

## --Overview of Scientific Learning at Chorley St Marys Catholic Primary and Nursery

<b>Science Substantive Key Knowledge and Concepts:</b>							
<b>Biology</b>		<b>Chemistry</b>		<b>Physics</b>		<b>Earth Science</b>	
Living things and their environment (Animals, humans, plants, habitat)	Reproduction, inheritance and evolution (Evolution, inheritance, life processes, life cycles)	States of matter (Solids, liquids, gases)	Materials (properties and changes including reversible/ir reversible changes,)	Energy (Light, sound, electricity)	Forces (Friction, air resistance, gravity, magnets)	Earth and space (Seasons, day and night, solar system and beyond)	Rocks and fossils
<b>Science Disciplinary Key Knowledge:</b>							
<b><u>Scientific Enquiry</u></b>							
Observing over time	Identifying and classifying		Looking for patterns		Comparative and fair testing	Answering questions using secondary sources of evidence	
<b><u>Working Scientifically</u></b>							
Making predictions	Asking questions	Observation and measurement	Recording	Interpreting and presenting results	Setting up test	Evaluating	

**Nursery**

	<b><u>Components</u></b>	<b><u>Substantive Concepts and Knowledge</u></b>	<b><u>Development Matters/ Early Learning Goals</u></b>	<b><u>Working Scientifically opportunities</u></b>	<b><u>Key vocabulary</u></b>
<b><u>AT1</u></b>	<p><b><u>Traditional Tales</u></b></p> <ol style="list-style-type: none"> <li>1. I can offer explanations for why things might happen.</li> <li>2. I can understand some important processes and changes in the natural world around me.</li> <li>3. I can offer explanations for why things might happen, making use of recently introduced vocabulary from stories when appropriate.</li> </ol>	Physics and Chemistry	<p>Offer explanations for why things might happen, making use of recently introduced vocabulary from stories.</p> <p>Understand some important processes and changes in the natural world around them, drawing on their experiences of what has been read in class.</p> <p>Offer explanations for why things might happen, making use of recently introduced vocabulary from stories when appropriate.</p>	<p>Identifying and classifying</p> <p>Comparative and fair testing</p>	Wet, dry, absorption, liquid, float, sink, waterproof, wind, blow, strong, hard, light, heavy, material.
<b><u>AT2</u></b>	<p><b><u>Celebrations</u></b></p> <ol style="list-style-type: none"> <li>1. Explore the natural world around them, making observations and drawing pictures of animals and plants.</li> <li>2. Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.</li> </ol>	Biology	<p>I can explore the world around me, making observations of colour.</p> <p>I can participate in discussions and offer my own ideas using scientific words.</p> <p>I understand some important processes and changes in the world,</p>	<p>Identifying and classifying</p> <p>Pattern seeking</p> <p>Observing over time</p> <p>Comparative and fair testing</p>	Spider, Halloween, head, body, fangs, legs, eyes. Creepy crawlies, Christmas, snow, units, chocolate, cold, freezing, melting, soft.

	<p>3. Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.</p> <p>4. Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter</p> <p>5. Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.</p> <p>6. Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.</p>		including colour and how they change by mixing.		
<p><b><u>Sp1 and 2</u></b></p>	<p><u>People who help us</u></p> <p>1. I can manage my own hygiene and understand the importance of healthy food choices.</p> <p>2. I can manage my own hygiene and understand the importance of healthy food choices.</p>	Biology	<p>Manage their own basic hygiene and personal needs, including dressing, going to the toilet and understanding the importance of healthy food choices.</p> <p>Understand some important processes and</p>	<p>Observing over time</p> <p>Identifying and classifying</p> <p>Looking for patterns</p>	<p>People, dentist, firefighter, police officer, teacher, teeth, health, safe, safety, 999, emergency, emergency services, hygiene, rot, infection</p>

	<ol style="list-style-type: none"> <li>3. I can manage my own hygiene and understand the importance of healthy food choices.</li> <li>4. I can talk about the lives of the people around them and their roles in society.</li> <li>5. I can talk about the lives of the people around them and their roles in society.</li> <li>6. I can talk about the lives of the people around them and their roles in society.</li> </ol>		<p>changes in the natural world around them, including the seasons and changing states of matter.</p> <p>Talk about the lives of the people around them and their roles in society.</p>		
<p><b><u>Sum 1 and 2</u></b></p>	<p><b><u>Keeping Healthy</u></b></p> <ol style="list-style-type: none"> <li>1. I can show sensitivity to my own and other's needs.</li> <li>2. I can manage my own basic hygiene needs.</li> <li>3. I can manage my own basic personal needs</li> <li>4. how sensitivity to their own and to others' needs.</li> </ol>		<p>I can manage my own basic hygiene and personal needs, including dressing, going to the toilet and understanding the importance of healthy food choices.</p> <p>Show sensitivity to their own and to others' needs.</p>	<p>Observing over time</p> <p>Pattern seeking</p> <p>Identifying and classifying</p>	<p>Healthy, food, body, mind, environment, hygienic, germs, bacteria, dentist, teeth, exercise, diet, vegetables, dairy, fat, dairy, carbohydrates, doctor heartbeat, sleep, emotion, worries, happy, sad, scared, angry, worried, excited.</p>

**Reception**

	<u>Components</u>	<u>Substantive Concepts and Knowledge</u>	<u>Development Matters/ Early Learn Goals</u>	<u>Working Scientifically opportunities</u>	<u>Key vocabulary</u>
<b>AT1</b>	<p><u>All about me</u></p> <ol style="list-style-type: none"> <li>1. Explore the world around me, making observations and drawing pictures of myself and others.</li> <li>2. Know similarities and different between the natural world around me.</li> <li>3. Work and play cooperatively and take turns with others.</li> </ol>	Biology	<p>Explore the world around them, making observations and drawing pictures of themselves and others.</p> <p>Know similarities and differences between the natural world around them</p> <p>Work and play cooperatively and take turns with others.</p>	<p><u>Identifying and classifying</u> Identify parts of the body.</p> <p><u>Pattern Seeking</u> Looking for patterns in different stages of growth.</p>	Head, nose, ears, neck, leg, knee, foot, toes, arm, hands, fingers, chest, tummy. Baby, toddler, teenager, adult, elderly. Sight, sound, taste, smell, touch.
<b>AT2</b>	<p><u>Seasons</u></p> <ol style="list-style-type: none"> <li>1. Explore the natural world around them, making observations and drawing pictures of animals and plants.</li> <li>2. Understand some important processes and changes in the natural world around them, including seasonal changes.</li> <li>3. Describe their immediate environment using knowledge from observation, discussion and stories.</li> </ol>	Earth Science	<p>I can explore the world around me, making observations of colour.</p> <p>I can participate in discussions and offer my own ideas using scientific words.</p> <p>I understand some important processes and changes in the world, including colour and how they change by mixing.</p>	<p><u>Identifying and classifying</u> Identify seasons and classifying things into the correct season</p> <p><u>Observing over time</u></p>	Summer, autumn, winter, spring, gripped, dew, trees, wise, shiver, bowers, shimmering, scamper, chill, blossom, melting, flit, cold, frosty, windy.

