

## Pegasus Primary School-Science Long Term Overview

Science			
<p>By the time our children leave Pegasus Primary School, they will be:</p> <ul style="list-style-type: none"> <li>Curious and fascinated about natural phenomena</li> <li>Understanding of the world through the specific disciplines of biology, chemistry and physics</li> <li>Understanding of the knowledge, methods, processes and uses of science</li> <li>Understanding of how science has changed our lives and is vital to the world's future prosperity</li> </ul> <p>Understanding of how science can be used to explain what is occurring, predict how things will behave and analyse causes</p>			
See Cornerstones 'Essential skills' (attached) for subject specific aspects in each year groups			
What will children know?			
<p style="text-align: center;"><b>NC subject content Key Stage 1</b></p> <ul style="list-style-type: none"> <li>Plants</li> <li>Animals, including humans</li> <li>Every day materials</li> <li>Seasonal changes</li> <li>Living things and their habitats</li> <li>Uses of everyday materials</li> </ul>	<p style="text-align: center;"><b>NC subject content Lower Key Stage 2</b></p> <ul style="list-style-type: none"> <li>Plants</li> <li>Animals, including humans</li> <li>Rocks</li> <li>Light</li> <li>Forces and magnets</li> <li>Living things and their habitats</li> <li>States of matter</li> <li>Sound</li> <li>Electricity</li> </ul>	<p style="text-align: center;"><b>NC subject content Upper Key Stage 2</b></p> <ul style="list-style-type: none"> <li>Living things and their habitats</li> <li>Animals, including humans</li> <li>Properties and changes of material</li> <li>Earth and space</li> <li>Forces</li> <li>Living things and their habitats</li> <li>Evolution and inheritance</li> <li>Light</li> <li>Electricity</li> </ul>	
	<b>Knowledge</b>	<b>Investigation (Scientific skills to be taught) See Cornerstones Let's Investigate</b>	
Ongoing throughout year 1, starting in September	<p><b>Seasonal Changes</b></p> <ul style="list-style-type: none"> <li>Know the changes across the four seasons</li> <li>Know how weather is associated with the seasons</li> <li>Know how day length varies throughout the year</li> </ul>	<p><b>Does it snow in summer?</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Ask simple questions and recognising that they can be answered in different ways</li> </ul>	<p><b>See Cornerstones Essential Skills Matrix for Year 1</b></p> <p><b>Knowledge and Understanding</b></p> <p><b>Practical</b></p>

<p><b>Year 1</b></p>	<p><b>Enchanted Woodland</b> (Science)</p>	<p><b>Plants and Animals, including humans</b></p> <ul style="list-style-type: none"><li>• Name a variety of common wild and garden plants, including deciduous and evergreen trees.</li><li>• Know the basic structure of a variety of common flowering plants, including trees.</li><li>• Name a variety of common animals including fish,</li></ul>	<p><b>Are all leaves the same?</b></p> <ul style="list-style-type: none"><li>• Observing closely, using simple equipment</li><li>• Performing simple tests</li></ul>
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		amphibians, reptiles, birds and mammals.	
<b>Dinosaur Planet</b> (History)	<b>Animals, including humans</b> <ul style="list-style-type: none"> <li>Name a variety of common animals including fish, amphibians, reptiles, birds and mammals.</li> <li>Name a variety of common animals that are carnivores, herbivores and omnivores</li> <li>Know the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets)</li> </ul>	<b>Whose poo?</b> <ul style="list-style-type: none"> <li>Identify and classifying</li> <li>Using their observations and ideas to suggest answers to questions</li> </ul>	
<b>Bright Lights, Big City</b> (Geography)	<b>Everyday materials</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> Name an object and the materials which it is made from</li> </ul>	<b>How do you make bread?</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> Gather and recording data to help in answering questions</li> </ul>	
<b>Paws, Claws and Whiskers</b> (Art)	<b>Animals, including humans</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> Name a variety of common animals that are carnivores, herbivores and omnivores</li> </ul> <p>Know the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets)</p>	<b>Can you leap like a frog?</b> <ul style="list-style-type: none"> <li>Identify and classifying</li> <li>Performing simple tests</li> </ul>	
<b>Superheroes</b> (Science)	<b>Animals, including humans</b> <ul style="list-style-type: none"> <li>Identify, name, draw and label the basic parts of the human body</li> <li>Know which part of the body is associated with each sense.</li> <li>Know the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.</li> </ul>	<b>What can our hands do?</b> <ul style="list-style-type: none"> <li>Gather and recording data to help in answering questions</li> <li>Performing simple tests</li> </ul>	



