



Progression in Science

Knowledge	Biology				Scientific skills
	Animal including humans	Living things and their habitats	Plants	Evolution and inheritance	
Foundation stage					
Year 1	<ul style="list-style-type: none"> • Know how to classify a range of animals by amphibians, reptile, mammal, fish and birds • Know and classify animals by what they eat (carnivore, herbivore and omnivore) • Know how to sort by living and non-living things. • Know the name of parts of the human body that can be seen. 		<ul style="list-style-type: none"> • Know and name a variety of common wild and garden plants • Know and name the petals, stem, leaves and root of a plant • Know and name the roots, trunk, branches, and leaves of a tree. 		<ul style="list-style-type: none"> • Ask questions, such as Why are flowers different colours? Why do some animals eat meat and other do not? • Set up a test to see which materials keeps things warmest, know if the test has been successful and can say what has been learned • Explain to someone what has been learned from an investigation they have been involved with and draw conclusions from the answers to the questions asked • Use measures to help find out more about the investigations undertaken
Year 2	<ul style="list-style-type: none"> • Know the basic stages in a life cycle of animals (including humans) 	<ul style="list-style-type: none"> • Classify things by living, dead and never lived. • Know how a specific habitat 	<ul style="list-style-type: none"> • Know and explain how seeds and bulbs grow into plants 		<ul style="list-style-type: none"> • Ask question such as Why do some trees lose their leaves in Autumn and others do not? How long are roots of tall trees?



	<ul style="list-style-type: none"> • Know why exercise, a balanced diet and good hygiene are important for humans. 	<p>provides for the basic needs of living things there (plants and animals)</p> <ul style="list-style-type: none"> • Match living livings to their habitat • Name some different sources of food for animals • Know about and explain a simple food chain. 	<ul style="list-style-type: none"> • Know what plants need in order to grow and stay healthy (water, light and suitable temperature) 		<p>Why do some animals have underground habitats?</p> <ul style="list-style-type: none"> • Use equipment such as thermometers and rain gauges to help observe changes to local environment as the year progresses • Use microscopes to find out more about small creatures and plants • Know how to set up a fair test and do so when finding out about how seeds grow best • Classify or group things according to a given criteria e.g. deciduous and coniferous trees • Draw conclusions from fair tests and explain what has been found out • Use measures to help find out more about the investigations they are engaged with.
<p>Year 3</p>	<ul style="list-style-type: none"> • Know about the importance of a nutritious balanced diet • Know how nutrients, water and oxygen are transported within animals and humans • Know about the skeletal and muscular system of a human. 		<ul style="list-style-type: none"> • Know the function of different parts of flowering plants and trees • Know how water is transported within plants • Know the plant life cycle, especially the importance of flowers 		<ul style="list-style-type: none"> • Ask question such as; Why does the moon appear as different shapes in the night sky? Why do shadows change during the day? Where does a fossil come from? • Make observation • Use research • Set up a fair test • Take measurements (use a thermometer, gather and record information, group information, use bar charts, • Use a key • Draw conclusions which help us to understand scientific information



					Amend predictions and be prepared to change ideas as a result of what has been found out.
Year 4	<ul style="list-style-type: none"> Identify and name the parts of the human digestive system Know the functions of the organs in the human digestive system Identify and know the different types of human teeth Know the functions of different human teeth Use and construct food chains to identify producers, predators and prey. 	<ul style="list-style-type: none"> Use classification keys to group identify and name living things Know how changes to an environment could endanger living things Group materials based on their state of matter (solid, liquid, gas) 			<ul style="list-style-type: none"> Ask questions Use research Carry out and set up a fair test Measure data using a data logger, thermometer Gather information Present information using a bar chart and other statistical tables Write up findings Draw conclusions from measureable findings Make and amend predictions and change ideas based on what has been found out.
Year 5	<ul style="list-style-type: none"> Create a timeline to indicate stages of growth in humans 	<ul style="list-style-type: none"> Know the life cycle of different living things e.g. mammal, amphibian, insect and bird Know the differences between different life cycles 			<ul style="list-style-type: none"> Set up an investigation Set up a fair test Set up an enquiry based investigation Know what the variables are in a given enquiry Use measurements including capacity and mass