	<p>4. Explore the natural world around them, making observations and drawing pictures of animals and plants.</p> <p>5. Know the similarities and differences between the natural world around drawing on experiences of what has been read in class.</p> <p>6. Understand some important processes and changes in the natural world around them, including seasonal changes.</p>				
<p><b>SpT1</b></p>	<p><u>Animals</u></p> <p>1. I can understand the similarities and differences of animals in this country and in other countries.</p> <p>2. I can recognise some environments that are different to the one in which they live.</p> <p>3. I can understand the effect of changing seasons on the natural world.</p> <p>4. I can engage in non-fiction books.</p> <p>5. I can revise and refine my fundamental movement skills.</p>	<p><u>Biology</u></p>	<p><u>DM LINKS:</u></p> <p>I can understand the similarities and differences of <i>animals</i> in this country and in other countries.</p> <p>I can recognise some environments that are different to the one in which they live.</p> <p>I can understand the effect of changing seasons on the natural world.</p> <p>I can engage in non-fiction books.</p>	<p><u>Identifying and classifying</u></p> <p>Identify where animals may live in the world.</p> <p><u>Pattern seeking</u></p> <p>Noticing similarities and differences within the seasons.</p> <p>Look for patterns between an animals and its environment.</p> <p><u>Observing over time</u></p> <p><u>Answering questions using secondary sources of evidence</u></p>	<p>Animal, seasons, hibernation, habitat, warm, cold, rest, fat, movement, Earth, live, weather, food, shelter.</p>

<p><b>Spring 2</b></p>	<p><u>Science week</u> <u>Oceans</u></p> <ol style="list-style-type: none"> <li>1. I can explore the natural world around me.</li> <li>2. I can understand some important changes in the natural world.</li> <li>3. I can explore the natural world and make observations.</li> <li>4. I can explore changing states</li> <li>5. I can discuss how pollution is changing the world and what I can do about it</li> </ol>	<p>Working scientifically</p>	<p>Explore the natural work around them, making observations and drawing pictures of animals and plants.</p> <p>Understand some important processes and changes in the natural world around them, including... and changing states of matter.</p> <p>Make comments about what they have heard and ask questions to clarify their understanding.</p> <p>Participate in small group, class and one-to-one discussions, offering their own ideas, using recently introduced vocabulary.</p> <p>Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class.</p>	<p>Explore the natural work around them, making observations and drawing pictures of animals and plants.</p> <p>Understand some important processes and changes in the natural world around them, including... and changing states of matter.</p> <p>Make comments about what they have heard and ask questions to clarify their understanding.</p> <p>Participate in small group, class and one-to-one discussions, offering their own ideas, using recently introduced vocabulary.</p> <p>Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class.</p>	<p>Ocean, climate, weather, Earth, Pacific, Arctic, Indian, Atlantic, Southern, pollution, floating, sinking, food chain,</p>
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<b>SumT1 and 2</b>	<u>Minibeasts and Growing</u> 1. can understand important changes and processes in the natural world. 2. I can explore the natural world around me. 3. I can explore the natural world around me 4. I can use my observations and skills to make a model. 5. I can notice changes in the natural world. 6. I can explore a variety of materials, tools and techniques to make a bug habitat.	Biology	I can understand important changes and processes in the natural world. - I can explore the natural world around me. - Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.	<u>Identifying and classifying</u> Identify the stages of a caterpillar  <u>Observing over time</u>  <u>Answering questions using secondary sources of evidence</u>	Minibeast, insect, habitat, diet, caterpillar, butterfly, growing, chrysalis, larvae, segmented, legs, invertebrate, exoskeleton, food, life cycle,

Year 1

	<u>Components</u>	<u>Substantiv e Concepts and Knowledge</u>	<u>Disciplinary Knowledge</u>	<u>NC Objectives</u>	<u>Working Scientifically Objections</u>	<u>Key vocabulary</u>
<u>Over the year</u>	<p align="center"><u>Seasonal changes</u></p> <p>1. I can observe the changes across four seasons. (To be completed at the start of the Year)</p> <p>2. I can observe the changes across four seasons. Today's focus = Autumn (To be completed in autumn)</p> <p>3. I can observe the changes across four seasons. Today's focus = Winter (To be completed in Winter)</p> <p>4. I can observe the changes across four seasons. Today's focus = Spring (To be completed in Spring)</p> <p>5. . I can observe the changes across four seasons. Today's focus = Summer (To be completed in Summer)</p> <p>6. I can observe and describe weather associated with the seasons and how day length varies.</p>	Earth Science	<p>Observing over time</p> <p>Identifying and classifying</p> <p>Comparative and fair testing</p> <p>Answering questions using secondary sources of evidence</p>	<p>I can observe changes across four seasons.</p> <p>I can observe and describe weather associated with the seasons and how day length varies.</p>	<p>Asking simple questions and recognising that they can be answered in different ways</p> <p>Observing closely, using simple equipment</p> <p>Performing simple tests</p> <p>Identifying and classifying</p> <p>Using their observations and ideas to suggest answers to questions</p> <p>Gathering and recording data to help in answering questions.</p>	Weather (sunny, rainy, windy, snowy etc) Seasons (winter, summer, spring, autumn) sun, sunrise, sunset, Day length

