



# Rotherhithe Primary School

## Science Progression of Knowledge and Skills Document

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Biology: Animals including humans	<p>Identify that animals are living things</p> <p>Know the difference between a living and non-living thing</p> <p>Use different media to create a model</p> <p>Explain how some products can be produced by an animal</p> <p>Understand the role farm animals have as a producer</p> <p>Know which animals live on a farm</p> <p>Understand the importance of staying healthy</p> <p>Describe a balanced diet</p> <p>Know the difference between healthy and unhealthy food</p> <p>Explain where eggs come from</p> <p>Understand stages of a chicken's life</p> <p>Name the parts of a chicken</p> <p>Understand how milk can be used to keep us healthy</p> <p>Explain what a cow produces</p> <p>Explain where milk comes from</p> <p>Understand which creatures are insects and invertebrates</p> <p>Describe the differences between spiders, flies and centipedes</p>	<p>Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals</p> <p>Identify and name a variety of common animals that are carnivores, herbivores and omnivores</p> <p>Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets)</p> <p>Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense</p> <p>Asking simple questions and recognise that they can be answered in different ways</p> <p>Observe closely, using simple equipment</p> <p>Identify and classify</p> <p>Using observations and ideas to suggest answers to questions</p> <p>Gather and record data to help in answering questions</p>	<p>Notice that animals, including humans, have offspring which grow into adults</p> <p>Find out about and describe the basic needs of animals, including humans, for survival (water, food and air)</p> <p>Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene</p> <p>Asking simple questions and recognise that they can be answered in different ways</p> <p>Perform simple tests</p> <p>Identify and classify</p> <p>Using observations and ideas to suggest answers to questions</p> <p>Gather and record data to help in answering questions</p>	<p>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</p> <p>Identify that humans and some other animals have skeletons and muscles for support, protection and movement</p> <p>Gather, record, classify and present data in a variety of ways to help in answering questions</p> <p>Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables</p> <p>Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions</p> <p>Identify differences, similarities or changes related to simple scientific ideas and processes</p> <p>Use straightforward scientific evidence to</p>	<p>Describe the simple functions of the basic parts of the digestive system in humans</p> <p>Identify the different types of teeth in humans and their simple functions</p> <p>Construct and interpret a variety of food chains, identifying producers, predators and prey</p> <p>Ask relevant questions and using different types of scientific enquiries to answer them</p> <p>Gather, record, classify and present data in a variety of ways to help in answering questions</p> <p>Identify differences, similarities or changes related to simple scientific ideas and processes</p> <p>Use straightforward scientific evidence to answer questions or to support their findings</p>	<p>Describe the changes as humans develop to old age</p> <p>Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary</p> <p>Use test results to make predictions to set up further comparative and fair tests</p>	<p>Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood</p> <p>Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function</p> <p>Describe the ways in which nutrients and water are transported within animals, including humans</p> <p>Use test results to make predictions to set up further comparative and fair tests</p>



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	<p>Name and draw the parts of an insect</p> <p>Explain how I use my arms, legs, and chest</p> <p>Give examples to explain how I use my arms, legs, and chest</p> <p>Label parts of my body on a diagram</p> <p>Describe and explain how we use our eyes and nose to see and smell</p> <p>Know which senses our eyes and nose are used for</p> <p>Know what the eyes and nose are and where they are</p> <p>Explain how ears work</p> <p>Explain the functions of your mouth</p> <p>Understand the functions of your hair</p> <p>Understand how humans grow</p> <p>Describe changes in our own bodies</p> <p>List some ways we have changed from a baby</p>			<p>answer questions or to support their findings</p>			
<p>Biology: Living things and their habitats</p>	<p>Explain what some animals' habitats are like and what they need to survive in their habitat</p> <p>Describe an animal's habitat</p> <p>Know where some domestic and wild animals live</p> <p>Explain why birds need to live in a nest</p> <p>Know the types of food birds feed on</p>		<p>Explore and compare the differences between things that are living, dead, and things that have never been alive</p> <p>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,</p>		<p>Recognise that living things can be grouped in a variety of ways</p> <p>Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment</p> <p>Recognise that environments can change and that this</p>	<p>Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird</p> <p>Describe the life process of reproduction in some plants and animals</p> <p>Take measurements,</p>	<p>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</p>