		<ul style="list-style-type: none"> • Know the process of reproduction in plants • Know the process of reproduction in animals 			<ul style="list-style-type: none"> • Use other scientific instruments as needed e.g. thermometer, rain gauge, spring scales • Record data • Make predictions based on information from investigation • Use diagrams as and when necessary to support writing • Relate causal relationships • Frequently carry out research when investigating a scientific principle or theory
<p>Year 6</p>	<ul style="list-style-type: none"> • Identify and name the main parts of the human circulatory system • Know the function of the heart, blood vessels and blood. • Know the impact of diet, exercise, drugs and lifestyle on health • Know the ways in which nutrients and water are transported in animals, including humans 	<ul style="list-style-type: none"> • Classify living things into broad groups according to observable characteristics and based on similarities and differences. • Know how living things have been classified • Give reasons for classifying plants and animals in a specific way 		<ul style="list-style-type: none"> • Know how the earth and living things have changed over time. • Know how fossils can be used to find out about the past. • Know about reproduction and offspring • Know how animals and plants are adapted to suit their environment • Link adaptation over time to evolution • Know about evolution and can explain what it is. 	<ul style="list-style-type: none"> • Know which type of investigation is needed to suit a particular scientific enquiry • Know how to set up on an enquiry based investigation • Know what the variables are in a given enquiry and can isolate each one when investigating • Use of measurements including capacity, mass, ratio, and proportion • Record data and present them in a range of ways including diagrams, labels, classification keys, tables, scatter graphs, and bar and line graphs. • Make predictions based on information gleaned from their investigations and create new investigations as a result • Able to present information related to scientific enquires • Use a range of written methods to report findings including focusing on the planning, doing and evaluating phases • Aware of the need to support curriculum with evidence



					<ul style="list-style-type: none"> • Able to give an example of something they have focused on when supporting a scientific theory e.g. classifying vertebrate and invertebrate creatures or why certain creatures choose their unique habitats.
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	Chemistry				Scientific Skills
	Everyday materials	Properties and changes in materials	Rocks	States of matter	
Foundation stage					
Year 1	<ul style="list-style-type: none"> • Know the name of the materials an object is made from • Know about the properties of everyday materials 				<ul style="list-style-type: none"> • Ask questions, such as Why are flowers different colours? Why do some animals eat meat and other do not? • Set up a test to see which materials keeps things warmest, know if the test has been successful and can say what has been learned • Explain to someone what has been learned from an investigation they have been involved with and draw conclusions from the answers to the questions asked



					Use measures to help find out more about the investigations undertaken
Year 2	<ul style="list-style-type: none"> • Know how materials can be changed by squashing, bending, twisting and stretching • Know why a material might or might not be used for a specific job. 				<ul style="list-style-type: none"> • Ask question such as Why do some trees lose their leaves in Autumn and others do not? How long are roots of tall trees? Why do some animals have underground habitats? • Use equipment such as thermometers and rain gauges to help observe changes to local environment as the year progresses • Use microscopes to find out more about small creatures and plants • Know how to set up a fair test and do so when finding out about how seeds grow best • Classify or group things according to a given criteria e.g. deciduous and coniferous trees • Draw conclusions from fair tests and explain what has been found out <p>Use measures to help find out more about the investigations they are engaged with.</p>
Year 3			<ul style="list-style-type: none"> • Compare and group rocks based on their appearance and physical properties giving reasons • Know how soil is made and how fossils are formed 		<ul style="list-style-type: none"> • Ask question such as; Why does the moon appear as different shapes in the night sky? Why do shadows change during the day? Where does a fossil come from? • Make observation • Use research • Set up a fair test