<p><b>AT1</b></p>	<p>Animals including humans</p> <ol style="list-style-type: none"> <li>1. I can identify, name, draw and label basic parts of the human body and say which part of the body is associated with each sense.</li> <li>2. I can identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.</li> <li>3. I can identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.</li> <li>4. I can identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals.</li> <li>5. I can describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets).</li> <li>6. I can identify and name a variety of common animals that are carnivores, herbivores and omnivores.</li> </ol>	<p>Biology</p>	<p>Observing over time</p> <p>Identifying and classifying</p> <p>Comparative and fair testing</p> <p>Answering questions using secondary sources of evidence</p>	<p>I can identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals</p> <p>I can identify and name a variety of common animals that are carnivores, herbivores and omnivores.</p> <p>I can describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets)</p> <p>I can 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>Asking simple questions and recognising that they can be answered in different ways</p> <p>Observing closely, using simple equipment</p> <p>Performing simple tests</p> <p>Identifying and classifying</p> <p>Using their observations and ideas to suggest answers to questions</p> <p>Gathering and recording data to help in answering questions.</p>	<p>Head, body, eyes, ears, mouth, teeth, leg, tail, wing, claw, fin, scales, feathers, fur, beak, paws, hooves, reptile, amphibian, mammal, omnivore, carnivore, herbivore, all senses.</p>
<p><b>AT2</b></p>	<p>Animals including humans (Ext unit)</p>	<p>As above</p>	<p>As above</p>	<p>As above</p>	<p>As above</p>	<p>As above</p>

	<p>7. I can identify, name, draw and label basic parts of the human body and say which part of the body is associated with each sense.</p> <p>8. I can 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>9. I can identify and name a variety of common animals such as minibeasts.</p> <p>10. I can identify and name a variety of common animals such as birds.</p> <p>11. I can identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals.</p> <p>12. I can apply my learning about animals including humans.</p>					
<p><b>SpT1</b></p>	<p><b>Materials</b></p> <p>1. I can distinguish between an object and the material from which it is made.</p> <p>2. I can identify and name a variety of everyday materials including wood, plastic, glass, metal, water and rock.</p> <p>3. I can describe the simple properties of a</p>	<p>Chemistry</p>	<p>Identifying and classifying Looking for patterns Comparative and fair testing</p>	<p>I can distinguish between an object and the material from which it is made.</p> <p>I can identify and name a variety of everyday materials including wood, plastic, glass, metal, water and rock.</p>	<p>Asking simple questions and recognising that they can be answered in different ways</p> <p>Observing closely, using simple equipment</p> <p>Performing simple tests</p> <p>Identifying and classifying</p>	<p>Object, material, wood, plastic, glass, metal, water, rock, brick, paper, fabric, elastic, foil, card/cardboard, rubber, wool, clay, hard, soft, stretchy, stiff, bendy, floppy, waterproof, absorbent, breaks/tears, rough, smooth, shiny, dull, see through, not see through.</p>

	<p>variety of everyday materials.</p> <p>4. I can compare and group together a variety of everyday materials on the basis of their simple properties.</p> <p>5. I can compare and group together a variety of everyday materials on the basis of their simple properties.</p> <p>6. I can compare and group together a variety of everyday materials on the basis of their simple properties.</p>			<p>I can describe the simple properties of a variety of everyday materials.</p> <p>I can compare and group together a variety of everyday materials on the basis of their simple properties.</p>	<p>Using their observations and ideas to suggest answers to questions</p> <p>Gathering and recording data to help in answering questions.</p>	
<b>SpT2</b>	<p>Science week</p> <p>1. I can record changes in natural materials over time.</p> <p>2. I can predict how a material will change when heated.</p> <p>3. I can communicate the results of a test.</p> <p>4. I can set up a test and observe it over time.</p> <p>5. I can evaluate a test and say what I would do differently.</p>	Working Scientifically focus	<p>Observing over time</p> <p>Comparative and fair testing</p>	<p>I can record changes in natural materials over time.</p> <p>I can predict how a material will change when heated.</p> <p>I can communicate the results of a test.</p> <p>I can set up a test and observe it over time.</p> <p>I can evaluate a test and say what I would do differently.</p>	<p>I can use drawings to record changes over time.</p> <p>I can predict what will happen to materials when they are heated.</p> <p>I can create a poster to show what I have found out.</p> <p>I can change a variable in a test.</p> <p>I can evaluate a test.</p>	<p>Observation, time, seconds, minutes, hours, clock, stopwatch, melting, thermometer, heart, heartrate, pulse, exercise, variable.</p>

<b>SumT1</b>	<p style="text-align: center;">Materials (Ex unit)</p> <p>7. I can describe the simple properties of a variety of everyday materials.</p> <p>8. I can compare and group together a variety of everyday materials on the basis of their simple properties.</p> <p>9. I can describe the simple properties of a variety of everyday materials.</p> <p>10. I can compare and group together a variety of everyday materials on the basis of their simple properties.</p> <p>11. I can identify and name a variety of everyday materials including wood, plastic, glass, metal, water and rock.</p> <p>12. I can distinguish between an object and the material from which it is made.</p>	<p style="text-align: center;">See materials above</p>	<p style="text-align: center;">See materials above</p>	<p style="text-align: center;">See materials above</p>	<p style="text-align: center;">See materials above</p>	<p style="text-align: center;">See materials above</p>
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<p><b>SumT2</b></p>	<p style="text-align: center;"><b>Plants</b></p> <ol style="list-style-type: none"> <li>1. To identify and describe the basic structure of a variety of common flowering plants including trees.</li> <li>2. To identify and describe the basic structure of a variety of common flowering plants including trees.</li> <li>3. To identify and describe the basic structure of a variety of common flowering plants including trees.</li> <li>4. To identify and describe the basic structure of a variety of common flowering plants including trees.</li> <li>5. To identify and name a variety of common wild and garden plants including deciduous and evergreen trees.</li> <li>6. To identify and name a variety of common wild and garden plants including deciduous and evergreen trees.</li> </ol>	<p style="text-align: center;"><b>Biology</b></p>	<p style="text-align: center;"><b>Answering questions using secondary sources of evidence</b></p> <p style="text-align: center;"><b>Observing over time</b></p> <p style="text-align: center;"><b>Identifying and classifying</b></p>	<p>To identify and describe the basic structure of a variety of common flowering plants including trees.</p> <p>To identify and name a variety of common wild and garden plants including deciduous and evergreen trees.</p>	<p>Asking simple questions and recognising that they can be answered in different ways</p> <p>Observing closely, using simple equipment</p> <p>Performing simple tests</p> <p>Identifying and classifying</p> <p>Using their observations and ideas to suggest answers to questions</p> <p>Gathering and recording data to help in answering questions.</p>	<p>Leaf, flower, blossom, petal, fruit, berry, root, seed, trunk, branch, stem, bark, stalk, bud.</p> <p>Names of trees in local area, garden and wild flowering plants.</p>
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Year 2

