <li>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).</li> <li>Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.</li> </ul>	<p><b>Reach for the Stars</b> <b>Earth and space</b></p> <ul style="list-style-type: none"> <li>Describe the movement of the earth, and other planets, relative to the sun in the solar system.</li> <li>Describe the movement of the moon relative to the Earth.</li> <li>Describe Sun, Earth and Moon as approximately spherical bodies.</li> <li>Use the idea of the Earth’s rotation to explain day and night and the apparent movement of the sun across the sky.</li> </ul> <p><b>Forces</b></p> <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 (Galileo).</li> <li>Identify the effects of air resistance, water resistance and friction, that act between surfaces.</li> </ul> <p><b>Electricity</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>
<p><b>Out of Africa</b> <b>Animals including humans</b></p> <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, herbivores and omnivores.</li> <li>Describe and compare the structure of variety of common animals e.g. – fish, reptiles, mammals.</li> <li>Notice that animals including humans grow into adults.</li> <li>Understand the basic needs of animals for survival.</li> </ul> <p><b>Living things and their habitats</b></p> <ul style="list-style-type: none"> <li>Identify that most living things live in habitats which they are suited to.</li> <li>Use idea of simple food chains, identify and name different sources of food.</li> <li>Observe and name a variety of sources of light including electric lights, flames, and the sun.</li> <li>Associate shadows with a light source being blocked by something.</li> </ul>	<p><b>London Calling</b> <b>Sound (taught via music and the learning journey)</b></p> <ul style="list-style-type: none"> <li>Identify how sounds are made, associating 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 the features of the object that produced it.</li> <li>Find patterns between the volume of a sound and the strength of vibration that produces it.</li> <li>Recognise that sound gets fainter the further it travels.</li> </ul> <p><b>Electricity</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, based on the lamp being part of a complete loop with a battery.</li> <li>Recognise that a switch opens and closes a circuit and relate this to where or not the, lamp will light.</li> <li>Recognise some conductors and insulators.</li> <li>What is a micro- organism – can it make you sick?</li> <li>Recognise boiling point</li> </ul>	<p><b>Tudor Treasures</b> <b>Properties and changes of state.</b></p> <ul style="list-style-type: none"> <li>Demonstrate that dissolving, mixing and changes of state are reversible changes.</li> <li>Explain that some changes result in the formation of new 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.</li> </ul>
<p><b>Honey, Honey</b> <b>Plants</b></p> <ul style="list-style-type: none"> <li>Identify and name common wild and garden plants, including deciduous and evergreen trees.</li> <li>Identify basic structure of flowering plants and trees including roots, stem, leaves and flowers.</li> <li>Identify and describe that plants need water, light and a suitable temperature to grow.</li> <li>Observe how seeds and bulbs grow into mature plants.</li> </ul> <p><b>Animals including humans</b></p> <ul style="list-style-type: none"> <li>Find out about and describe the basic needs of animals, including humans for survival.</li> <li>Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.</li> </ul> <p><b>Living things and their habitats</b></p> <ul style="list-style-type: none"> <li>Explore and compare the differences between things that are living and dead, and things that have never been alive.</li> <li>Identify that most living things live in habitats which they are suited to.</li> <li>Describe how different habitats provide the basic needs of different animals.</li> </ul>	<p><b>Rainforest</b> <b>Plants</b></p> <ul style="list-style-type: none"> <li>Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers.</li> <li>Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.</li> <li>Layers of the rainforest – types of plans/trees found at each layer.</li> </ul> <p><b>Animals including humans</b></p> <ul style="list-style-type: none"> <li>Construct and interpret a variety of food chains, identifying producers, predators and prey.</li> </ul> <p><b>Living things and their habitats</b></p> <p>Recognise that environments can change and that this can sometimes pose dangers to living things.</p>	<p><b>Stones and Bones</b> <b>Forces</b></p> <ul style="list-style-type: none"> <li>Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.</li> </ul> <p><b>Properties and changes of materials</b></p> <ul style="list-style-type: none"> <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>Compare and group everyday materials based on their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnetism. (What did the stone age people use to make weapons, bowls etc?)</li> </ul> <p><b>Discrete</b> <b>Animals including humans</b></p> <ul style="list-style-type: none"> <li>Describe the changes as humans develop to old age.</li> <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 and lifestyle on the way their bodies functions.</li> <li>Describe the ways in which nutrients and water are transported within animals, including humans.</li> </ul>

# Science Curriculum – Programme of Study – Cycle 2

Year 1 and 2	Year 3 and 4	Year 5 and 6
