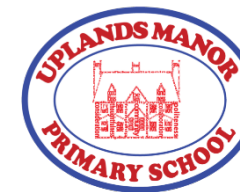


Uplands Manor Primary School – Science long term overview



	Reception	Autumn	Spring	Summer
EYFS curriculum	<p>Area of Learning – Understanding the World</p> <p>Aspect – ‘The Natural World’</p> <p>Knowledge The key facts that children need to know by the end of the unit.</p>	<p>- Our Body <i>Name and locate basic body parts, including – arms, legs, chest, hands, feet, eyes, nose, ears, mouth and hair.</i> <i>Recognise some of the ways in which our bodies have changed since we were born.</i></p> <p>- Our Senses <i>Name the human senses and say which part of the body is associated with each sense.</i> <i>Explore ways to make sound.</i></p> <p>- Weather: Why does the air move? <i>Understand that wind is the movement of large amounts of air.</i></p> <p>- Materials: Which materials act as a mirror? <i>Understand the concept of a reflecting image.</i> <i>Recognise which materials are reflective and not reflective.</i> <i>Understand that reflective materials have smooth surfaces.</i></p> <p>- Seasonal Change: Autumn and Winter <i>Observe change across the four seasons (Autumn and Winter focus).</i> <i>Observe and describe weather associated with the seasons (Autumn and Winter focus).</i></p>	<p>- Rain, ice and water <i>Understand that rain is water falling in drops from clouds in the sky and that ice is frozen water.</i> <i>Understand that a river is a large natural flow of water over land.</i></p> <p>- Weather: Snow and melting <i>Understand that a snowflake is a soft, white piece of frozen water that falls from the sky in cold weather.</i> <i>Understand that melting is when a solid changes to a liquid, when cold objects, such as snowflakes, become warmer.</i> <i>Understand that cold is the opposite of hot and cool is the opposite of warm.</i></p> <p>- Forces: Which objects float/sink? <i>Recognise that if something stays on top of the water, it floats, and if something drops under the water, it sinks.</i> <i>Begin to make links between floating/sinking objects and the material(s) from which they are made.</i></p> <p>- Machines: Different types of transport <i>Name a variety of common transport types (including bicycle, bus, aeroplane, lorry, car and horse) and explain its role.</i></p> <p>- Seasonal Change: Winter and Spring <i>Observe change across the four seasons (Winter and Spring focus).</i> <i>Observe and describe weather associated with the seasons (Winter and Spring focus).</i></p>	<p>- Animals: Insects and invertebrates</p> <p>- Life Cycles: Chickens and eggs <i>Understand that an egg is an oval shaped object laid by a female bird and that eggs hatch, allowing a baby bird to be born.</i> <i>Understand that female chicks grow to become mature chickens.</i></p> <p>- Plants <i>Understand that plants are living things.</i> <i>Use key vocabulary linked to the process of planting a seed and growing a plant (pot, soil, seed, water, sunlight and plant).</i></p> <p>- Our diet and how to stay healthy <i>Understand that our diet is the food we eat and exercise is an activity to keep our bodies feeling fit and full of energy (healthy).</i> <i>Understand that some food types are healthy whilst others are unhealthy.</i></p> <p>- Fruit and vegetables Identify and name common fruit and vegetables. <i>Understand that some fruit and vegetables grow on trees/bushes and some grow underground.</i> <i>Understand that fruit and vegetable consumption is important for maintaining a healthy diet.</i></p> <p>- Seasonal Change: Winter and Spring <i>Observe change across the four seasons (Spring and Summer focus).</i> <i>Observe and describe weather associated with the seasons (Spring and Summer focus).</i></p>