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	<p>Identify birds based on their features</p> <p>Identify what insects and invertebrates need to survive</p> <p>Observe insects and invertebrates closely in their habitats</p> <p>Describe where insects and invertebrates live</p> <p>Describe what a habitat is</p>		<p>and how they depend on each other</p> <p>Identify and name a variety of plants and animals in their habitats, including microhabitats</p> <p>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</p> <p>Asking simple questions and recognise that they can be answered in different ways</p> <p>Observe closely, using simple equipment</p> <p>Identify and classify</p> <p>Using observations and ideas to suggest answers to questions</p> <p>Gather and record data to help in answering questions</p>		<p>can sometimes pose dangers to living things</p> <p>Ask relevant questions and using different types of scientific enquiries to answer them</p> <p>Set up simple practical enquiries, comparative and fair tests</p> <p>Make systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers</p> <p>Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables</p> <p>Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions</p> <p>Use straightforward scientific evidence to answer questions or to support their findings</p>	<p>using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate</p> <p>Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs</p> <p>Use test results to make predictions to set up further comparative and fair tests</p>	<p>Give reasons for classifying plants and animals based on specific characteristics</p> <p>Use test results to make predictions to set up further comparative and fair tests</p>
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Biology: Plants	<p>Understand which vegetables grow overground or underground</p> <p>Name several types of vegetables</p> <p>Identify three different types of vegetables</p> <p>Identify if a fruit tastes bitter or sweet</p> <p>Use clues to identify a fruit</p> <p>Identify and describe a range of fruit</p> <p>Explain why a plant is a living thing and what it needs to live</p> <p>Describe the features of a living thing</p> <p>Know the difference between a living and a non-living thing</p> <p>Explain the life cycle of a plant</p> <p>Label the key features of a plant</p> <p>Understand where plants come from</p>	<p>Identify and name a variety of common and wild and garden plants, including deciduous and evergreen trees</p> <p>Identify and describe the basic structure of a variety of common flowering plants, including trees</p> <p>Asking simple questions and recognise that they can be answered in different ways</p> <p>Observe closely, using simple equipment</p> <p>Identify and classify</p> <p>Using observations and ideas to suggest answers to questions</p> <p>Gather and record data to help in answering questions</p>	<p>Observe and describe how seeds and bulbs into mature plants</p> <p>Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy</p> <p>Asking simple questions and recognise that they can be answered in different ways</p> <p>Observe closely, using simple equipment</p> <p>Perform simple tests</p> <p>Identify and classify</p> <p>Using observations and ideas to suggest answers to questions</p> <p>Gather and record data to help in answering questions</p>	<p>Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers</p> <p>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</p> <p>Investigate the way in which water is transported within plants</p> <p>Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal</p>			
Biology: Evolution and Inheritance							<p>Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago</p> <p>Recognise that living things produce offspring of the same kind, but normally offspring vary and</p>

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						<p>are not identical to their parents Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution</p> <p>Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs Use test results to make predictions</p>
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							to set up further comparative and fair tests
Chemistry: Materials	<p>Explain what a home needs to work</p> <p>Understand which materials are needed to build a home</p> <p>Explain the difference between different types of homes</p> <p>Explain what happens to chocolate when it starts to melt</p> <p>Explain what happens to chocolate when it starts to become hard</p> <p>Use a mould to make an ice cube</p> <p>Explain how ice is formed</p> <p>Describe the best conditions for melting ice</p> <p>Explain which material is the most absorbent</p> <p>Explain which material is good for different clothing</p> <p>Complete a simple test</p>	<p>Distinguish between an object and the material from which it is made</p> <p>Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock</p> <p>Describe the simple physical properties of a variety of everyday materials</p> <p>Compare and group together a variety of everyday materials on the basis of their simple physical properties</p> <p>Perform simple tests</p> <p>Identify and classify</p> <p>Using observations and ideas to suggest answers to questions</p> <p>Gather and record data to help in answering questions</p>	<p>Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses</p> <p>Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching</p> <p>Perform simple tests</p> <p>Using observations and ideas to suggest answers to questions</p> <p>Gather and record data to help in answering questions</p>			<p>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</p> <p>Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution</p> <p>Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating</p> <p>Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials,</p>	



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						<p>including metals, wood and plastic Demonstrate that dissolving, mixing and changes of state are reversible changes 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</p> <p>Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs</p>	
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						Identify scientific evidence that has been used to support or refute ideas or arguments	
Chemistry: Seasonal changes	Understand seasonal changes Explain what happens during each season Describe what happens to a tree during the four seasons	Observe changes across the 4 seasons Observe and describe weather associated with the seasons and how day length varies  Perform simple tests Identify and classify Using observations and ideas to suggest answers to questions Gather and record data to help in answering questions					
Chemistry: Rocks	Understand some important processes and changes in the natural world around them			Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties Describe in simple terms how fossils are formed when things that have lived are trapped within rock Recognise that soils are made from rocks and organic matter  Make systematic and careful observations and, where appropriate, taking accurate			