	<b>Moon Zoom</b> (DT)	<b>Everyday materials</b> <ul style="list-style-type: none"> <li>Name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock</li> <li>Know the physical properties of a variety of everyday materials</li> </ul>	<b>How does it feel?</b> <ul style="list-style-type: none"> <li>Gather and recording data to help in answering questions</li> </ul>	
	<b>The Scented Garden</b> (Science)	<b>Plants</b> <ul style="list-style-type: none"> <li>observe and describe how seeds and bulbs grow into mature plants</li> </ul> find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.	<b>What's on your wellies?</b> <ul style="list-style-type: none"> <li>Perform simple tests</li> <li>Use observations and ideas to suggest answers to questions</li> <li>Gather and recording data to help in answering questions</li> </ul>	<b>See Cornerstones Essential Skills Matrix for Year 2</b>  <b>Knowledge and Understanding</b>  <b>Practical</b>
<b>Year 2</b>	<b>Land Ahoy!</b> (Geography)	<b>Uses of every day materials</b> <ul style="list-style-type: none"> <li>Know the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses</li> <li>Know the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.</li> </ul>	<b>Can you find the treasure?</b> <ul style="list-style-type: none"> <li>Perform simple tests</li> <li>Use observations and ideas to suggest answers to questions</li> </ul>	
	<b>Street Detective</b> (Geography/History)	<b>Living Things and their habitats</b> - <ul style="list-style-type: none"> <li>Identify that most living things live in habitats to which they are suited.</li> <li>Describe how different habitats provide for the basic needs of different kinds of animals and plants and how they depend on each other – identify and name a variety of plants and animals in their habitats, and microhabitats</li> </ul>	<b>Where do snails live?</b>  <b>Working scientifically</b> <ul style="list-style-type: none"> <li>Identify and classify –</li> <li>Gather and record data to help answer questions</li> </ul>	

<p><b>Towers, Tunnels and Turrets</b> (History)</p>	<p><b>Uses of every day materials and Living Things</b></p>	<p><b>Can you make a paper bridge?</b></p> <ul style="list-style-type: none"><li><input type="checkbox"/> Observe closely using simple equipment</li></ul>	
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	<ul style="list-style-type: none"> <li>• Know the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses</li> <li>• Know that most living things live in habitats to which they are suited Know how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other</li> </ul>	<input type="checkbox"/> Perform simple tests	
<b>Wriggle and Crawl (Science)</b>	<p><b>Living Things and Animals, including humans</b></p> <ul style="list-style-type: none"> <li>▪ Know a variety of plants and animals in their habitats, including microhabitats</li> <li>▪ notice that animals, including humans, have offspring which grow into adults</li> <li>▪ find out about and describe the basic needs of animals, including humans, for survival (water, food and air)</li> </ul>	<p><b>What is the life cycle of a ladybird?</b></p> <ul style="list-style-type: none"> <li>▪ Ask simple questions and recognising that they can be answered in different ways</li> <li>▪ Use observations and ideas to suggest answers to questions</li> </ul>	
<b>Muck, Mess and Mixtures (D &amp; T)</b>	<p><b>Everyday materials</b></p> <ul style="list-style-type: none"> <li>▪ find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.</li> </ul>	<p><b>How is mud made?</b></p> <ul style="list-style-type: none"> <li>▪ Use observations and ideas to suggest answers to questions</li> <li>▪ Gather and recording data to help in answering questions</li> <li>▪</li> </ul>	
<b>Beachcombers (Science)</b>	<p><b>Living Things and their Habitats</b></p> <ul style="list-style-type: none"> <li>▪ explore and compare the differences between things that are living, dead, and things that have never been alive</li> <li>▪ identify that most living things live in habitats to which</li> </ul>	<p><b>How many arms does an octopus have?</b></p> <ul style="list-style-type: none"> <li>▪ Ask simple questions and recognising that they can be answered in different ways</li> <li>▪ Observing closely, using simple equipment</li> </ul>	



