



Christ Church CE (c) Primary School

Science Curriculum: Skills Progression

Biology **Chemistry** **Physics**

	Autumn Term	Spring Term	Summer Term
Skills covered Year 1	Working Scientifically (taught across the academic year) <i>I know how to ask simple scientific questions.</i> <i>I know how to use simple equipment to make observations.</i> <i>I know how to identify and classify things.</i> <i>I know how to explain to others what I have found out</i> <i>I know how to use simple data to answer questions.</i> <i>I know how to carry out simple tests</i>		



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	<p>Biology - Animals, including humans I know how to name the parts of the human body that I can see. I know how to link the correct part of the human body to each sense.</p> <p>Chemistry - Everyday materials I distinguish between an object and the material it is made from. I know the materials that an object is made from. I know the difference between wood, plastic, glass, metal, water and rock. I know about the properties of everyday materials. I group objects based on the materials they are made from.</p> <p>Physics - Light (exploratory unit through materials - Chemistry - pre learning for Year 3) Recognise and name different light sources Distinguish between bright colours and light sources.</p> <p>Physics - Forces (exploratory unit through materials - Chemistry - pre learning for Year 3) Know the difference between a push and pull</p> <p>Physics - Seasonal changes – Autumn and Winter I observe and know about the changes in the seasons. I name the seasons and know about the type of weather in each season.</p>	<p>Biology - Animals, including humans I know and name a variety of animals including fish, amphibians, reptiles, birds and mammals. I classify and know animals by what they eat (carnivore, herbivore and omnivore). I know how to sort animals into categories (including fish, amphibians, reptiles, birds and mammals). I know how to sort living and non-living things.</p> <p>Physics - Seasonal changes – Spring I observe and know about the changes in the seasons. I name the seasons and know about the type of weather in each season.</p>	<p>Biology - Plants I know and name a variety of common wild and garden plants. I know and name the petals, stem, leaves and root of a plant. I know and name the roots, trunk, branches and leaves of a tree. I observe the growth of flowers and vegetables that I have planted. I can answer questions and keep records about plants growing in their habitat.</p> <p>Physics - Seasonal changes - Summer I observe and know about the changes in the seasons. I name the seasons and know about the type of weather in each season.</p>
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Skills covered Year 2	<p>Working Scientifically (taught across the academic year) <i>I know how to ask simple scientific questions.</i> <i>I know how to use simple equipment to make observations.</i> <i>I know how to carry out simple tests.</i> <i>I know how to identify and classify things.</i> <i>I know how to explain to others what I have found out.</i> <i>I know how to use simple data to answer questions</i></p>		
	<p>Chemistry - Uses of everyday materials I identify and name a range of materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard. I know why a material might or might not be used for a specific job. I know how materials can be changed by squashing, bending, twisting and stretching.</p> <p>Physics - Sound (exploratory unit through Materials - Chemistry - pre learning for Year 4) I identify sources of sound including materials that make sound I investigate how sound can be made louder and quieter I begin to classify different types of sound</p>	<p>Biology - Living things and their habitats I identify things that are living, dead and never lived and compare the differences. I know how a specific habitat provides for the basic needs of things living there (plants and animals). I identify and name plants and animals in a range of habitats, including microhabitats. I match living things to their habitat. I know how animals find their food. I name some different sources of food for animals. I know and can explain a simple food chain.</p> <p>Biology - Animals, including humans I know the basic stages in a life cycle for animals, including humans. (e.g. baby, young, adult, old) I know that animals, including humans, have offspring which grow into adults. I know what animals and humans need to survive. I know why exercise is important for humans. I know why a balanced diet is important for humans I know why good hygiene is important for humans</p>	<p>Biology - Plants I know how seeds and bulbs grow into plants. I know what plants need in order to grow and stay healthy (water, light & suitable temperature). I can identify plants that grow in different conditions I can observe similarities and differences between bulbs and seeds.</p>