	Year 1	Autumn		Spring	Summer
Knowledge	<p>Knowledge The key facts that children need to know by the end of the unit.</p>	<p>- Animals, Including Humans (Human focus)</p> <p>- Senses Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.</p>	<p>- Everyday Materials <i>Distinguish between an object and the material from which it is made.</i> Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water and rock. <i>Describe the simple physical properties of a variety of everyday materials.</i> <i>Compare and group together a variety of everyday materials on the basis of their simple physical properties.</i></p> <p>- Seasonal Change <i>Observe change across the four seasons (Autumn and Winter focus).</i> <i>Observe and describe weather associated with the seasons and how day length varies (Autumn and Winter focus).</i></p>	<p>- Plants <i>Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees.</i> <i>Identify and describe the basic structure of a variety of common flowering plants, including trees.</i></p> <p>- Seasonal Change <i>Observe change across the four seasons (Winter and Spring focus).</i> <i>Observe and describe weather associated with the seasons and how day length varies (Winter and Spring focus).</i></p>	<p>- Animals, Including Humans (Animal focus) <i>Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals.</i> <i>Identify and name a variety of common that are carnivores, herbivores and omnivores.</i> <i>Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets).</i></p> <p>- Seasonal Change <i>Observe change across the four seasons (Spring and Summer focus).</i> <i>Observe and describe weather associated with the seasons and how day length varies (Spring and Summer focus).</i></p>
Working Scientifically		<p>Use senses to compare different textures, sounds, smells and flavours.</p>	<p>Perform simple tests to explore questions, for example: 'What is the best material for an umbrella?'</p> <p>Make tables or charts about the weather. Make displays of what happens in the world around them, including day length, as the seasons change.</p>	<p>Plant seeds and observe closely, perhaps using magnifying glasses, and comparing and contrasting familiar plants; describing how they were able to identify and group them, and draw diagrams showing the parts of different plants including trees. Keep records of how plants change over time, for example the leaves falling off trees and buds opening.</p> <p>Make tables or charts about the weather. Make displays of what happens in the world around them, including day length, as the seasons change.</p>	<p>Use observations to compare and contrast animals at first hand (Animal Man visitor?) or through videos and photographs, describing how to identify and group them; grouping animals according to what they eat.</p> <p>Make tables or charts about the weather. Make displays of what happens in the world around them, including day length, as the seasons change.</p>

	Year 2	Autumn		Spring	Summer		
Knowledge	Knowledge The key facts that children need to know by the end of the unit.	- Materials <i>Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.</i> <i>Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.</i>	- Living Things <i>Explore and compare the differences between things that are living, dead, and things that have never been alive.</i> <i>Identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other.</i> <i>Identify and name a variety of plants and animals in their habitats, including microhabitats</i> <i>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.</i>	- Animals including humans <i>Notice that animals, including humans, have offspring which grow into adults.</i> <i>Find out about and describe the basic needs of animals, including humans, for survival (water, food and air).</i> <i>Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.</i>	- Plants <i>Observe and describe how seeds and bulbs grow into mature plants. Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.</i>		
	Working Scientifically	Questioning	Explore the world around them	Explore the world around them	Explore the world around them	Explore the world around them	Explore the world around them
Investigating - pattern seeking - sorting & classifying - observing over time/observing closely - research		Use simple features to compare objects and materials and, with help, decide how to sort and group them.	Observe closely using simple equipment with help, ask people questions and use simple secondary sources to find answers.	Ask people questions and use simple secondary sources to find answers with guidance, begin to notice patterns and relationships.	Use simple features to compare plants and, with help, decide how to sort and group them. observe changes over time.		
Testing - comparative testing - fair testing		Carry out simple comparative tests.			Carry out simple comparative tests.		