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				<p>measurements using standard units, using a range of equipment, including thermometers and data loggers</p> <p>Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions</p> <p>Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions</p> <p>Identify differences, similarities or changes related to simple scientific ideas and processes</p>			
Chemistry: States of matter	<p>Follow verbal instructions to make a mixture</p> <p>Describe the changes the batter mix goes through as it starts to cook</p> <p>Explain how to measure</p> <p>Understand the process in making dough</p>			<p>Compare and group materials together, according to whether they are solids, liquids or gases</p> <p>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)</p> <p>Identify the part played by evaporation and condensation in the</p>			

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					<p>water cycle and associate the rate of evaporation with temperature</p> <p>Ask relevant questions and using different types of scientific enquiries to answer them</p> <p>Set up simple practical enquiries, comparative and fair tests</p> <p>Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions</p> <p>Identify differences, similarities or changes related to simple scientific ideas and processes</p>		
Physics: Earth and space	<p>Understand how far planets are from the Sun</p> <p>Describe what different planets are like</p> <p>Know there are other planets in our solar system</p>					<p>Describe the movement of the Earth and other planets relative to the sun in the solar system</p> <p>Describe the movement of the moon relative to the Earth</p> <p>Describe the sun, Earth and moon as approximately spherical bodies</p> <p>Use the idea of</p>	

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						<p>the Earth's rotation to explain day and night and the apparent movement of the sun across the sky</p> <p>Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs</p>	
Physics: Light	Understand seasonal changes Explain what happens during each season			<p>Recognise that they need light in order to see things and that dark is the absence of light Notice that light is reflected from surfaces Recognise that light from the sun can be dangerous and that there are ways to protect their eyes Recognise that shadows are formed when the light from a</p>		<p>Recognise that light appears to travel in straight lines 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 Explain that we see things because light travels from light</p>	

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				<p>light source is blocked by an opaque object Find patterns in the way that the size of shadows change</p> <p>Gather, record, classify and present data in a variety of ways to help in answering questions Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions Identify differences, similarities or changes related to simple scientific ideas and processes</p>		<p>sources to our eyes or from light sources to objects and then to our eyes Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them</p> <p>Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate Use test results to make predictions to set up further comparative and fair tests</p>
Physics: Forces	<p>Describe what happens when pushes and pulls oppose each other Suggest examples of pushes and pulls Identify if an action is a push or a pull Group objects based on whether they sink or float Explain what sink means</p>			<p>Compare how things move on different surfaces Notice that some forces need contact between 2 objects, but magnetic forces can act at a distance Observe how magnets attract or repel each other and attract some</p>		<p>Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object Identify the effects of air resistance, water resistance and</p>



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	Explain what float means			<p>materials and not others 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 Describe magnets as having 2 poles Predict whether 2 magnets will attract or repel each other, depending on which poles are facing</p> <p>Set up simple practical enquiries, comparative and fair tests Make systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables Report on findings from enquiries, including oral and written explanations,</p>		<p>friction, that act between moving surfaces Recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect</p> <p>Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs Use test results to make predictions to set up further comparative and fair tests</p>	
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				displays or presentations of results and conclusions			
Physics: Electricity	Identify where electrical appliances can be used Identify what I need to do to stay safe when using electrical appliances Explain why water and electricity do not mix				Identify common appliances that run on electricity Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers 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 Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit Recognise some common conductors and insulators, and associate metals with being good conductor  Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables Use results to draw simple conclusions,		Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit 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 Use recognised symbols when representing a simple circuit in a diagram  Identify scientific evidence that has been used to support or refute ideas or arguments



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					<p>make predictions for new values, suggest improvements and raise further questions</p> <p>Identify differences, similarities or changes related to simple scientific ideas and processes</p>		
Physics: Sound	<p>Explain that different materials can make different sounds</p> <p>Make a simple musical instrument</p> <p>Explain how to change a sound being made</p> <p>Understand sound as vibrations</p>				<p>Identify how sounds are made, associating some of them with something vibrating</p> <p>Recognise that vibrations from sounds travel through a medium to the ear</p> <p>Find patterns between the pitch of a sound and features of the object that produced it</p> <p>Find patterns between the volume of a sound and the strength of the vibrations that produced it</p> <p>Recognise that sounds get fainter as the distance from the sound source increases</p> <p>Ask relevant questions and using different types of scientific enquiries to answer them</p> <p>Gather, record, classify and present data in a variety of</p>		

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					ways to help in answering questions Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions Use straightforward scientific evidence to answer questions or to support their findings		
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