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Skills covered Year 3	<p>Working Scientifically (taught across the academic year)</p> <p><i>I know how to use observations and knowledge to answer scientific questions.</i></p> <p><i>I know how to set up a simple enquiry to explore a scientific question.</i></p> <p><i>I know how to set up a test to compare two things.</i></p> <p><i>I know how to set up a fair test and explain why it is fair.</i></p> <p><i>I make careful and accurate observations, including the use of standard units.</i></p> <p><i>I gather, record, classify and present data in different ways to answer scientific questions.</i></p> <p><i>I know how to draw conclusions and suggest improvements.</i></p> <p><i>I know how to make a prediction with a reason.</i></p> <p><i>I know how to identify differences, similarities and changes related to an enquiry.</i></p>		
	<p style="text-align: center;">Biology - Plants</p> <p>I know the function of different parts of flowering plants and trees.</p> <p>I know what different plants need to help them survive.</p> <p>I know how water is transported within plants.</p> <p>I know the plant life cycle, especially the importance of flowers. Including pollination, seed formation and seed dispersal.</p> <p>I can explore the idea that plants can make their own food.</p> <p style="text-align: center;">Biology - Animals, including humans</p> <p>I know about the importance of a nutritious, balanced diet.</p> <p>I know how nutrients, water and oxygen are transported within animals and humans.</p>	<p style="text-align: center;">Biology - Animals, including humans</p> <p>I know about the skeletal system of a human.</p> <p>I know about the muscular system of a human.</p> <p>I know about the purpose of the skeleton in humans and animals.</p> <p style="text-align: center;">Chemistry - Rocks</p> <p>I compare and group rocks based on their appearance and physical properties, giving a reason.</p> <p>I know how fossils are formed.</p> <p>I know how soil is made. (composting and organic matter)</p> <p>I know about and explain the difference between sedimentary, metamorphic and igneous rock.</p>	<p style="text-align: center;">Physics - Light</p> <p>I know what dark is (the absence of light).</p> <p>I know that light is needed in order to see.</p> <p>I know that light is reflected from a surface.</p> <p>I know and demonstrate how a shadow is formed.</p> <p>I explore shadow size and explain the changes.</p> <p>I know the danger of direct sunlight and describe how to keep protected.</p> <p style="text-align: center;">Physics - Forces and Magnets</p> <p>I know about and describe how objects move on different surfaces.</p> <p>I know how some forces require contact and some do not, giving examples.</p> <p>I know about and explain how objects attract and repel in relation to objects and other magnets.</p> <p>I predict whether objects will be magnetic and carry out an enquiry to test this out.</p> <p>I know how magnets work.</p> <p>I predict whether magnets will attract or repel and give a reason.</p>



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Skills covered Year 4	<p>Working Scientifically (taught across the academic year)</p> <p><i>I know how to use equipment, including thermometers and data loggers to make measurements.</i></p> <p><i>I know how to set up a simple enquiry to explore a scientific question.</i></p> <p><i>I know how to set up a fair test and explain why it is fair.</i></p> <p><i>I make careful and accurate observations, including the use of standard units.</i></p> <p><i>I know how to make a prediction with a reason.</i></p> <p><i>I know how to identify differences, similarities and changes related to an enquiry.</i></p> <p><i>I know how to use diagrams, keys, bar charts and tables; using scientific language.</i></p> <p><i>I can make simple guides or keys to explore and identify local plants and animals.</i></p> <p><i>I can classify and research animals native to the habitat.</i></p> <p><i>I know how to use findings to report in different ways, including oral and written explanations, presentation.</i></p>		



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Skills covered Year 5	Autumn Term	Spring Term	Summer Term
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	Working Scientifically (taught across the academic year) <i>I know how to plan different types of scientific enquiry.</i> <i>I know how to control variables in an enquiry.</i> <i>I measure accurately and precisely using a range of equipment.</i> <i>I know how to record data and results using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.</i> <i>I use the outcome of test results to make predictions and suggest further comparative and fair tests.</i> <i>I report findings from enquiries in a range of ways and draw conclusions</i> <i>I explain causal relationships in an enquiry.</i> <i>I know how to relate the outcome from an enquiry to scientific knowledge in order to state whether evidence supports or refutes an argument or theory.</i> <i>I read, spell and pronounce scientific vocabulary accurately.</i>		
	<p style="text-align: center;">Chemistry - States of matter</p> <p>I group materials based on their state of matter (solid, liquid, gas). I know how some materials can change state. I explore how materials change state. I measure the temperature at which materials change state. I know about the water cycle. I know the part played by evaporation and condensation in the water cycle.</p> <p style="text-align: center;">Physics - Electricity</p> <p>I identify and name appliances that require electricity to function. I construct a series circuit. I identify and name the components in a series circuit (including cells, wires, bulbs, switches and buzzers). I know how to draw a circuit diagram. I predict and test whether a lamp will light within a circuit. I know the function of a switch in a circuit. I know the difference between a conductor and an insulator; giving examples of each.</p>	<p style="text-align: center;">Biology - Animals, including humans</p> <p>I identify and name the parts of the human digestive system. I know the functions of the organs in the human digestive system. I identify and know the different types of teeth in humans. I know the functions of different human teeth. I use food chains to identify producers, predators and prey. I construct food chains to identify producers, predators and prey.</p> <p style="text-align: center;">Physics - Sound</p> <p>I know how sound is made. I know how sound travels from a source to our ears. I know how sounds are made, associating some of them with vibrating. I know the correlation between pitch and the object producing a sound. I know the correlation between the volume of a sound and the strength of the vibrations that produced it. I know what happens to a sound as it travels away from its source.</p>	<p style="text-align: center;">Biology - Living things and their habitats</p> <p>I group living things in different ways. I use classification keys to group, identify and name living things. I create classification keys to group, identify and name living things (for others to use). I know how changes to an environment could endanger living things. I can identify and study plants and animals in their habitat. I can identify how the habitat changes throughout the year. I can group a wide selection of living things that include animals, flowering plants and non-flowering plants.</p>