			<ul style="list-style-type: none"> • Know about and explain the difference between sedimentary, metamorphic and igneous rock 		<ul style="list-style-type: none"> • Take measurements (use a thermometer, gather and record information, group information, use bar charts, • Use a key • Draw conclusions which help us to understand scientific information Amend predictions and be prepared to change ideas as a result of what has been found out.
Year 4				<ul style="list-style-type: none"> • Know the temperature of which materials change state • Know about and explore how some materials can change state • Know the part played by evaporation and condensation in the water cycle. 	<ul style="list-style-type: none"> • Ask questions • Use research • Carry out and set up a fair test • Measure data using a data logger, thermometer • Gather information • Present information using a bar chart and other statistical tables • Write up findings • Draw conclusions from measurable findings Make and amend predictions and change ideas based on what has been found out.
Year 5		<ul style="list-style-type: none"> • Compare and group materials based on their properties • Know and explain how a material dissolves to form a solution • Know and show how to recover a substance from a solution • Know and demonstrate how 			<ul style="list-style-type: none"> • Set up an investigation • Set up a fair test • Set up an enquiry based investigation • Know what the variables are in a given enquiry • Use measurements including capacity and mass • Use other scientific instruments as needed e.g. thermometer, rain gauge, spring scales • Record data • Make predictions based on information from investigation



		<p>some materials can be separated</p> <ul style="list-style-type: none"> • Know and demonstrate that some changes are reversible and some are not • Know how some changes result in the formation of a new material and this is usually irreversible 			<ul style="list-style-type: none"> • Use diagrams as and when necessary to support writing • Relate causal relationships <p>Frequently carry out research when investigating a scientific principle or theory.</p>
Year 6					<ul style="list-style-type: none"> • Know which type of investigation is needed to suit a particular scientific enquiry • Know how to set up on an enquiry based investigation • Know what the variables are in a given enquiry and can isolate each one when investigating • Use of measurements including capacity, mass, ratio, and proportion • Record data and present them in a range of ways including diagrams, labels, classification keys, tables, scatter graphs, and bar and line graphs. • Make predictions based on information gleaned from their investigations and create new investigations as a result • Able to present information related to scientific enquires • Use a range of written methods to report findings including focusing on the planning, doing and evaluating phases



					<ul style="list-style-type: none">• Aware of the need to support curriculum with evidence• Able to give an example of something they have focused on when supporting a scientific theory e.g. classifying vertebrate and invertebrate creatures or why certain creatures choose their unique habitats.
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Knowledge and skills	Physics						Scientific skills
	Season changes	Earth and Space	Forces	Light	Sound	Electricity	
Foundation stage							
Year 1	<ul style="list-style-type: none"> Name the seasons and know about the type of weather in each season. 						<ul style="list-style-type: none"> Ask questions, such as Why are flowers different colours? Why do some animals eat meat and other do not? Set up a test to see which materials keeps things warmest, know if the test has been successful and can say what has been learned Explain to someone what has been learned from an investigation they have been involved with and draw conclusions from the answers to the questions asked <p>Use measures to help find out more about the investigations undertaken</p>
Year 2							<ul style="list-style-type: none"> Ask question such as Why do some trees lose their leaves in Autumn and others do not? How long are roots of tall trees? Why do some animals have underground habitats?



							<ul style="list-style-type: none"> • Use equipment such as thermometers and rain gauges to help observe changes to local environment as the year progresses • Use microscopes to find out more about small creatures and plants • Know how to set up a fair test and do so when finding out about how seeds grow best • Classify or group things according to a given criteria e.g. deciduous and coniferous trees • Draw conclusions from fair tests and explain what has been found out Use measures to help find out more about the investigations they are engaged with.
Year 3			<ul style="list-style-type: none"> • Know about and describe how objects move on different surfaces • Know how a simple pulley works and use to lift an object • Know how some forces require contact and some 	<ul style="list-style-type: none"> • Know that dark is the absence of light • Know that light is needed in order to see and is reflected from a surface • Know and demonstrate how a shadow is formed and explain how a shadow changes shape 			<ul style="list-style-type: none"> • Ask question such as; Why does the moon appear as different shapes in the night sky? Why do shadows change during the day? Where does a fossil come from? • Make observation • Use research • Set up a fair test • Take measurements (use a thermometer, gather and record information, group information, use bar charts, • Use a key • Draw conclusions which help us to understand scientific information • Amend predictions and be prepared to change ideas as a result of what has been found out.