		<p>they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other</p> <ul style="list-style-type: none"> <li>▪ identify and name a variety of plants and animals in their habitats, including microhabitats</li> <li>▪ 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</li> <li>▪ find out about and describe the basic needs of animals, including humans, for survival (water, food and air)</li> </ul>		
<p><b>Year 3</b></p>	<p><b>Mighty Metals</b> (Science)</p>	<p><b>Forces and Magnets</b></p> <ul style="list-style-type: none"> <li>▪ How things move on different surfaces</li> <li>▪ Know that some forces need contact between two objects, but magnetic forces can act at a distance</li> <li>▪ Know how magnets attract or repel each other and attract some materials and not others</li> <li>▪ Know how to group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials</li> <li>▪ Know magnets have two poles</li> </ul>	<p><b>What does friction do?</b></p> <ul style="list-style-type: none"> <li>▪ making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers</li> <li>▪ identifying differences, similarities or changes related to simple scientific ideas and processes</li> </ul>	<p><b>See Cornerstones Essential Skills Matrix for Year 3</b></p> <p><b>Knowledge and Understanding</b></p> <p><b>Practical</b></p>

	<ul style="list-style-type: none"> <li>Know if two magnets will attract or repel each other, depending on which poles are facing.</li> </ul>		
<p><b>Gods and Mortals</b> (History)</p>	<p><b>No Science within the Cornerstones project States of Matter (Y4 objective to be taught before the investigation)</b></p> <ul style="list-style-type: none"> <li>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)</li> </ul>	<p><b>Why did Icarus fall from the sky?</b></p> <ul style="list-style-type: none"> <li>setting up simple practical enquiries, comparative and fair tests</li> <li>using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions</li> <li>identifying differences, similarities or changes related to simple scientific ideas and processes</li> </ul>	
<p><b>Tremors</b> (Geography)</p>	<p><b>Rocks</b></p> <ul style="list-style-type: none"> <li>compare and group together different kinds of rocks on the basis of their appearance and simple physical properties</li> <li>Know how fossils are formed when things that have lived are trapped within rock Know that soils are made from rocks and organic matter</li> </ul>	<p><b>What is sand?</b></p> <ul style="list-style-type: none"> <li>Set up simple practical enquiries and comparative and fair tests.</li> </ul> <p>Use straightforward scientific evidence to answer questions or to support findings.</p>	
<p><b>Scrumdiddlyumptious</b> (Science/D&amp;T)</p>	<p><b>Light</b></p> <ul style="list-style-type: none"> <li>Know that you need light in order to see things and that dark is the absence of light</li> <li>Know that light is reflected from surfaces</li> <li>Know that light from the sun can be dangerous and that there are ways to protect their eyes</li> <li>Know that shadows are formed when the light from a light</li> </ul>	<p><b>How do cats eyes glow at night?</b></p> <ul style="list-style-type: none"> <li>asking relevant questions and using different types of scientific enquiries to answer them</li> <li>reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions</li> </ul>	



		source is blocked by an opaque object Know that the size of shadows change.		
	<b>Urban Pioneers (Art)</b>	<p><b>Animals, including humans</b></p> <ul style="list-style-type: none"> <li>▪ 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</li> <li>▪ identify that humans and some other animals have skeletons and muscles for support, protection and movement.</li> </ul>	<p><b>Which is the juiciest fruit?</b></p> <ul style="list-style-type: none"> <li>▪ making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers</li> <li>▪ recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables</li> <li>▪ reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions</li> </ul>	
	<b>Tribal tales (History)</b>	<p><b>Light and Plants</b></p> <ul style="list-style-type: none"> <li>▪ know that shadows are formed when the light from a light source is blocked by an opaque object</li> <li>▪ Know the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers</li> <li>▪ Know 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</li> <li>▪ Know how water is transported within plants</li> <li>▪ know the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.</li> </ul>	<p><b>What are flowers?</b></p> <ul style="list-style-type: none"> <li>▪ Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions</li> <li>▪ recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables</li> </ul>	
	<b>Potions</b>	<b>States of matter</b>	<b>Is custard a liquid?</b>	