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	<p>Chemistry - Properties and changes of materials</p> <p>I compare and group materials based on their properties (e.g. hardness, solubility, transparency, conductivity, [electrical & thermal], and response to magnets).</p> <p>I know how a material dissolves to form a solution; explaining the process of dissolving.</p> <p>I know and show how to recover a substance from a solution.</p> <p>I know how some materials can be separated.</p> <p>I 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 know how some changes result in the formation of a new material and that this is usually irreversible e.g. usually associated with burning and the action of acid on bicarbonate of soda.</p> <p>I know about reversible and irreversible changes.</p> <p>I give evidenced reasons based upon comparative and fair tests why materials should be used for specific purposes, including metals, woods and plastic.</p>	<p>Biology - Living things and their habitats</p> <p>I know the life cycle of different living things, e.g. mammal, amphibian, insect bird.</p> <p>I know the differences between different life cycles.</p> <p>I know the process of reproduction in plants.</p> <p>Recap from year 3 – Life cycle of a flowering plant</p> <p>I know the process of reproduction in animals.</p> <p>Biology - Animals, including humans</p> <p>I create a timeline to indicate stages of growth in humans.</p>	<p>Physics - Earth and space</p> <p>I know about and explain the movement of the Earth and other planets relative to the Sun.</p> <p>I know about and explain the movement of the Moon relative to the Earth.</p> <p>I know and demonstrate how night and day are created.</p> <p>I can explain why the sun appears to move across the sky during a day.</p> <p>I describe the Sun, Earth and Moon (using the term spherical).</p> <p>Physics - Forces</p> <p>I know what gravity is and its impact on our lives.</p> <p>I identify and know the effect of air resistance.</p> <p>I identify and know the effect of water resistance.</p> <p>I identify and know the effect of friction that act between moving surfaces.</p> <p>I explain how levers, pulleys and gears allow a smaller force to have a greater effect.</p>
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Skills covered Year 6	<p>Working Scientifically (taught across the academic year)</p> <p><i>I know how to plan different types of scientific enquiry.</i></p> <p><i>I know how to control variables in an enquiry.</i></p> <p><i>I measure accurately and precisely using a range of equipment.</i></p> <p><i>I know how to record data and results using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.</i></p> <p><i>I use the outcome of test results to make predictions and set up a further comparative and fair tests.</i></p> <p><i>I report findings from enquiries in a range of ways.</i></p> <p><i>I state whether evidence supports or refutes an argument or theory.</i></p> <p><i>I read, spell and pronounce scientific vocabulary accurately.</i></p> <p><i>I know how to explain a conclusion from an enquiry.</i></p> <p><i>I explain causal relationships in an enquiry.</i></p> <p><i>I know how to relate the outcome from an enquiry to scientific knowledge</i></p>		
	<p style="text-align: center;">Physics - Light</p> <p>I know how light travels in straight lines.</p> <p>I know and demonstrate how we see objects. (giving out or reflecting light in straight lines travelling to our eyes).</p> <p>I know why shadows have the same shape as the object that casts them.</p> <p>I know how simple optical instruments work, e.g. periscope, telescope, binoculars, mirror, magnifying glass etc.</p> <p><u>Electricity</u></p> <p>I know how the number & voltage of cells in a circuit links to the brightness of a lamp or the volume of a buzzer.</p> <p>I compare and give reasons for why components work and do not work in a circuit.</p> <p>I draw circuit diagrams using correct symbols.</p>	<p style="text-align: center;">Biology - Animals, including humans</p> <p>I identify and name the main parts of the human circulatory system.</p> <p>I know the function of the heart, blood vessels and blood.</p> <p>I know the impact of diet, exercise, drugs and life style on health.</p> <p>I know the ways in which nutrients and water are transported in animals, including humans.</p> <p style="text-align: center;">Biology - Evolution and inheritance</p> <p>I know how the Earth and living things have changed over time.</p> <p>I know about reproduction and offspring (recognising that offspring normally vary and are not identical to their parents).</p> <p>I know how animals and plants are adapted to suit their environment.</p> <p>I link adaptation over time to evolution.</p> <p>I know about evolution and can explain what it is.</p> <p style="text-align: center;">Chemistry - Evolution and inheritance</p> <p>I know how fossils can be used to find out about the past. (recap of year 3 skills but link with evolution e.g. how a bird has evolved looking at fossils of birds)</p>	<p style="text-align: center;">Biology - Living things and their habitats</p> <p>I classify living things into broad groups according to observable characteristics and based on similarities & differences.</p> <p>I know how living things have been classified.</p> <p>I give reasons for classifying plants and animals and including microorganisms in a specific way.</p> <p style="text-align: center;">Chemistry - Properties and changes of materials (recall of Year 5 skills)</p> <p>I know and can demonstrate that some changes are reversible and some are not.</p> <p>I know how some changes result in the formation of a new material and that this is usually irreversible</p> <p>I know about reversible and irreversible changes.</p>



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