			<p>don not giving examples</p> <ul style="list-style-type: none"> • Know about and explain how magnets attract and repel. Predict whether magnets will attract or repel and give a reason. 	<ul style="list-style-type: none"> • Know about the danger of direct sunlight and describe how to keep protected. 			
Year 4					<ul style="list-style-type: none"> • Know how sound is made associating some of them with vibrating • Know how sound travels from a source to our ears • Know the correlation between pitch and the object producing a sound • Know the correlation between the volume of 	<ul style="list-style-type: none"> • Identify and name appliances that require electricity to function • Construct a series circuit • Identify and name the components in a series circuit (including cells, wires, bulbs, switches and buzzers) • Predict and test whether a lamp will light within a circuit 	<ul style="list-style-type: none"> • Ask questions • Use research • Carry out and set up a fair test • Measure data using a data logger, thermometer • Gather information • Present information using a bar chart and other statistical tables • Write up findings • Draw conclusions from measureable findings <p>Make and amend predictions and change ideas based on what has been found out.</p>



					<p>sound and the strength of the vibrations that produced it Know what happens to a sound as it travels away from its source.</p>	<ul style="list-style-type: none"> • Know the function of a switch • Know the difference between a conductor and an insulator: giving examples of each 	
Year 5		<ul style="list-style-type: none"> • Know about and explain the movement of the Earth and other planets relative to the sun. • Know about and explain the movement of the Moon relative the Earth • Know and demonstrate how night and day are created • Describe the Sun, Earth and Moon using the term spherical. 	<ul style="list-style-type: none"> • Know what gravity is and its impact on our lives • Identify and know the effect of air and water resistance • Identify and know the effect of friction • Explain how levers, pulleys and gears allow a smaller force to have a greater effect 				<ul style="list-style-type: none"> • Set up an investigation • Set up a fair test • Set up an enquiry based investigation • Know what the variables are in a given enquiry • Use measurements including capacity and mass • Use other scientific instruments as needed e.g. thermometer, rain gauge, spring scales • Record data • Make predictions based on information from investigation • Use diagrams as and when necessary to support writing • Relate causal relationships <p>Frequently carry out research when investigating a scientific principle or theory</p>



Year 6				<ul style="list-style-type: none"> • Know how light travels • Know and demonstrate how we see objects • Know why shadows have the same shape as the object that casts them • Know how simple optical instruments work e.g. periscope, telescope, binoculars, mirror, and magnifying glass. 		<ul style="list-style-type: none"> • Compare and give reasons for why components work and not work in a circuit • Draw a circuit diagram using correct symbols • Know how the number and voltage of cells in a circuit links to the brightness of a lamp of the volume of a buzzer. 	<ul style="list-style-type: none"> • Know which type of investigation is needed to suit a particular scientific enquiry • Know how to set up on an enquiry based investigation • Know what the variables are in a given enquiry and can isolate each one when investigating • Use of measurements including capacity, mass, ratio, and proportion • Record data and present them in a range of ways including diagrams, labels, classification keys, tables, scatter graphs, and bar and line graphs. • Make predictions based on information gleaned from their investigations and create new investigations as a result • Able to present information related to scientific enquires • Use a range of written methods to report findings including focusing on the planning, doing and evaluating phases • Aware of the need to support curriculum with evidence • Able to give an example of something they have focused on when supporting a scientific theory e.g. classifying vertebrate and invertebrate creatures or why certain creatures choose their unique habitats.
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