<b>Year 4</b>	(Science)	<ul style="list-style-type: none"> <li>▪ compare and group materials together, according to whether they are solids, liquids or gases</li> <li>▪ 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)</li> </ul>	<ul style="list-style-type: none"> <li>▪ making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers</li> <li>▪ identifying differences, similarities or changes related to simple scientific ideas and processes</li> </ul>	<p><b>See Cornerstones Essential Skills Matrix for Year 4</b></p> <p><b>Knowledge and Understanding</b></p> <p><b>Practical</b></p>
	<b>Blue Abyss (Science)</b>	<ul style="list-style-type: none"> <li>▪ <b>Living Things and Animals, including humans</b></li> <li>▪ Know that living things can be grouped in a variety of ways</li> <li>▪ Know how to use classification keys to help group, identify and name a variety of living things in their local and wider environment</li> <li>▪ Know that environments can change and that this can sometimes pose dangers to living things.</li> <li>▪ Know about food chains, identifying producers, predators and prey.</li> <li>▪</li> </ul>	<p><b>How does pollution affect habitats?</b></p> <ul style="list-style-type: none"> <li>▪ Set up simple practical enquires and comparative and fair tests.</li> <li>▪ making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers</li> <li>▪ using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions</li> </ul>	
	<b>Electricity</b> (3 week science unit Autumn 2)	<p><b>Electricity (To be taught separately after Traders and Raiders – not during)</b></p> <ul style="list-style-type: none"> <li>▪ Name common appliances that run on electricity</li> <li>▪ Know how to construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs,</li> </ul>	<p><b>What conducts electricity?</b></p> <ul style="list-style-type: none"> <li>▪ Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions</li> <li>▪ recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables</li> </ul>	

		<p>switches and buzzers</p> <ul style="list-style-type: none"> <li>▪ Know 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</li> <li>▪ Know that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit</li> <li>▪ Know some common conductors and insulators, and associate metals with being good conductors.</li> </ul>		
	<p><b>I am Warrior</b> (History)</p>	<p><b>Sound (Not in cornerstone unit – standalone science to be taught last 2 weeks)</b></p> <ul style="list-style-type: none"> <li>▪ Know that sounds are made, associating some of them with something vibrating</li> <li>▪ Know that vibrations from sounds travel through a medium to the ear</li> <li>▪ Know patterns between the differences between the pitch of a sound and features of the object that produced it</li> <li>▪ Know patterns between the volume of a sound and the strength of the vibrations that produced it</li> <li>▪ Know that sounds get fainter as the distance from the sound source increases</li> </ul>	<p><b>How far can sound travel?</b></p> <ul style="list-style-type: none"> <li>▪ making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers</li> <li>▪ reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions</li> </ul>	

	<p><b>Misty Mountain Sierra</b> (Geography)</p>	<p><b>States of Matter</b></p> <ul style="list-style-type: none"> <li>Know 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)</li> <li>Know the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.</li> </ul>	<p><b>Can worms sense danger?</b></p> <ul style="list-style-type: none"> <li>Set up simple practical enquires and comparative and fair tests.</li> <li>Use straight forward scientific evidence to answer questions or support findings</li> </ul>	
	<p><b>Traders and Raiders</b> (History)</p>	<p><b>No science objectives within this project.</b></p>	<p><b>How did Vikings dye their clothes?</b></p> <ul style="list-style-type: none"> <li>Set up simple practical enquires and comparative and fair tests.</li> <li>Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions</li> <li>reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions</li> </ul>	
	<p><b>Burps, Bottoms and Bile</b> (Science)</p>	<p><b>Animals, including humans</b></p> <ul style="list-style-type: none"> <li>Know the functions of the basic parts of the digestive system in humans</li> <li>Know the different types of teeth in humans and their simple functions</li> </ul>	<p><b>What is spit for?</b></p> <ul style="list-style-type: none"> <li>Set up simple practical enquires and comparative and fair tests.</li> <li>reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions</li> </ul>	
<p><b>Year 5</b></p>	<p><b>Beast Creator</b> (Science)</p>	<p><b>Living Things and their habitats</b></p> <ul style="list-style-type: none"> <li>Know the differences in the life cycles of a mammal, an amphibian, an insect and a bird</li> <li>Know the life process of reproduction in</li> </ul>	<p><b>Why do birds lay eggs?</b></p> <ul style="list-style-type: none"> <li>recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs</li> </ul>	<p><b>See Cornerstones Essential Skills Matrix for Year 5</b></p> <p><b>Knowledge and Understanding</b></p> <p><b>Practical</b></p>