	<u>Components</u>	<u>Substantive Concepts</u>	<u>Disciplinary Concepts</u>	<u>NC objectives</u>	<u>Working Scientifically objectives</u>	<u>Key Vocabulary</u>
<b>AT1</b>	<p><u>Living things and their habitats</u></p> <p>1. I can explore the differences between things that are living, dead and things that have never been alive.</p> <p>2. Identify most living things live in habitats to which they are suited and describe how different habitats provide for basic needs of different kinds of animals and plants and how the depend on each other.</p> <p>3. I can identify most living things live in habitats to which they are suited and describe how different habitats provide for basic needs of different kinds of animals and plants and how the depend on each other.</p> <p>4. Identify and name a variety of plants and animals in their habitat, including microhabitats.</p> <p>5. Identify most living things live in habitats to which they are suited and describe how different habitats provide for basic needs of different kinds of animals and plants</p>	Biology	<p>Identifying and classifying</p> <p>Answering questions using secondary sources of information</p> <p>Looking for patterns</p>	<p>Explore and compare the differences between things that are living, dead and things that have never been alive</p> <p>Identify most living things live in habitats to which they are suited and describe how different habitats provide for basic needs of different kinds of animals and plants and how the depend on each other.</p> <p>Identify and name a variety of plants and animals in their habitat, including microhabitats.</p> <p>Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain</p>	<p>Asking simple questions and recognising that they can be answered in different ways</p> <p>Observing closely, using simple equipment</p> <p>Performing simple tests</p> <p>Identifying and classifying</p> <p>Using their observations and ideas to suggest answers to questions</p> <p>Gathering and recording data to help in answering questions.</p>	<p>Living, dead, never been alive, suited, suitable, basic need, food, food chain, shelter, move, feed, names of local habitats e.g. pond, woodland, names of micro habitats e.g. under logs, in bushes etc.</p>

	<p>and how they depend on each other.</p> <p>6. 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.</p>			<p>and identify and name different sources of food.</p>		
<b>AT2</b>	<p><b>Materials</b></p> <p>1. I can identify and compare the suitability of different materials.</p> <p>2. I can identify and name a variety of everyday materials including wood, plastic, glass, metal, water and rock.</p> <p>3. I can find out how the shape of solid objects made from materials can be changed by squashing, bending, twisting and stretching.</p> <p>4. To identify and compare the suitability of a variety of everyday materials including wood, metal, plastic, glass, brick, rock, paper, cardboard for particular uses.</p> <p>5. I can compare and group together a variety of everyday materials on the basis of their simple properties.</p> <p>6. I can compare and group together a variety of everyday materials on the basis of their simple properties.</p>	<b>Chemistry</b>	<p>Identifying and classifying.</p> <p>Comparative and fair testing</p> <p>Looking for patterns</p>	<p>Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.</p> <p>Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.</p>	<p>Asking simple questions and recognising that they can be answered in different ways</p> <p>Observing closely, using simple equipment</p> <p>Performing simple tests</p> <p>Identifying and classifying</p> <p>Using their observations and ideas to suggest answers to questions</p> <p>Gathering and recording data to help in answering questions.</p>	<p>Names of materials: wood, plastic, glass, metal, water, rock, brick, paper, fabric, card, rubber, suitable/unsuitable, use/useful, hard/soft, stretchy/stiff. Rigid/flexible, waterproof/absorbent, strong/weak, rough/smooth, transparent/opaque, shape, push/pushing, pull/pulling, twist/twisting, squash/squashing, bend/bending, stretch/stretching.</p>

<p><b>SpT1</b></p>	<p>Animals including humans (Ext Unit to be taught across the whole spring term.</p> <p>1. I notice that animals including humans have offspring which grow into adults.</p> <p>2. I notice that animals including humans have offspring which grow into adults.</p> <p>3. I can find out about and describe the basic needs of animals including humans for survival.</p> <p>4. I can find out about and describe the basic needs of animals including humans for survival.</p> <p>5. I can describe the importance for humans of exercise, eating the right amounts if different types of food and hygiene.</p> <p>6. I can describe the importance for humans of exercise, eating the right amounts if different types of food and hygiene.</p> <p>7. I can describe the importance for humans of exercise, eating the right amounts if different types of food and hygiene.</p> <p>8. I can describe the importance for humans of exercise, eating the right</p>	<p>Biology</p>	<p>Looking for patterns</p> <p>Observing over time</p> <p>Answering questions using secondary sources of evidence.</p> <p>Identifying and classifying.</p> <p>Comparative and fair testing.</p>	<p>I notice that animals including humans have offspring which grow into adults.</p> <p>I can find out about and describe the basic needs of animals including humans for survival.</p> <p>Describe the importance for humans of exercise, eating the right amounts of different types of food and hygiene.</p> <p>Describe the importance for humans of exercise, eating the right amounts of different types of food and hygiene.</p>	<p>Asking simple questions and recognising that they can be answered in different ways</p> <p>Observing closely, using simple equipment</p> <p>Performing simple tests</p> <p>Identifying and classifying</p> <p>Using their observations and ideas to suggest answers to questions</p> <p>Gathering and recording data to help in answering questions.</p>	<p>Offspring, grow, adults, nutrition, reproduce, survival, water, food, air, exercise, hygiene, survival, exercise.</p>
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	<p>amounts if different types of food and hygiene.</p> <p>9/10. I can describe the importance for humans of exercise, eating the right amounts if different types of food and hygiene.</p> <p>11. I can describe the importance for humans of exercise, eating the right amounts if different types of food and hygiene.</p> <p>12. I can apply my knowledge of the unit and complete a knowledge test.</p>					
<p><b>SpT2</b></p>	<p>Science week</p> <p>1. I can set up a simple test and record the data gathered from it.</p> <p>2. I can investigate different materials and how their properties and how they can be used.</p> <p>3. I can find out the suitability of materials based on a simple test and record my results.</p> <p>4. I can use what I have found out about materials to create with a purpose.</p> <p>5. I can evaluate my use of materials.</p>	<p>Working scientifically focus</p>	<p>Comparative and fair testing</p> <p>Pattern seeking</p> <p>Answering questions using secondary sources of evidence.</p>	<p>I can set up a simple test and record the data gathered from it.</p> <p>I can investigate different materials and their properties and how they can be used.</p> <p>To find out the suitability of materials based on a simple test and record my results.</p> <p>I can use what I have found out about materials to create with a purpose.</p> <p>I can evaluate my use of materials.</p>	<p>I can record data in a table.</p> <p>I can ask questions about the suitability of materials for a purpose.</p> <p>I can record data in a table.</p> <p>I can use what I have found out about materials to create a marble run.</p> <p>I can evaluate my use of materials.</p>	<p>Time, materials, seconds, minutes, watch, stopwatch, timer, testing, travel, speed, fast, faster, fastest, slow, slower, slowest, measuring, designing.</p>