	Explaining	Talk about what they have found out and how they found it out use their observations and ideas to suggest answers to questions.	Talk about what they have found out and how they found it out use their observations and ideas to suggest answers to questions.	Talk about what they have found out and how they found it out with help, they should record and communicate their findings in a range of ways and begin to use simple scientific language.	Talk about what they have found out and how they found it out with help, they should record and communicate their findings in a range of ways and begin to use simple scientific language.	
	Measuring & Data Handling	Record simple data	Record simple data			Use simple measurements and equipment to gather data
	Year 3	Autumn		Spring		Summer
Knowledge	Knowledge The key facts that children need to know by the end of the unit.	- Rocks <i>Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties.</i> <i>Describe in simple terms how fossils are formed when things that have lived are trapped within rock.</i> <i>Recognise that soils are made from rocks and organic matter.</i>	- Animals <i>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.</i> <i>Identify that humans and some other animals have skeletons and muscles for support, protection and movement.</i>	- Plants <i>Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers.</i> <i>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.</i> <i>Investigate the way in which water is transported within plants.</i> <i>Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.</i>	- Light <i>Recognise that they need light in order to see things and that dark is the absence of light.</i> <i>Notice that light is reflected from surfaces.</i> <i>Recognise that light from the sun can be dangerous and that there are ways to protect their eyes.</i> <i>Recognise that shadows are formed when the light from a light source is blocked by a solid object.</i> <i>Find patterns in the way that the size of shadows change.</i>	- Forces & Magnets <i>Compare how things move on different surfaces.</i> <i>Notice that some forces need contact between two objects, but magnetic forces can act at a distance.</i> <i>Observe how magnets attract or repel each other and attract some materials and not others.</i> <i>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.</i> <i>Describe magnets as having two poles.</i> <i>Predict whether two magnets will attract or repel each other, depending on which poles are facing.</i>
	Questioning	Raise their own relevant questions about the world around them.	Raise their own relevant questions about the world around them.	Raise their own relevant questions about the world around them.	Raise their own relevant questions about the world around them.	Raise their own relevant questions about the world around them.
Working Scientifically	Investigating - pattern seeking - sorting & classifying - observing over time/observing closely - research	Talk about criteria for grouping, sorting and classifying.	Begin to look for naturally occurring patterns and relationships and decide what data to collect to identify them. Recognise when and how secondary sources might help them to answer questions that cannot be	Begin to look for naturally occurring patterns and relationships and decide what data to collect to identify them. Make systematic and careful observations to help make decisions about what observations to make, how	Start to make their own decisions about the most appropriate type of scientific enquiry they might use to answer questions.	Make systematic and careful observations help to make decisions about what observations to make, how long to make them for and the type of simple equipment that might be used.

			answered through practical investigations.	long to make them for and the type of simple equipment that might be used.		
Testing - comparative testing - fair testing	Set up simple practical enquiries and comparative tests.	Set up simple practical enquiries, comparative and fair tests	Set up simple practical enquiries, comparative and fair tests	Set up simple practical enquiries, comparative and fair tests	Set up simple practical enquiries, comparative and fair tests	Set up simple practical enquiries, comparative and fair tests
Explaining	Use relevant simple scientific language to discuss their ideas and communicate their findings in ways that are appropriate for different audiences, including oral and written explanations, or presentations of results and conclusions.	Use relevant simple scientific language to discuss their ideas and communicate their findings in ways that are appropriate for different audiences, including oral and written explanations, or presentations of results and conclusions.	Use relevant simple scientific language to discuss their ideas and communicate their findings in ways that are appropriate for different audiences, including oral and written explanations, displays or presentations of results and conclusions. With help, pupils should look for changes, patterns, similarities and differences in their data in order to draw simple conclusions and answer questions.	Use relevant simple scientific language to discuss their ideas and communicate their findings in ways that are appropriate for different audiences, including oral and written explanations, displays or presentations of results and conclusions. With help, pupils should look for changes, patterns, similarities and differences in their data in order to draw simple conclusions and answer questions.	Use relevant simple scientific language to discuss their ideas and communicate their findings in ways that are appropriate for different audiences, including oral and written explanations, displays or presentations of results and conclusions. With help, pupils should look for changes, patterns, similarities and differences in their data in order to draw simple conclusions and answer questions.	Use relevant simple scientific language to discuss their ideas and communicate their findings in ways that are appropriate for different audiences, including oral and written explanations, displays or presentations of results and conclusions. With help, pupils should look for changes, patterns, similarities and differences in their data in order to draw simple conclusions and answer questions.
Measuring & Data Handling	Collect and record data from their own observations and measurements in a variety of ways: tables, drawings, labelled diagrams.	Take accurate measurements using standard units: cm & m.	Collect and record data from their own observations and measurements in a variety of ways: notes, bar charts and tables, standard units, drawings, labelled diagrams, keys and help to make decisions about how to analyse this data. With support, they should identify new questions arising from the data, making predictions for new values within or beyond the data they have collected and finding ways of improving what they have already done.	Collect and record data from their own observations and measurements in a variety of ways: notes, drawings, labelled diagrams.	Collect and record data from their own observations and measurements in a variety of ways: bar charts and tables, labelled diagrams. With support, they should identify new questions arising from the data.	Collect and record data from their own observations and measurements in a variety of ways: bar charts and tables, labelled diagrams. With support, they should identify new questions arising from the data.

