

	Reception/ Y1		Y1/Y2	Y3/Y4		Y5/Y6	
	Everyday Materials (physical processes)	Everyday Materials (properties)	Everyday Materials (properties and uses)	Physics		Physics	
Curriculum Coverage	<p>Children explore and talk about different forces they can feel. They describe the impact of weather &amp; seasons on their daily life and begin to understand the effect of changing seasons on the natural world around them. They investigate forces, light and vibrations and explore how objects move in different ways depending on size and weight.</p> <p>ELG: Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.</p> <p><b>Cycle A</b>  <b>Around the world with Penguin</b> small                      Children learn that frozen water changes to liquid and that this is called <b>melting</b>                      Children learn that some materials <b>float</b> while others <b>sink</b>.</p>	<p>Children use all their senses in hands-on exploration of natural materials and raise their own questions. They explore collections of materials with similar and/or different properties. They explore how things work. Talk about the differences between materials and changes they notice. Know we need to take care of materials e.g. putting things away properly and take responsibility for materials- using them properly, putting them away, performing simple repairs e.g. Sticking torn page.</p> <p><b>Cycle A Three Little pigs</b>                      Children distinguish between an <b>object</b> and the <b>material</b> from which it is made. They identify and name a variety of <b>everyday materials</b>, including wood, plastic, glass, metal, water, and rock. <b>Children</b> compare and group together a variety of everyday materials on the basis of their simple physical properties.</p> <p><b>We're going on a bear hunt</b>                      Children apply their knowledge of everyday materials when exploring and sorting toys from the past and today. They explore the different ways toys move.</p>	<p><b>Cycle A</b>  <b>Toy Story</b>                      Children identify and compare the <b>suitability of a variety of everyday materials</b>, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. They find out how the shapes of solid objects made from <b>some materials can be changed</b> by squashing, bending, twisting and stretching.</p>	<p><b>Cycle A</b>  <b>Forces and Magnets</b>                      Children compare how things <b>move on different surfaces</b>. They notice that some forces need contact between two objects, but <b>magnetic forces can act at a distance</b>. Children observe <b>how magnets attract or repel each other and attract some materials and not others</b> and compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet. Children describe magnets as having <b>two poles</b> and predict whether two magnets will attract or repel each other, depending on which poles are facing.</p>	<p><b>Cycle A</b>  <b>Shocking Electricity</b>                      Children identify <b>common appliances</b> that run on electricity. They construct a <b>simple series electrical circuit</b>, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers and <b>predict</b> 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. They recognise that a <b>switch</b> opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit. Children recognise some common <b>conductors and insulators</b>, and associate metals with being good conductors.</p>	<p><b>Cycle A</b>  <b>All the fun of the fair (forces)</b>                      Children explain that unsupported objects fall towards the Earth because of the force of <b>gravity</b> acting between the Earth and the falling object. They identify the effects of <b>air resistance, water resistance and friction</b>, that act between moving surfaces. They recognise that some mechanisms, including <b>levers, pulleys and gears</b>, allow a smaller force to have a greater effect.</p>	<p><b>Cycle A</b>  <b>Let there be light (electricity and light)</b>                      Children build on knowledge gained in LKS2 and associate the brightness of a lamp or the volume of a buzzer with the number and <b>voltage</b> of cells used in the circuit. They 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. They use <b>recognised symbols</b> when producing a simple <b>circuit diagram</b>. Children build on knowledge about light gained in LKS2 by recognising that light appears to <b>travel in straight lines</b>. They 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. They 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. They use the idea that light travels in straight lines to explain why <b>shadows</b> have the same shape as the objects that cast them.</p>
Essential vocabulary	melt, water, ice, float, sink	material, words to identify specific materials including: wood, plastic, glass, metal, rock, fabric words to describe simple observable properties including: rough, smooth, hard, soft, shiny	material, a wider range of words to identify specific materials including: polystyrene, foil, rubber, cardboard, words to describe observable properties including: transparent, waterproof.	force, gravity, friction, magnet(ism/ ic), pole, attract, repel,	cell, wire, switch, buzzer, circuit, conductor, insulator,	gravity, friction, air resistance, water resistance, lever, pulley, gear	circuit (complete, broken), voltage
Essential skills (working scientifically)	<p>Children <b>ask questions</b> such as "What would happen if...?" and participate in guided investigations performing some simple tests on their own. <b>Predict</b> what might happen and explain why. Children make <b>close observations</b> (using a magnifying glass where appropriate), record ideas in a simple way including making <b>drawings</b> of their observations. Collect data and record in <b>pictograms</b>. They are introduced to scientific classification by <b>sorting</b> animals and plants according to observable features and what they eat.</p>	<p>Children <b>ask questions</b> and know they can be answered in different ways. Children make <b>close observations</b> make <b>labelled drawings</b> of their observations and communicate their findings in <b>simple charts or diagrams</b>. Notice similarities, differences and patterns. They start using <b>scientific terms</b> such as carnivore and omnivore when sorting and classifying animals. Perform <b>simple comparative tests</b> for example in finding out conditions which most effect plant growth. Gather and record <b>data</b> in tables and bar charts.</p>	<p>Children make <b>observations</b> and produce labelled diagrams. They relate their observations to their increasing scientific knowledge, for example by relating observations to an understanding of how magnets behave. They observe how <b>things happen over time</b>, for example how coloured water is transported in celery or a white carnation flower, or how a plant grows over measured intervals of time. They <b>take measurements</b> using standard units and present findings in charts and tables including <b>tables, bar graphs</b> (appropriate for stage of mathematical development) and <b>labelled diagrams</b>. They set up simple practical enquiries and understand how to make sure a test is <b>fair</b>. Children <b>report</b> on findings from enquires, including spoken and written explanations, displays or presentations of results and conclusions. Use straightforward scientific evidence to answer questions or to support findings.