<p><b>SumT1</b></p>	<p>Plants (highlighted are the lessons that must be covered)</p> <p>1. To observe and describe how seeds and bulbs grow into mature plants.</p> <p>2. I can observe and describe how seeds and bulbs grow into mature plants.</p> <p>3. I can observe and describe how seeds and bulbs grow into mature plants.</p> <p>4. I can observe and describe how seeds and bulbs grow into mature plants.</p> <p>5. I can observe and describe how seeds and bulbs grow into mature plants.</p> <p>6. I can observe and describe how seeds and bulbs grow into mature plants.</p>	<p>Biology</p>	<p>Identifying and classifying</p> <p>Observing over time</p> <p>Comparative and fair testing.</p> <p>Looking for patterns.</p> <p>Answering questions using secondary sources of evidence</p>	<p>To observe and describe how seeds and bulbs grow into mature plants.</p> <p>Find and describe how plants need water, light and a suitable temperature to grow and stay healthy.</p>	<p>Asking simple questions and recognising that they can be answered in different ways</p> <p>Observing closely, using simple equipment</p> <p>Performing simple tests</p> <p>Identifying and classifying</p> <p>Using their observations and ideas to suggest answers to questions</p> <p>Gathering and recording data to help in answering questions.</p>	<p>Leaf, flower, blossom, bud, petal, berry, root, seed, stalk, trunk, branch, stem, bark, fruit, light, shade, sun, warm, cool, water, grow, healthy, germinate, climate, nutrients.</p>
<p><b>SumT2</b></p>	<p>Plants (Ext Unit)</p> <p>7. I can observe and describe how seeds and bulbs grow into mature plants.</p> <p>8. I can find and describe how plants need water, light and a suitable temperature to grow and stay healthy.</p> <p>9. I can find and describe how plants need water, light and a suitable temperature to grow and stay healthy.</p> <p>10. I can find and describe how plants need water, light and a suitable temperature to grow and stay healthy.</p>	<p>See above</p>	<p>See above</p>	<p>See above</p>	<p>See above</p>	<p>See above</p>

	<p>11. I can find and describe how plants need water, light and a suitable temperature to grow and stay healthy.</p> <p>12. I can find and describe how plants need water, light and a suitable temperature to grow and stay healthy.</p>					
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Year 3						
	<u>Components</u>	<u>Substantive Concepts</u>	<u>Disciplinary Concepts</u>	<u>NC objectives</u>	<u>Working Scientifically objectives</u>	<u>Key vocabulary</u>
<u>AT1</u>	<p>Rocks</p> <p>1. I can compare and group together different kinds of rocks based on their appearance and simple physical properties.</p> <p>2. I can compare and group together different kinds of rocks based on their appearance and simple physical properties.</p> <p>3. I can compare and group together different kinds of rocks based on their appearance and simple physical properties.</p> <p>4. To describe in simple terms how fossils are formed when things that have lived are trapped within rock.</p> <p>5. To recognise that soils are made from rock and organic matter.</p> <p>6. To recognise that soils are made from</p>	Earth science	<p>Identifying and classifying</p> <p>Answering questions using secondary sources of information</p> <p>Observing over time</p>	<p>To compare and group together different kinds of rocks on the basis of their appearance and simple physical properties.</p> <p>To describe in simple terms how fossils are formed when things that have lived are trapped within rock.</p> <p>To recognise that soils are made from rock and organic matter.</p>	<p>Ask relevant questions and use different scientific enquiries.</p> <p>Make systematic and careful observations, take accurate measurements using standard units, use a range of equipment.</p> <p>Gather, record, classify and present data in a variety of ways to help in answering questions.</p> <p>Record findings using simple scientific language, drawings, labelled diagrams, bar charts and tables.</p> <p>Report on findings from enquiries including oral and written explanations.</p> <p>Use results to draw simple conclusions, suggest improvements and raise further questions.</p> <p>Identify similarities and differences.</p>	<p>Rock, stone, pebble, boulder, grain, crystals, layers, hard, soft, texture, absorb, water, soil, fossil, marble, chalk, granite, sandstone, slate, soil, peat, sandy/chalk/clay soil.</p>

	rock and organic matter.				Use straightforward scientific evidence to answer questions or to support their findings.	
<b>AT2</b>	<p>Light</p> <p>1. To recognise that we need light in order to see things and that dark is the absence of light.</p> <p>2. I understand that light is reflected Light from surfaces</p> <p>3. To recognise that light from the sun can be dangerous and that there are ways to protect your eyes.</p> <p>4. To recognise that shadows are formed when the light source is blocked by a solid object.</p> <p>5. To find patterns in the way the size of the shadows change.</p> <p>6. To recognise we need light in order to see things and that dark is the absence of light.</p>	Physics	<p>Looking for patterns</p> <p>Observing over time</p> <p>Comparative and fair testing</p>	<p>To recognise we need light in order to see things and that dark is the absence of light</p> <p>Light is reflected from surfaces</p> <p>Recognise that light from the sun can be dangerous and that there are ways to protect your eyes.</p> <p>Recognise that shadows are formed when light from a source is blocked by an opaque object.</p> <p>Find patterns in the way that the shadows change.</p>	<p>Asking relevant questions and using different types of scientific enquiry to answer them.</p> <p>Setting up simple practical enquiries, comparative, and fair tests.</p> <p>Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers.</p> <p>Gathering, recording, classifying, and presenting data in a variety of ways to help in answering questions.</p> <p>Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables.</p> <p>Report on findings from enquiries, including oral and written explanations,</p>	<p>Light, light source, dark, absence of light, transparent, translucent, opaque, shiny, matt, surface, shadow, reflect, mirror, sunlight, dangerous.</p>

