

# Science

	Big Idea: Investigation					
	ASPECT: Questioning					
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
National Curriculum	<u>Working scientifically:</u> Ask simple questions and recognising that they can be answered in different ways. Use their observations and ideas to suggest answers to questions. Gather and record data to help in answering questions.		<u>Working scientifically:</u> Ask relevant questions and use different types of scientific enquiries to answer them. 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.		<u>Working scientifically:</u> Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.	
Skills	Ask simple scientific questions.	Ask and answer scientific questions about the world around them.	Ask questions about the world around them and explain that they can be answered in different ways.	Ask relevant scientific questions, independently, about the world around them and begin to identify how they can answer them.	Ask a wide range of relevant scientific questions that broaden their understanding of the world around them and identify how they can answer them.	Ask and answer deeper and broader scientific questions about the local and wider world that build on and extend their own and others' experiences and knowledge.
Knowledge	Question words include what, why, how, when, who and which.	Questions can help us find out about the world.	Questions can help us find out about the world and can be answered in different ways.	Questions can help us find out about the world and can be answered in different ways.	Questions can help us find out about the world and can be answered using a range of scientific enquiries.	Questions can help us find out about the world and can be answered using a range of scientific enquiries, including fair tests, research and observation.
Topic / Coverage	Moon Zoom The Enchanted Woodland	Beachcombers The Scented Garden Wriggle & Crawl	<b>Woven into lessons across science – plants, light, rocks, forces &amp; magnets, animals, including humans.</b>	Blue Abyss Playlist	Peasants, Princes & Pestilence  <b>Weekly science lesson</b>	Frozen Kingdom  <b>Weekly science lesson</b>

# Science

	ASPECT: Measurement					
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
National Curriculum	<p><u>Working Scientifically:</u> Observe closely, using simple equipment. <i>(Dinosaurs/ The Enchanted Woodland)</i></p> <p><b>Perform simple tests.</b></p> <p><u>Plants:</u> Identify and describe the basic structure of a variety of common flowering plants, including trees. <i>(The Enchanted Woodland)</i></p>	<p><u>Working Scientifically:</u> Observe closely, using simple equipment. <i>(Beachcombers/ Muck, Mess &amp; Mixtures/ The Scented Garden/ Towers, Tunnels &amp; Turrets/ Wriggle &amp; Crawl)</i></p> <p>Perform simple tests. <i>(Beachcombers/ Towers, Tunnels &amp; Turrets)</i></p> <p>Gather and record data to help in answering questions. <i>(Towers, Tunnels &amp; Turrets)</i></p> <p><u>Plants:</u> Observe and describe how seeds and bulbs grow into mature plants. <i>(The Scented Garden)</i></p>	<p><b><u>Working Scientifically:</u></b> <b>Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers.</b></p>	<p><b><u>Working Scientifically:</u></b> Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. <i>(Blue Abyss)</i></p> <p><u>Sound:</u> Find patterns between the volume of a sound and the strength of the vibrations that produced it. <i>(Playlist)</i></p> <p><b>Recognise that sounds get fainter as the distance from the sound source increases.</b></p>	<p><b><u>Working Scientifically:</u></b> Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. <i>(Stargazers)</i></p>	<p><b><u>Working Scientifically:</u></b> <b>Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.</b></p>

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Skills	With support, use simple equipment to measure and make observations.	Use simple equipment to measure and make observations.	Take measurements in standard units, using a range of simple equipment.	Take accurate measurements in standard units, using a range of equipment.	Take increasingly accurate measurements in standard units, using a range of chosen equipment.	Take accurate, precise and repeated measurements in standard units, using a range of chosen equipment.
Knowledge	Simple equipment is used to take measurements and observations. Examples include metre sticks, measuring tapes, egg timers and hand lenses.	Simple equipment is used to take measurements and observations. Examples include timers, hand lenses, metre sticks and trundle wheels.	Equipment is used to take measurements in standard units. Examples include data loggers plus sensors, timers (seconds, minutes and hours), thermometers ( $^{\circ}\text{C}$ ) and metre sticks. Taking repeat readings can increase the accuracy of the measurement.	Equipment is used to take measurements in standard units. Examples include data loggers plus sensors, timers (seconds, minutes and hours), thermometers ( $^{\circ}\text{C}$ ), and metre sticks, rulers or trundle wheels	Specialised equipment is used to take measurements in standard units. Examples include data loggers plus sensors, such as light (lux), sound (dB) and temperature ( $^{\circ}\text{C}$ ); timers; thermometers ( $^{\circ}\text{C}$ ), and measuring tapes	Specialised equipment is used to take accurate measurements in standard units. Examples include data loggers plus sensors, such as light (lux), sound (dB) and temperature ( $^{\circ}\text{C}$ ); timers; thermometers ( $^{\circ}\text{C}$ ) and measuring tapes
Topic / Coverage	Dinosaur Planet The Enchanted Woodland	Beachcombers Muck, Mess & Mixtures The Scented Garden Towers, Tunnels & Turrets Wriggle & Crawl	<a href="#">Tremors</a>	Blue abyss Playlist	<a href="#">Stargazers</a> <a href="#">Weekly science - forces</a>	<a href="#">Frozen Kingdom</a> <a href="#">Weekly Science Lesson - Circulation</a>