	Year 4	Autumn	Spring		Summer	
Knowledge	<p>Knowledge The key facts that children need to know by the end of the unit.</p>	<p>- Living Things</p> <p><i>Recognise that living things can be grouped in a variety of ways.</i></p> <p><i>Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment.</i></p> <p><i>Recognise that environments can change and that this can sometimes pose dangers to living things.</i></p>	<p>- Changing States</p> <p><i>Compare and group materials together, according to whether they are solids, liquids or gases.</i></p> <p><i>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).</i></p> <p><i>Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.</i></p>	<p>- Electricity</p> <p><i>Identify common appliances that run on electricity.</i></p> <p><i>Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers.</i></p> <p><i>Identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery.</i></p> <p><i>Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit.</i></p> <p><i>Recognise some common conductors and insulators, and associate metals with being good conductors.</i></p>	<p>- Sound</p> <p><i>Identify how sounds are made, associating some of them with something vibrating.</i></p> <p><i>Recognise that vibrations from sounds travel through a medium to the ear.</i></p> <p><i>Find patterns between the pitch of a sound and features of the object that produced it.</i></p> <p><i>Find patterns between the volume of a sound and the strength of the vibrations that produced it.</i></p> <p><i>Recognise that sounds get fainter as the distance from the sound source increases.</i></p>	<p>- Animals</p> <p><i>Describe the simple functions of the basic parts of the digestive system in humans.</i></p> <p><i>Identify the different types of teeth in humans and their simple functions.</i></p> <p><i>Construct and interpret a variety of food chains, identifying producers, predators and prey.</i></p>
Working Scientifically	Questioning	Raise their own relevant questions about the world around them.	Raise their own relevant questions about the world around them.	Raise their own relevant questions about the world around them.	Raise their own relevant questions about the world around them.	Raise their own relevant questions about the world around them.
	<p>Investigating</p> <ul style="list-style-type: none"> - pattern seeking - sorting & classifying - observing over time/observing closely 	Talk about criteria for grouping, sorting and classifying; and use simple keys recognise when and how secondary sources might help them to answer questions that cannot be answered through practical investigations.	Make systematic and careful observations help to make decisions about what observations to make, how long to make them for and the type of simple equipment that might be used.	Talk about criteria for grouping, sorting and classifying; and use simple keys. Recognise when and how secondary sources might help them to answer questions that cannot be answered through practical investigations.	Make systematic and careful observations to help make decisions about what observations to make, how long to make them for and the type of simple equipment that might be used.	Recognise when and how secondary sources might help them to answer questions that cannot be answered through practical investigations. Start to make their own decisions about the most appropriate type of scientific enquiry they might use to answer questions. Talk about criteria for grouping, sorting and classifying; and use simple keys.

	- research					
	Testing - comparative testing - fair testing		Set up simple practical enquiries, comparative and fair tests.	Set up simple practical enquiries, comparative and fair tests. Recognise when a simple fair test is necessary and help to decide how to set it up.	Set up simple practical enquiries, comparative and fair tests. Recognise when a simple fair test is necessary and help to decide how to set it up.	
	Explaining	Use relevant simple scientific language to discuss their ideas and communicate their findings in ways that are appropriate for different audiences, including oral and written explanations, displays or presentations of results and conclusions.	Use relevant simple scientific language to discuss their ideas and communicate their findings in ways that are appropriate for different audiences, including oral and written explanations, or presentations of results and conclusions with help, pupils should look for changes, patterns, similarities and differences in their data in order to draw simple conclusions and answer questions.	Use relevant simple scientific language to discuss their ideas and communicate their findings in ways that are appropriate for different audiences, including oral and written explanations, displays or presentations of results and conclusions.	Use relevant simple scientific language to discuss their ideas and communicate their findings in ways that are appropriate for different audiences, including oral and written explanations, displays or presentations of results and conclusions with help, pupils should look for changes, patterns, similarities and differences in their data in order to draw simple conclusions and answer questions.	Use relevant simple scientific language to discuss their ideas and communicate their findings in ways that are appropriate for different audiences, including oral and written explanations, displays or presentations of results and conclusions.
	Measuring & Data Handling	Collect and record data from their own observations and measurements in a variety of ways: notes, bar charts and tables, standard units, drawings, labelled diagrams, keys and help to make decisions about how to analyse this data.	Collect and record data from their own observations and measurements in a variety of ways: bar charts and tables, standard units, take accurate measurements using standard units: °C.	Collect and record data from their own observations and measurements in a variety of ways: notes, bar charts and tables, standard units, drawings, labelled diagrams, keys and help to make decisions about how to analyse this data.	Collect and record data from their own observations and measurements in a variety of ways: notes, bar charts and tables, standard units, drawings, labelled diagrams, keys and help to make decisions about how to analyse this data.	