					<p>displays or presentations of results and conclusions.</p> <p>Using results to draw simple conclusions, make predictions for new values, suggest improvements, and raise further questions.</p> <p>Identify differences, similarities or changes related to simple scientific ideas and processes.</p> <p>Use straightforward scientific evidence to answer questions or to support their findings.</p>	
<b>SpT1</b>	<p>Forces and Magnets</p> <p>1. I notice that some forces need contact between two objects.</p> <p>2. I can compare how things move on different surfaces.</p> <p>3. Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet and identify some magnetic materials..</p>	Physics	<p>Identifying and classifying</p> <p>Answering questions using secondary sources of evidence</p> <p>Comparative and fair testing</p> <p>Looking for patterns</p>	<p>Compare how things move on different surfaces.</p> <p>Notice that some forces need contact between two objects, but magnetic forces can act at a distance.</p> <p>Observe how magnets attract or repel each other and attract some materials and not others.</p>	<p>Ask relevant questions and use different scientific enquiries.</p> <p>Make systematic and careful observations, take accurate measurements using standard units, use a range of equipment.</p> <p>Gather, record, classify and present data in a variety of ways to help in answering questions.</p> <p>Record findings using simple scientific language, drawings, labelled</p>	<p>Force, push, pull, twist, contact force, non-contact force, magnetic force, magnet, strength, bar magnet, ring magnet, button magnet, horseshoe magnet, attract, repel. Magnetic material, metal, iron, steel, poles, north pole, south pole.</p>

	<p>4. I notice that some forces need contact between two objects, but magnetic forces can act at a distance.</p> <p>5. I can describe magnets as having two poles. Predict whether two magnets will attract or repel each other, depending on which poles are facing.</p> <p>6. I can describe magnets as having two poles. Predict whether two magnets will attract or repel each other, depending on which poles are facing.</p>			<p>Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet and identify some magnetic materials.</p> <p>Describe magnets as having two poles. Predict whether two magnets will attract or repel each other, depending on which poles are facing.</p>	<p>diagrams, bar charts and tables.</p> <p>Report on findings from enquiries including oral and written explanations.</p> <p>Use results to draw simple conclusions, suggest improvements and raise further questions.</p> <p>Identify similarities and differences.</p> <p>Use straightforward scientific evidence to answer questions or to support their findings.</p>	
<p><b>SpT2</b></p>	<p>Science Week</p> <p>1. I can identify the suitability of materials for a purpose.</p> <p>2. I know some forces need contact between two objects.</p> <p>3. I can use my knowledge of forces to explain how a sailboat functions.</p>	<p>Working Scientifically</p>	<p>Pattern seeking</p>	<p>I can identify the suitability of materials for a purpose.</p> <p>I know some forces need contact between two objects.</p> <p>I can use my knowledge of forces to explain how a sailboat functions.</p>	<p>I can record observations on a table</p> <p>I can use my observation skills to notice the effects of different forces.</p> <p>I can use explain the forces needed to make a sailboat function.</p> <p>I can use explain the forces needed to make a paddleboat function.</p>	<p>Time, boat, sailing, rowboat, paddle boat, sail boat, buoyancy, water resistance, gravity, floating, sinking, materials, force, propulsion, keel.</p>

	<p>4. I can use my knowledge of forces to explain how a paddle boat functions.</p> <p>5. I can create a boat that uses a propeller.</p>			<p>I can use my knowledge of forces to explain how a paddle boat functions.</p> <p>I can create a boat that uses a propeller.</p>	<p>I can evaluate my boat and changes I've made to improve it.</p>	
<b>SumT1</b>	<p>Animals including humans (Alternative unit)</p> <p>1. I can identify that humans and some other animals have skeletons and muscles for support, protection and movement.</p> <p>2. I can identify that humans and some other animals have skeletons and muscles for support, protection and movement.</p> <p>3. I can identify that humans and some other animals have skeletons and muscles for support, protection and movement.</p> <p>4. I can identify that humans and some other animals have skeletons and muscles for</p>	Biology	<p>Answering questions using secondary sources of information</p> <p>Identifying and classifying</p> <p>Pattern seeking</p>	<p>I can identify that humans and some other animals have skeletons and muscles for support, protection and movement.</p> <p>I can 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.</p>	<p>Ask relevant questions and use different scientific enquiries.</p> <p>Make systematic and careful observations, take accurate measurements using standard units, use a range of equipment.</p> <p>Gather, record, classify and present data in a variety of ways to help in answering questions.</p> <p>Record findings using simple scientific language, drawings, labelled diagrams, bar charts and tables.</p> <p>Report on findings from enquiries including oral and written explanations.</p> <p>Use results to draw simple conclusions, suggest improvements and raise further questions.</p>	<p>Nutrition, nutrients, carbohydrates, sugars, protein, vitamins, minerals, fibre, fat, water, skeleton, bones, muscles, support, protect, skull, ribs, spine, muscles, joints.</p>

	<p>support, protection and movement.</p> <p>5. I can 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.</p> <p>6. I can identify that humans and some other animals have skeletons and muscles for support, protection and movement.</p>				<p>Identify similarities and differences.</p> <p>Use straightforward scientific evidence to answer questions or to support their findings.</p>	
<b>SumT2</b>	<p>Plants</p> <p>1. I can identify and describe the functions of different parts of a flowering plant.</p> <p>2. I can explore the requirements of plant life and growth.</p> <p>3. I can investigate the way in which water is transported within plants</p> <p>4. I can explore the part that flowers play in the lifecycle</p>	Biology	<p>Identifying and classifying</p> <p>Comparative and fair testing</p> <p>Observing over time</p> <p>Answering questions using secondary sources of evidence</p> <p>Pattern seeking</p>	<p>I can identify and describe the functions of different parts of a flowering plant.</p> <p>I can explore the requirements of plant life and growth.</p> <p>I can investigate the way in which water is transported within plants</p> <p>I can explore the part that flowers</p>	<p>Ask relevant questions and use different scientific enquiries.</p> <p>Make systematic and careful observations, take accurate measurements using standard units, use a range of equipment.</p> <p>Gather, record, classify and present data in a variety of ways to help in answering questions.</p> <p>Record findings using simple scientific language, drawings, labelled</p>	<p>Photosynthesis, pollen, insect/wind pollination, seed formation, seed dispersal- wind dispersal, animal dispersal, water dispersal, pollen, roots, stem, trunk, leaves, absorb, nutrients, reproduce, germination, stamen, style.</p>