		some plants and animals	
	<b>Stargazers</b> (Science)	<b>Earth and space</b> <ul style="list-style-type: none"> <li>▪ Know the movement of the Earth, and other planets, relative to the Sun in the solar system</li> <li>▪ Know the movement of the Moon relative to the Earth</li> <li>▪ Know the Sun, Earth and Moon as approximately spherical bodies</li> <li>▪ Know how day and night occurs and the apparent movement of the sun across the sky.</li> </ul>	<b>How do rockets lift off?</b> <ul style="list-style-type: none"> <li>▪ taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate</li> <li>▪ reporting and presenting 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</li> </ul>
	<b>Pharaohs</b> (History)	<b>Properties and changes of materials (Not in cornerstone unit – stand alone science to be taught)</b> <ul style="list-style-type: none"> <li>▪ 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</li> <li>▪ know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution</li> <li>▪ use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating</li> <li>▪ give reasons, based on evidence from comparative and</li> </ul>	<b>Why does milk go off?</b> <ul style="list-style-type: none"> <li>• planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary</li> <li>• using test results to make predictions to set up further comparative and fair tests</li> </ul>



		<p>fair tests, for the particular uses of everyday materials, including metals, wood and plastic</p> <ul style="list-style-type: none"> <li>▪ demonstrate that dissolving, mixing and changes of state are reversible changes</li> <li>▪ 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.</li> </ul>		
	<p><b>Peasants, Princes and Pestilence</b> (History)</p>	<p><b>Living things and their habitats</b></p> <ul style="list-style-type: none"> <li>▪ Know the life process of reproduction in some plants and animals</li> </ul>	<p><b>How clean are your hands?</b></p> <ul style="list-style-type: none"> <li>▪ reporting and presenting 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</li> <li>▪ identifying scientific evidence that has been used to support or refute ideas or arguments</li> </ul>	
	<p><b>Off with her Head</b> (History)</p>	<p><b>Animals, including Humans</b> (Not in cornerstone unit – standalone science to be taught last 2 weeks)</p> <ul style="list-style-type: none"> <li>▪ Name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood</li> <li>▪ Know the impact of diet, exercise, drugs and lifestyle on the way their bodies function</li> <li>▪ Know the ways in which nutrients and water are</li> </ul>	<p><b>How does blood flow? (Y6)</b></p> <ul style="list-style-type: none"> <li>• using test results to make predictions to set up further comparative and fair tests</li> <li>• reporting and presenting 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</li> </ul>	



		transported within animals, including humans.		
	<b>Scream Machine</b> (Science)	<p><b>Forces</b></p> <ul style="list-style-type: none"> <li>▪ Know that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object</li> <li>▪ Know the effects of air resistance, water resistance and friction, that act between moving surfaces</li> <li>▪ Know that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect</li> </ul>	<p><b>What makes the best parachute?</b></p> <ul style="list-style-type: none"> <li>▪ planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary</li> <li>▪ taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate</li> <li>▪ recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs</li> <li>▪ reporting and presenting 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</li> </ul>	
<b>Year 6</b>	<b>Frozen Kingdom</b> (Geography)	<p><b>Evolution and Living Things</b></p> <ul style="list-style-type: none"> <li>▪ identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.</li> <li>▪ describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including</li> </ul>	<p><b>Can we slow cooling down?</b></p> <ul style="list-style-type: none"> <li>▪ taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate</li> <li>▪ recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs</li> <li>▪ identifying scientific evidence that has been used to support or refute ideas or arguments</li> </ul>	<p><b>See Cornerstones Essential Skills Matrix for Year 6</b></p> <p><b>Knowledge and Understanding</b></p> <p><b>Practical</b></p>