<p><b>Into the Woods</b></p> <p><b>Plants</b></p> <ul style="list-style-type: none"> <li>Identify and name common wild and garden plants, including deciduous and evergreen trees.</li> <li>Identify basic structure of flowering plants and trees including roots, stem/trunk, leaves, and flowers.</li> </ul> <p><b>Seasonal changes</b></p> <ul style="list-style-type: none"> <li>Observe changes across the four seasons.</li> <li>Observe and describe weather associated with seasons and how day length varies.</li> </ul> <p><b>Living things and their habitats</b></p> <ul style="list-style-type: none"> <li>Explore and compare differences between things that are living and dead.</li> <li>Identify and name a variety of plants and animals in their habitats, including micro-habitats.</li> </ul> <p><b>Animals Including Humans</b></p> <ul style="list-style-type: none"> <li>Notice that animals including humans have offspring which grow into adults. <i>Learn how to take care of animals taken from their environment and how to return them safely.</i></li> </ul>	<p><b>Storms and Shipwrecks</b></p> <p><b>Light</b></p> <ul style="list-style-type: none"> <li>Recognise that they need light to see things and that dark is the absence of light - creating lanterns.</li> <li>Notice that light is reflected from surfaces.</li> <li>Recognise that light from the sun can be dangerous to eyes.</li> <li>Recognise that shadows are formed when the light from a light source is blocked by a solid object.</li> <li>Find patterns in the way that the size of shadows changes.</li> </ul> <p><b>Animals, including humans</b></p> <ul style="list-style-type: none"> <li>Identify that humans need the right types and amount of nutrition; they get nutrition from what they eat.</li> <li>Describe the simple parts of the digestive system in humans.</li> <li>Identify the different types of teeth in humans and their simple functions.</li> <li>Identify that humans have skeletons, and muscles for movement and protection.</li> <li><i>What effects does bad diet have on our teeth?</i></li> <li><i>Objects that float and sink.</i></li> </ul>	<p><b>Ancient Civilisations (Greece, Egypt)</b></p> <p><b>Properties and changes of materials</b></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 uses of everyday materials, including metals, wood, and plastic.</li> <li>Explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible. (Relate to mummification.)</li> <li>Demonstrate that dissolving, mixing and changes of state can be reversible.</li> </ul>
<p><b>Flying High</b></p> <p><b>Everyday Materials</b></p> <ul style="list-style-type: none"> <li>Identify and name a variety of everyday materials and their properties (including squashing, twisting, bending, stretching).</li> <li>Distinguish what everyday objects are made from (and identify their uses).</li> <li>Group together everyday materials based upon their properties.</li> <li>Find out how the shapes of solids can be made by some materials changing shape, squashing, bending, twisting, and stretching.</li> <li><i>Compare the best material for a paper aeroplane.</i></li> </ul> <p><b>Animals including humans</b></p> <ul style="list-style-type: none"> <li>Identify, name, draw and label the basic parts of the human body and say which part of the human body is associated with each sense. <i>Investigate forces, fair testing.</i> <i>Compare how things move on different surfaces.</i></li> </ul>	<p><b>The Invaders</b></p> <p><b>Rocks</b></p> <ul style="list-style-type: none"> <li>Compare and group together different kinds of rocks based on their appearance and simple physical properties.</li> <li>Recognise that soils are made from rocks and organic matter.</li> <li><i>Forces – recognise that a cylinder structure provide strength.</i></li> </ul> <p><b>Discrete</b></p> <p><i>Describe in simple terms how fossils are formed when things that have once lived are trapped in material.</i></p>	<p><b>We'll Meet Again</b></p> <p><b>Properties and changes of materials</b></p> <ul style="list-style-type: none"> <li>Compare and group together everyday materials based on their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnetism. <i>Relate to how creative the Brits had to be with resources and re-cycling during the war.</i></li> </ul> <p><b>Light</b></p> <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 same shape as the objects that cast them – blackout.</li> <li><i>To understand how plants reproduce relate to dig for victory.</i></li> <li><i>Micro-organisms.</i></li> </ul>
<p><b>Beside the Sea</b></p> <p><b>Animals including humans</b></p> <ul style="list-style-type: none"> <li>Identify and name a variety of common animals including fish, amphibians, reptiles, birds, and mammals.</li> </ul> <p><b>Living Things and Their Habitats</b></p> <ul style="list-style-type: none"> <li>Identify that most living things live in habitats, which they are suited to.</li> <li>Identify the living things within this habitat.</li> </ul> <p><i>Light and sources of light, electricity.</i></p>	<p><b>Wild Water</b></p> <p><b>Living things and their habitats</b></p> <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 affect living things.</li> </ul> <p><b>Plants</b></p> <ul style="list-style-type: none"> <li>Identify and describe the functions of different parts of flowering plants, roots, stem, leaves, and flowers.</li> <li>Explore the requirements of plants for life and growth and how this varies from plant to plant.</li> <li>Investigate the way water is transported in plants.</li> </ul> <p><i>Animal life cycles – frogs and butterflies.</i> <i>Pond habitat - dipping – layers of the pond.</i></p>	<p><b>Voyage of Discovery</b></p> <p><b>Evolution and inheritance</b></p> <ul style="list-style-type: none"> <li>Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents.</li> <li>Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.</li> <li>Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago. (Dudley, Wrens Nest.)</li> </ul> <p><b>Living things and their habitats</b></p> <ul style="list-style-type: none"> <li>Describe how living things are classified into broad groups according to common observable characteristics, including microorganisms, plants, and animals.</li> <li>Describe the life process of reproduction in some plants and animals.</li> <li>Give reasons for classifying plants and animals based on specific characteristics.</li> <li>Describe the differences in the life cycle of a mammal (sloth), an amphibian (Darwin's frog), an insect (butterfly) and a bird (finch).</li> </ul>