	<p>of flowering plants including pollination, seed formation and seed dispersal.</p> <p>5. I can explore the part that flowers play in the lifecycle of flowering plants including pollination, seed formation and seed dispersal.</p> <p>6. I can explore the part that flowers play in the lifecycle of flowering plants including pollination, seed formation and seed dispersal.</p>			<p>play in the lifecycle of flowering plants including pollination, seed formation and seed dispersal.</p>	<p>diagrams, bar charts and tables.</p> <p>Report on findings from enquiries including oral and written explanations.</p> <p>Use results to draw simple conclusions, suggest improvements and raise further questions.</p> <p>Identify similarities and differences.</p> <p>Use straightforward scientific evidence to answer questions or to support their findings.</p>	
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Year 4						
	<u>Components</u>	<u>Substantive Concepts</u>	<u>Disciplinary Concepts</u>	<u>NC objectives</u>	<u>Working Scientifically objectives</u>	<u>Key vocabulary</u>
<u>AT1</u>	<p>Electricity</p> <p>1. I can identify common appliances that run on electricity.</p> <p>2. I can 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.</p> <p>3. I can recognise some common conductors and insulators, and associate metals with being good conductors.</p> <p>4. I can recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit</p> <p>5. I can construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs,</p>	Physics	<p>Identifying and classifying</p> <p>Pattern seeking</p> <p>Comparative and fair testing</p> <p>Answering questions using secondary sources of information</p>	<p>I can identify common appliances that run on electricity</p> <p>I can construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers</p> <p>I can 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</p> <p>I can recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit</p> <p>I can recognise some common conductors</p>	<p>Ask relevant questions.</p> <p>Make careful observations and use a range of equipment.</p> <p>Gather, record and classify data.</p> <p>Record findings using scientific language, drawings, labelled diagrams.</p> <p>Identify similarities and differences.</p> <p>Use straightforward scientific evidence to answer questions to support findings.</p>	<p>Electrical, appliance, mains, plug, circuit, component, cell, battery, positive, negative, connect/connectors, loose connection, short circuit, crocodile clip, bulb, switch, buzzer, motor, conductor, insulator, metal, non-metal, symbol, voltage, current.</p>

	<p>switches and buzzers.</p> <p>6. I can construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers.</p>			<p>and insulators, and associate metals with being good conductors.</p>		
<b>AT2</b>	<p>Sound</p> <p>1. To identify how sounds are made, associating some of them with something vibrating.</p> <p>2. Recognise that vibrations from sounds travel through a medium to the ear.</p> <p>- Recognise that sounds get fainter as the distance from the sound source increases.</p> <p>3. Find patterns between pitch and volume of a sound and features of the object that produced it.</p> <p>4. Recognise that sound gets fainter as the distance from the sound source increases.</p>	Physics	<p>Identifying and classifying</p> <p>Comparative and fair testing</p> <p>Pattern seeking</p>	<p>To identify how sounds are made, associating some of them with something vibrating. (Vibration stations)</p> <p>Recognise that vibrations from sounds travel through a medium to the ear. (String phones)</p> <p>Find patterns between pitch of a sound and features of the object that produced it.</p> <p>Find patterns between the volume of a sound and the strength of the vibrations that produced it.</p>	<p>Ask relevant questions.</p> <p>Make careful observations and use a range of equipment.</p> <p>Gather, record and classify data.</p> <p>Record findings using scientific language, drawings, labelled diagrams.</p> <p>Identify similarities and differences.</p> <p>Use straightforward scientific evidence to answer questions to support findings.</p>	<p>Sound, source, vibrate, vibration, travel, pitch, volume, faint, loud, insulation.</p>

	<p>5. I can find patterns between pitch and volume of a sound and the features of the object that produced it.</p> <p>6. To identify how sounds are made, associating some of them with something vibrating.</p>			<p>Recognise that sound gets fainter as the distance from the sound source increases</p>		
<p><b>SpT1</b></p>	<p>States of matter</p> <p>1. I can compare and group materials together according to their properties solid, liquid and gas.</p> <p>2. I can compare and group materials together according to their properties solid, liquid and gas.</p> <p>3. I know that some materials change shape when they are heated or cooled.</p> <p>4. I know that some materials change shape when they are heated or cooled.</p> <p>5. I can identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.</p>	<p>Chemistry</p>	<p>Identifying and classifying</p> <p>Pattern seeking</p> <p>Comparative and fair testing</p> <p>Observing over time</p>	<p>Compare and group materials together, according to whether they are solids, liquids or gases</p> <p>Observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius</p> <p>Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.</p>	<p>Ask relevant questions.</p> <p>Make careful observations and use a range of equipment.</p> <p>Gather, record and classify data.</p> <p>Record findings using scientific language, drawings, labelled diagrams.</p> <p>Identify similarities and differences.</p> <p>Use straightforward scientific evidence to answer questions to support findings.</p>	<p>Solid, liquid, gas, state, change, melting, freezing, melting point, boiling point, evaporation, temperature, water cycle, matter, air, oxygen, ice, water, water vapor, steam, heated, heat, cooled, cool, temperature, degrees Celsius, melt, melting point, freeze, freezing point, solidify, boil, boiling point, evaporate, evaporation, condense, condensation, precipitation, infiltration.</p>