	Year 5	Autumn	Spring	Summer		
Knowledge	<p>Knowledge The key facts that children need to know by the end of the unit.</p>	<p>- Materials</p> <p><i>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.</i></p> <p><i>Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution.</i></p> <p><i>Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating.</i></p> <p><i>Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic.</i></p> <p><i>Demonstrate that dissolving, mixing and changes of state are reversible changes.</i></p> <p><i>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.</i></p>	<p>- Earth & Space</p> <p><i>Describe the movement of the Earth, and other planets, relative to the Sun in the solar system.</i></p> <p><i>Describe the movement of the Moon relative to the Earth.</i></p> <p><i>Describe the Sun, Earth and Moon as approximately spherical bodies.</i></p> <p><i>Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.</i></p>	<p>- Forces</p> <p><i>Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.</i></p> <p><i>Identify the effects of air resistance, water resistance and friction, that act between moving surfaces.</i></p> <p><i>Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.</i></p>	<p>- Living Things</p> <p><i>Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird.</i></p> <p><i>Describe the life process of reproduction in some plants and animals.</i></p>	<p>- Animals</p> <p><i>Describe the changes as humans develop to old age.</i></p>
Working Scientifically	Questioning	Use their science experiences to explore ideas and raise different kinds of questions.	Use their science experiences to explore ideas and raise different kinds of questions.	Use their science experiences to explore ideas and raise different kinds of questions.	Use their science experiences to explore ideas and raise different kinds of questions.	Use their science experiences to explore ideas and raise different kinds of questions.
	<p>Investigating</p> <ul style="list-style-type: none"> - pattern seeking - sorting & classifying - observing over time/observing closely - research 	<p>Use and develop keys and other information records to identify, classify and describe living things and materials, and identify patterns that might be found in the natural environment.</p> <p>Look for different causal relationships in their data and identify evidence that refutes or supports their ideas.</p> <p>Select and plan the most appropriate type of scientific enquiry to use to answer specific questions.</p>	<p>Recognise which secondary sources will be most useful to research their ideas and begin to separate opinion from fact.</p>	<p>Make their own decisions about what observations to make, what measurements to use and how long to make them for.</p>	<p>Use and develop keys and other information records to identify, classify and describe living things and materials, and identify patterns that might be found in the natural environment.</p> <p>Recognise which secondary sources will be most useful to research their ideas and begin to separate patterns that might be found in the</p>	<p>Research the gestation periods of other animals, comparing them with humans; by finding out and recording the length and mass of a baby as it grows.</p>

					<p>natural environment.</p> <p>Make their own decisions about what observations to make, what measurements to use and how long to make them for. Look for different causal relationships in their data and identify evidence that refutes or supports their ideas. Select and plan the most appropriate type of scientific enquiry to use to answer.</p>	
<p>Testing</p> <p>- comparative testing</p> <p>- fair testing</p>	<p>Recognise when and how to set up comparative and fair tests and explain which variables need to be controlled and why.</p>			<p>Recognise when and how to set up comparative and fair tests and explain which variables need to be controlled and why.</p>		
<p>Explaining</p>	<p>Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas. Use oral and written forms such as displays and other presentations to report conclusions, causal relationships and explanations of degree of trust in results.</p> <p>Identify scientific evidence that has been used to support or refute ideas or arguments.</p>	<p>Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas.</p> <p>Use oral and written forms such as displays and other presentations to report conclusions, causal relationships and explanations of degree of trust in results.</p> <p>Identify scientific evidence that has been used to support or refute ideas or arguments.</p>	<p>Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas.</p> <p>Use oral and written forms such as displays and other presentations to report conclusions, causal relationships and explanations of degree of trust in results.</p> <p>Identify scientific evidence that has been used to support or refute ideas or arguments.</p>	<p>Talk about how scientific ideas have developed over time.</p>	<p>Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas.</p>	<p>Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas. Use oral and written forms such as displays and other presentations to report conclusions, causal relationships and explanations of degree of trust in results. Identify scientific evidence that has been used to support or refute ideas or arguments.</p>
<p>Measuring & Data Handling</p>	<p>Decide how to record data and results of increasing complexity from a choice of familiar approaches: scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.</p> <p>Use their results to make predictions and identify when further observations, comparative and fair tests might be needed.</p>			<p>Decide how to record data and results of increasing complexity from a choice of familiar approaches: scientific diagrams and labels, classification keys,</p>	<p>Choose the most appropriate equipment to make measurements with increasing precision and explain how to use it accurately.</p>	<p>Research the gestation periods of other animals, comparing them with humans; by finding out and recording the length and mass of a baby as it grows.</p>