		microorganisms, plants and animals	
	<b>Revolution</b> (History)	<b>Electricity</b> <ul style="list-style-type: none"> <li>▪ associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit</li> <li>▪ 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</li> <li>▪ use recognised symbols when representing a simple circuit in a diagram</li> </ul>	<b>Can fruit light a bulb?</b> <ul style="list-style-type: none"> <li>▪ planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary</li> <li>▪ taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate</li> <li>▪ using test results to make predictions to set up further comparative and fair tests</li> </ul>
	<b>Child's War</b> (History)	<b>Electricity</b> <ul style="list-style-type: none"> <li>▪ 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</li> <li>▪ use recognised symbols when representing a simple circuit diagram</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Can you send a coded message?</b></li> <li>• Plan different types of scientific enquiries to answer questions, including recognising and controlling variable where necessary</li> <li>• Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs</li> </ul>
	<b>Hola Mexico!</b> (History)	<b>Light</b> <ul style="list-style-type: none"> <li>▪ Know that light appears to travel in straight lines</li> <li>▪ Know that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye</li> <li>▪ Know that we see things because light travels from light sources to our eyes</li> </ul>	<b>How does light travel?</b> <ul style="list-style-type: none"> <li>• recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs</li> <li>• identifying scientific evidence that has been used to support or refute ideas or arguments</li> </ul>



		<p>or from light sources to objects and then to our eyes</p> <ul style="list-style-type: none"> <li>Know that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.</li> </ul>		
	<p><b>Darwin's Delights</b> (Science)</p>	<p><b>Living Things and Evolution and Inheritance</b></p> <ul style="list-style-type: none"> <li>give reasons for classifying plants and animals based on specific characteristics.</li> <li>recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago</li> <li>recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents</li> <li>identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.</li> </ul> <p><b>Living Things</b></p> <ul style="list-style-type: none"> <li>give reasons for classifying plants and animals based on specific characteristics.</li> </ul>	<p><b>How have eyed evolved?</b></p> <ul style="list-style-type: none"> <li>recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs</li> <li>identifying scientific evidence that has been used to support or refute ideas or arguments</li> </ul> <p><b>Why are things classified?</b></p> <ul style="list-style-type: none"> <li>recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs</li> <li>identifying scientific evidence that has been used to support or refute ideas or arguments</li> </ul>	

**Additional information**

- What is the purpose of the [essential skills matrix](#) and the [identified knowledge](#) within each ILP? Both documents break down learning by year group or phase. Together they state what pupils are expected to know and be able to do at each stage of their education
- What is [progress](#)? Pupils make progress in the subject by knowing and remembering more. It is about connections and schematics, not isolated information.
- What are [components](#) and [composites](#)? Components are the sub-skills a pupil needs to be successful in a complex task (composite).

- What is the relationship between **knowledge** and **skills**? Both are intertwined - to get better at a subject, both knowledge and skills are required
  - ❖ Knowledge = **know**  
*ingredients – knowledge of vocabulary, events, people, places, ideas, procedure, transferable knowledge*
  
  - ❖ Skills = **know how** *prepared meal*
- What are **schemata**? Schemata (concepts) are interconnected webs of prior knowledge which allow learning of new content
- How can we help pupils retain knowledge in the **long-term memory**? Retrieval practice strengthens memory because you have to recall something you have learnt previously
- How does **dual coding** help pupils learn? Dual coding theory suggests that representing information both visually and verbally enhances learning and retrieval from memory.
- What is **challenge**? Challenge should be considered as meeting curricular goals and ensuring pupils build up the relevant knowledge and skills over time.