# Science

	ASPECT: Investigation					
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
National Curriculum	<p><u>Working scientifically</u> Perform simple tests.  Use their observations and ideas to suggest answers to questions.</p> <p>Gather and record data to help in answering questions.</p> <p>Develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them.</p> <p><u>Uses of everyday materials</u> Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.</p>	<p><u>Working scientifically</u> Perform simple tests.</p> <p>Observe closely, using simple equipment.</p> <p>Use their observations and ideas to suggest answers to questions.</p> <p>Identify differences, similarities or changes related to simple scientific ideas and processes.</p> <p><u>Plants</u> <b>Investigate the way in which water is transported within plants.</b></p> <p><b>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.</b></p> <p><b>Forces &amp; Magnets</b> <b>Predict whether two</b></p>	<p><u>Working scientifically</u> Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers.</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>Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.</p>	<p><u>Working scientifically</u> Ask relevant questions and using different types of scientific enquiries to answer them.</p> <p>Report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations.</p> <p>Identify scientific evidence that has been used to support or refute ideas or arguments.</p> <p>Are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future.</p>	<p><u>Working scientifically</u> 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>Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.</p>	<p><u>Working scientifically</u> Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.</p> <p>Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.</p> <p><u>Light</u> <b>Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.</b></p> <p><u>Electricity</u> <b>Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit.</b></p> <p><b>Compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of</b></p>

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		<p>magnets will attract or repel each other, depending on which poles are facing.</p> <p>Compare how things move on different surfaces.</p>	<p><u>States of matter</u> 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.</p>	<p><u>Properties and changes of materials</u> Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic.</p> <p>Demonstrate that dissolving, mixing and changes of state are reversible changes.</p> <p>Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating.</p> <p><u>Forces</u> Identify the effects of air resistance, water resistance and friction, that act between moving surfaces.</p>	buzzers and the on/off position of switches.
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Skills	With support, follow instructions to perform simple tests and begin to talk about what they might do or what might happen.	Follow a set of instructions to perform a range of simple tests, making simple predictions for what might happen and suggesting ways to answer their questions.	Set up and carry out some simple, comparative and fair tests, making predictions for what might happen.	Begin to independently plan, set up and carry out a range of comparative and fair tests, making predictions and following a method accurately.	Plan and carry out a range of enquiries, including writing methods, identifying variables and making predictions based on prior knowledge and understanding.	Plan and carry out a range of enquiries, including writing methods, identifying and controlling variables, deciding on equipment and data to collect and making predictions based on prior knowledge and understanding.
Knowledge	Simple tests can be carried out by following a set of instructions.	Tests can be carried out by following a set of instructions. A prediction is a guess at what might happen in an investigation.	Tests can be set up and carried out by following or planning a set of instructions. A prediction is a best guess for what might happen in an investigation based on some prior knowledge.	Scientific enquiries can be set up and carried out by following or planning a method. A prediction is a statement about what might happen in an investigation, based on some prior knowledge or understanding. A fair test is one in which only one variable is changed and all others remain constant.	A method is a set of clear instructions for how to carry out a scientific investigation. A prediction is a statement about what might happen in an investigation based on some prior knowledge or understanding.	A method is a set of clear instructions for how to carry out a scientific investigation, including what equipment to use and observations to make. A variable is something that can be changed during a fair test. A prediction is a statement about what might happen in an investigation based on some prior knowledge or understanding.
Topic / Coverage	Moon Zoom! Superheroes T he Enchanted Woodland	Beachcombers Land Ahoy! Muck, Mess & Mixtures Towers, Tunnels & Turrets Wriggle & Crawl	Srumdiddlyumptious! Tremors Tribal Tales	Blue Abyss Burps, Bottoms & Bile	Covered in weekly science lesson – materials and forces	Frozen Kingdom Weekly science lesson