				tables, scatter graphs, bar and line graphs. Use their results to make predictions and identify when further observations, comparative and fair tests might be needed.	Take repeat measurements where appropriate.	
	Year 6	Autumn		Spring	Summer	
Knowledge	Knowledge The key facts that children need to know by the end of the unit.	- Light <i>Recognise that light appears to travel in straight lines. Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye. Explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes. Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.</i>	- Electricity <i>Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit. Compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches. Use recognised symbols when representing a simple circuit in a diagram.</i>	- Living Things <i>Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals. Give reasons for classifying plants and animals based on specific characteristics.</i>	- Animals <i>Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood. Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function. Describe the ways in which nutrients and water are transported within animals, including humans.</i>	- Evolution & Inheritance <i>Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago. Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents. Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.</i>
Working Scientifically	Questioning	Use their science experiences to explore ideas and raise different kinds of questions.	Use their science experiences to explore ideas and raise different kinds of questions.	Use their science experiences to explore ideas and raise different kinds of questions.	Use their science experiences to explore ideas and raise different kinds of questions.	Use their science experiences to explore ideas and raise different kinds of questions.
	Investigating - pattern seeking - sorting & classifying	Look for different causal relationships in their data and identify evidence that refutes or supports their ideas.	Make their own decisions about what observations to make, what measurements to use and how long to make them for.	Use and develop keys and other information records to identify, classify and describe living things and materials, and identify patterns that might be found in the natural environment. Look for different causal relationships in their data and identify evidence that refutes or supports their ideas.	Use and develop keys and other information records to identify, classify and describe living things and materials, and identify patterns that	look for different causal relationships in their data and identify evidence that refutes or supports their ideas recognise which secondary sources will be most useful to

<p>- observing over time/observing closely</p> <p>- research</p>		<p>Recognise which secondary sources will be most useful to research their ideas and begin to separate opinion from fact</p>	<p>Recognise which secondary sources will be most useful to research their ideas and begin to separate opinion from fact.</p>	<p>might be found in the natural environment. Look for different causal relationships in their data and identify evidence that refutes or supports their ideas. Recognise which secondary sources will be most useful to research their ideas and begin to separate opinion from fact. Select and plan the most appropriate type of scientific enquiry to use to answer scientific questions.</p>	<p>Research their ideas and begin to separate opinion from fact.</p>
<p>Testing</p> <p>- comparative testing</p> <p>- fair testing</p>	<p>Recognise when and how to set up comparative and fair tests and explain which variables need to be controlled and why.</p>	<p>Recognise when and how to set up comparative and fair tests and explain which variables need to be controlled and why.</p>		<p>Recognise when and how to set up comparative and fair tests and explain which variables need to be controlled and why.</p>	
<p>Explaining</p>	<p>Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas. Talk about how scientific ideas have developed over time.</p>	<p>Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas. Use oral and written forms such as displays and other presentations to report conclusions, causal relationships and explanations of degree of trust in results. Identify scientific evidence that has been used to support or refute ideas or arguments.</p>	<p>Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas.</p>	<p>Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas. Use oral and written forms such as displays and other presentations to report conclusions, causal relationships and explanations of degree of trust in results. Identify scientific evidence that has been used to support or refute ideas or arguments.</p>	<p>Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas. Talk about how scientific ideas have developed over time.</p>
<p>Measuring & Data Handling</p>	<p>Decide how to record data and results of increasing complexity from a choice of familiar approaches: scientific diagrams and labels, classification keys,</p>	<p>Use their results to make predictions and identify when further observations, comparative and fair tests might be needed.</p>	<p>Choose the most appropriate equipment to make measurements with increasing precision and explain how to use it accurately. Take repeat measurements where appropriate.</p>	<p>Decide how to record data and results of increasing complexity from a choice of familiar approaches: scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.</p>	<p>Decide how to record data and results of increasing complexity from a choice of familiar approaches: scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.</p>

		<i>tables, scatter graphs, bar and line graphs.</i>				
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