</p>	<p>Children use scientific terms when describing abstract concepts such as how we see things. Children <b>report on findings from enquires</b>, including spoken and written explanations, displays or presentations of results and conclusions and <b>use straightforward scientific evidence</b> to answer questions or to support findings. Children <b>ask relevant questions</b> and use different types of <b>scientific enquires</b> to answer them. They learn about the work of <b>famous scientists</b>. They ask questions and learn how they could conduct an experiment to test their question, for example about the effect of exercise on the heart rate. They learn how to recognise and <b>control variables</b> and make sure their data is <b>reliable</b> by taking repeated measurements. They record their data in a variety of increasingly complex ways including <b>line graphs, tables, classification keys, labelled diagrams, scatter graphs and bar graphs</b> where appropriate. They use a wide range of <b>secondary sources</b> in finding out about science. They use <b>scientific vocabulary</b> when communicating what they have learnt.</p>			
Coverage notes	<p>Some science content is taught continuously across the year. Specifically, this includes observing changes across the four seasons and observing and describing weather associated with the seasons and how day length varies. Essential vocabulary to include: weather, sunny, rain, windy, snowy, seasons, Winter, Summer, Spring, Autumn, sun, day, night, sunrise, sunset. Children get to explore the outdoor environment regularly and gradually learn the names of common plants, trees and animals, as well as notice how the seasons effect the life cycle of most trees and plants. Children are provided with practical seasonal tasks such as planting and harvesting to observe the growth of plants over time, learn to identify their features and learn how to look after them.</p>						

	Reception/ Y1		Y1/Y2	Y3/Y4		Y5/Y6	
	Everyday Materials (physical processes)	Everyday Materials (properties)	Everyday Materials (properties and uses)	Physics	Chemistry	Physics	Chemistry
Curriculum Coverage	They describe the impact of weather & seasons on their daily life and begin to understand the effect of changing seasons on the natural world around them. Children explore and talk about different forces they can feel. They Investigate forces, light and vibrations and explore how objects move in different ways depending on size and weight.	Children use all their senses in hands-on exploration of natural materials and raise their own questions.. They explore collections of materials with similar and/or different properties They explore how things work. They talk about the differences between materials and changes they notice. Know we need to take care of materials e.g. putting things away properly and take responsibility for materials- using them properly, putting them away, performing simple repairs e.g. Sticking torn page.	<b>Cycle B</b> <b>Walk the Plank</b> Children identify and compare the <b>suitability of a variety of everyday materials</b> , including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses They find out how the shapes of solid objects made from <b>some materials can be changed</b> by squashing, bending, twisting and stretching.	<b>Cycle B</b> <b>Light</b> Children recognise that they need <b>light</b> in order to see things and that <b>dark</b> is the absence of light. They notice that light is <b>reflected</b> from surfaces Children recognise that <b>light from the sun can be dangerous</b> and that there are ways to protect their eyes Children recognise that <b>shadows</b> are formed when the light from a light source is blocked by a solid object Children find patterns in the way that the <b>size of shadows</b> change.  <b>Cycle B</b> <b>Sound</b> Children identify <b>how sounds are made</b> , associating some of them with something vibrating They recognise that <b>vibrations</b> from sounds travel through a medium to the <b>ear</b> Children find patterns between the <b>pitch</b> of a sound and features of the object that produced it Children find patterns between the <b>volume</b> of a sound and the strength of the vibrations that produced it Children recognise that sounds get fainter as the <b>distance from the sound source</b> increases.	<b>Cycle B</b> <b>Savage Stone age (Rocks)</b> Children compare and group together different kinds of rocks on the basis of their appearance and simple <b>physical properties</b> They describe in simple terms how <b>fossils</b> are formed when things that have lived are trapped within rock Children recognise that <b>soils</b> are made from rocks and organic matter.  <b>Cycle B</b> <b>Iron Man (States of Matter)</b> Children compare and group materials together, according to whether they are <b>solids, liquids or gases</b> They observe that some materials <b>change state</b> when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C)  <b>Cycle B</b> <b>Amazon Adventure (Water Cycle)</b> Children identify the part played by <b>evaporation</b> and <b>condensation</b> in the <b>water cycle</b> and associate the rate of evaporation with temperature.	<b>Cycle B</b> <b>Earth and Space</b> Children describe the <b>movement of the Earth, and other planets</b> , relative to the Sun in the solar system They describe the <b>movement of the Moon</b> relative to the Earth They describe the Sun, Earth and Moon as approximately <b>spherical bodies</b> Children use the idea of the <b>Earth's rotation</b> to explain day and night and the apparent movement of the sun across the sky.	<b>Cycle B</b> <b>Global Bake Off (properties and changes of materials)</b> Children compare and group together everyday materials on the basis of their properties, including their <b>hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets</b> They know that some materials will <b>dissolve in liquid to form a solution</b> , and describe how to recover a substance from a solution Children use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through <b>filtering, sieving and evaporating</b> Children give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic They demonstrate that dissolving, mixing and changes of state are <b>reversible changes</b> Children explain that some changes result in the formation of new materials, and that this kind of change is <b>not usually reversible</b> , including changes associated with burning and the action of acid on bicarbonate of soda. They find out about how chemists create new materials, for example, <b>Spencer Silver</b> , who invented the glue for sticky notes or <b>Ruth Benerito</b> , who invented wrinkle-free cotton.