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	ASPECT: Observation					
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
National Curriculum	<p><u>Working scientifically</u> Identify and classify.  Gather and record data to help in answering questions.  <u>Everyday materials</u> Distinguish between an object and the material from which it is made.  Compare and group together a variety of everyday materials on the basis of their simple physical properties.  <u>Seasonal changes</u> Observe changes across the four seasons.  Observe and describe the weather associated with the seasons and how day length varies. <u>identify, represent and estimate numbers using different representations, including the number line</u></p>	<p><u>Working scientifically</u> Identify and classify.  Gather and record data to help in answering questions.  Use their observations and ideas to suggest answers to questions.  <u>Living things and their habitats</u> Explore and compare the differences between things that are living, dead, and things that have never been alive.  <u>Plants</u> Observe and describe how seeds and bulbs grow into mature plants.  <u>Uses of everyday materials</u> Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for</p>	<p><u>Working scientifically</u> Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers.  Identify differences, similarities or changes related to simple scientific ideas and processes.</p>	<p><u>Working scientifically</u> Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers.  Identify differences, similarities or changes related to simple scientific ideas and processes.</p>	<p><u>Working scientifically</u> 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.</p>	<p><u>Working scientifically</u> 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.</p>

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	<p><b>particular uses.</b></p> <p><b>Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.</b></p>	<p>Find patterns in the way that the size of shadows change.</p> <p>Notice that light is reflected from surfaces.</p> <p>Recognise that shadows are formed when the light from a light source is blocked by an opaque object.</p> <p><u>Forces &amp; Magnets</u></p> <p>Compare how things move on different surfaces.</p> <p>Notice that some forces need contact between two objects, but magnetic forces can act at a distance.</p> <p>Observe how magnets attract or repel each other and attract some materials and not others.</p> <p>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.</p>	<p>Find patterns between the pitch of a sound and features of the object that produced it.</p> <p><b>Find patterns between the volume of a sound and the strength of the vibrations that produced it.</b></p> <p>Recognise that sounds get fainter as the distance from the sound source increases.</p> <p><u>States of matter</u></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 Celcius.</p> <p><u>Living things &amp; their habitats</u></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>	
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Skills	Observe objects, materials, living things and changes over time, sorting and grouping them based on their features.	Observe objects, materials, living things and changes over time, sorting and grouping them based on their features and explaining their reasoning.	Make increasingly careful observations, identifying similarities, differences and changes and making simple connections.	Begin to choose which observations to make and for how long and make systematic, careful observations and comparisons, identifying changes and connections.	Within a group, decide which observations to make, when and for how long, and make systematic and careful observations, using them to make comparisons, identify changes, classify and make links between cause and effect.	Independently decide which observations to make, when and for how long and make systematic and careful observations, using them to make comparisons, identify changes, classify and make links between cause and effect.
Knowledge	Objects, materials and living things can be looked at and compared.	Objects, materials and living things can be looked at, compared and grouped according to their features.	An observation involves looking closely at objects, materials and living things, which can be compared and grouped according to their features.	An observation involves looking closely at objects, materials and living things. Observations can be made regularly to identify changes over time.	An observation involves looking closely at objects, materials and living things. Accurate observations can be made repeatedly or at regular intervals to identify changes over time.	An observation involves looking closely at objects, materials and living things. Accurate observations can be made repeatedly or at regular intervals to identify changes over time, identify processes and make comparisons.
Topic / Coverage	Bright Lights, Big City Superheroes The enchanted Woodland	Beachcombers The Scented Garden Towers, Tunnels & Turrets	Predator! Srumdiddlyumptious! Tremors Tribal Tales	Blue Abyss Burps, Bottoms & Bile Playlist	Weekly science - materials	Frozen Kingdom Weekly science lesson - circulation