	<b>ELG: Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.</b>						
	<b>Cycle B</b> <b>Winter</b> Children learn that frozen water changes to liquid and that this is called melting  <b>Commotion in the Ocean</b> Children learn that some materials <b>float</b> while others <b>sink</b> .	<b>Cycle B</b> <b>Commotion in the ocean</b> Children distinguish between an <b>object</b> and the <b>material</b> from which it is made They identify and name a variety of <b>everyday materials</b> , including wood, plastic, glass, metal, water, and rock <b>Children</b> compare and group together a variety of everyday materials on the basis of their simple physical properties.	<b>material</b> , a wider range of words to identify specific materials including: <b>polystyrene, foil, rubber, cardboard</b> , words to describe observable properties including: <b>transparent, waterproof</b> .	<b>force, gravity, friction, magnet(ism/ ic), pole, attract, repel, reflect, shadow, light source vibration, (sound) source, volume, pitch</b>			<b>gravity, friction, air resistance, water resistance, lever, pulley, gear Solar system, galaxy, planet, moon, rotate, axis</b>
Essential vocabulary	<b>melt, water, ice, float, sink</b>	<b>material</b> , words to identify specific materials including: <b>wood, plastic, glass, metal, rock, fabric</b> words to describe simple observable properties including: <b>rough, smooth, hard, soft, shiny</b>					
Essential skills (working scientifically)	Children <b>ask questions</b> such as ‘What would happen if...?’ and participate in guided investigations performing some simple tests on their own. <b>Predict</b> what might happen and explain why. Children make <b>close observations</b> (using a magnifying glass where appropriate), record ideas in a simple way including making <b>drawings</b> of their observations. Collect data and record in <b>pictograms</b> . They are introduced to scientific classification by <b>sorting</b> animals and plants according to observable features and what they eat.		Children <b>ask questions</b> and know they can be answered in different ways. Children make <b>close observations</b> make <b>labelled drawings</b> of their observations and communicate their findings in <b>simple charts or diagrams</b> . Notice similarities, differences and patterns. They start using <b>scientific terms</b> such as carnivore and omnivore when sorting and classifying animals. Perform <b>simple comparative tests</b> for example in finding out conditions which most effect plant growth. Gather and record <b>data</b> in tables and bar charts.	Children make observations and labelled diagrams. They relate their observations to their increasing scientific knowledge, for example by relating observations to the effect that distance has on the volume of a sound. They observe how <b>things happen over time</b> , for example how coloured water is transported in celery or a white carnation flower, or how a plant grows over measured intervals of time. They <b>take measurements</b> using standard units and present findings in charts and tables including <b>tables, bar graphs</b> (appropriate for stage of mathematical development) and <b>labelled diagrams</b> . They set up simple practical enquiries and understand how to make sure a test is <b>fair</b> . Children <b>report</b> on findings from enquires, including spoken and written explanations, displays or presentations of results and conclusions. Use straightforward scientific evidence to answer questions or to support findings.	Children use scientific terms when describing abstract concepts such as evaporation and condensation. Children <b>report on findings from enquires</b> , including spoken and written explanations, displays or presentations of results and conclusions and <b>use</b> straightforward <b>scientific evidence</b> to answer questions or to support findings. Children <b>ask relevant questions</b> and use different types of <b>scientific enquires</b> to answer them. They learn about the work of <b>famous scientists</b> . They ask questions and learn how they could conduct an experiment to test their question, for example about the effect of exercise on the heart rate. They learn how to recognise and <b>control variables</b> and make sure their data is <b>reliable</b> by taking repeated measurements. They record their data in a variety of increasingly complex ways including <b>line graphs, tables, classification keys, labelled diagrams, scatter graphs and bar graphs</b> where appropriate. They use a wide range of <b>secondary sources</b> in finding out about science. They use <b>scientific vocabulary</b> when communicating what they have learnt.		
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