	6. I can identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.					
<b>SpT2</b>	<p>Science week</p> <p>1. I can research how different materials effect ice.</p> <p>2. I can set up a fair test</p> <p>3. I can evaluate my test to improve my de-icer.</p> <p>4. I can evaluate and present my findings.</p> <p>5. I can conduct and examine results.</p>	Working scientifically	<p>Answering questions using secondary sources of information</p> <p>Comparative and fair testing</p>	<p>I can research how different materials effect ice.</p> <p>I can set up a fair test.</p> <p>I can evaluate my test to improve my de-icer.</p> <p>I can evaluate and present my findings.</p> <p>I can conduct research and examine results.</p>	<p>I can make careful observations.</p> <p>I can set up a test to answer a question.</p> <p>I can evaluate my test.</p> <p>I can interpret others results to improve my product.</p>	Ice, cold, melting, temperature, freezing, melting, variable, material, test, fair test, comparative test.
<b>SumT1</b>	<p>Animals including humans</p> <p>1. I can describe the simple functions of the digestive system in humans.</p> <p>2. I can identify different teeth in humans and name their functions.</p> <p>3. I know how to keep my teeth healthy.</p>	Biology	<p>Identifying and classifying</p> <p>Comparative and fair testing</p> <p>Answering questions using secondary sources of information</p>	<p>I can describe the simple functions of the digestive system in humans.</p> <p>I can identify different teeth in humans and name their functions.</p> <p>I know how to keep my teeth healthy</p>	<p>Ask relevant questions.</p> <p>Make careful observations and use a range of equipment.</p> <p>Gather, record and classify data.</p> <p>Record findings using scientific language,</p>	<p>Digestive system, digestion, mouth, teeth, saliva, oesophagus, stomach, small intestine, nutrients, large intestine, rectum, anus, incisor, canine, herbivore, omnivore.</p>

	<p>4. I can identify and compare teeth of carnivores, herbivores and omnivores.</p> <p>5. I can construct and interpret a variety of food chains identifying producers, predators and prey by examining animal faeces (poo).</p> <p>6. I can construct and interpret a variety of food chains identifying producers, predators and prey.</p> <p>7. I can identify animal habitats in the locality and observe what they eat.</p>		<p>Pattern seeking</p>	<p>I can identify and compare teeth of carnivores, herbivores and omnivores.</p> <p>I can construct and interpret a variety of food chains identifying producers, predators and prey by examining animal faeces (poo)</p> <p>I can identify animal habitats in the locality and observe what they eat</p>	<p>drawings, labelled diagrams.</p> <p>Identify similarities and differences.</p> <p>Use straightforward scientific evidence to answer questions to support findings.</p> <p>Interpret models to demonstrate how things work.</p> <p>Record findings using labelled diagrams</p>	
<p><b>SumT2</b></p>	<p>Living things</p> <p>1. I can group living things in a variety of ways.</p> <p>2. I can explore and use classification keys to help group.</p> <p>3.. I can identify and name a variety of living things in the environment.</p> <p>4. I can identify and name a variety of living things in the environment and I</p>	<p>Biology</p>	<p>Identifying and classifying</p> <p>Pattern seeking</p> <p>Answering questions using secondary sources of evidence</p>	<p>Recognise that living things can be grouped in a variety of ways.</p> <p>Explore and use classification keys to help group.</p> <p>Identify and name a variety of living things in the environment.</p>	<p>Ask relevant questions.</p> <p>Make careful observations and use a range of equipment.</p> <p>Gather, record and classify data.</p> <p>Record findings using scientific language, drawings, labelled diagrams.</p>	<p>Classification, classification keys, environment, habitat, human impact, positive, negative, migrate, hibernate, fish, amphibian, reptile, bird, mammal, vertebrate, invertebrate, shelter, food, protection.</p>

	<p>can explore classification keys further.</p> <p>5. I recognise that environments can change, and this can sometimes pose changes to living things.</p> <p>6. I recognise that environments can change and this can sometimes pose changes to living things.</p>			<p>Recognise that environments can change and this can sometimes pose dangers to living things.</p>	<p>Identify similarities and differences.</p> <p>Use straightforward scientific evidence to answer questions to support findings.</p>	
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**Year 5**

	<u>Components</u>	<u>Substantive Concepts</u>	<u>Disciplinary Concepts</u>	<u>NC objectives</u>	<u>Working Scientifically objectives</u>	<u>Key vocabulary</u>
<b><u>AT1</u></b>	<p>Forces</p> <p>1. I can explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.</p> <p>2. I can explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.</p> <p>3. I can identify the effects of air resistance, water resistance and friction, that act between moving surfaces.</p> <p>4. I can identify the effects of air resistance, water resistance and friction, that act between moving surfaces.</p> <p>5. I can identify the effects of air</p>	<p>Physics</p>	<p>Answering questions using secondary sources of evidence</p> <p>Observing over time</p> <p>Comparative and fair testing</p> <p>Looking for patterns</p>	<p>Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object. (<i>The act of gravity on our lives</i>)</p> <p>Identify the effects of air resistance, water resistance and friction, which act between moving surfaces.</p> <p>Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.</p>	<p>Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary (Lessons 2,4 and 6)</p> <p>Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate (Lesson 1)</p> <p>Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs (Lesson 5)</p> <p>Using test results to make predictions to set up further comparative and fair tests (Lesson 6)</p> <p>Reporting and presenting findings from enquiries, including</p>	<p>Force, Gravity, Earth, air resistance, water resistance, friction, mechanisms, simple machines, levers, pulleys, gears, Newton, up thrust, opposing, streamline, brake, cog, weight, mass.</p>

	<p>resistance, water resistance and friction, that act between moving surfaces.</p> <p>6. I know that some mechanisms, including levers, pulleys and gears allow a smaller force to have a great effect.</p>				<p>conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations (Lesson 3)</p> <p>Identifying scientific evidence that has been used to support or refute ideas or arguments. (Lesson 1/3)</p>	
<b><u>AuT2</u></b>	<p>Properties of materials</p> <p>1. Compare and group together everyday materials based on their properties, including hardness, solubility, transparency, conductivity and response to magnets.</p> <p>2. Know that some materials will dissolve in liquid to form a solution and describe how to recover a substance from a solution.</p> <p>3. Use knowledge of solid, liquid and gas to decide how mixtures might be separated including through</p>	Chemistry	<p>Identifying and classifying</p> <p>Observing over time</p> <p>Comparative and fair testing</p> <p>Pattern seeking</p>	<p>Compare and group together everyday materials based on their properties, including hardness, solubility, transparency, conductivity and response to magnets.</p> <p>Know that some materials will dissolve in liquid to form a solution and describe how to recover a substance from a solution.</p> <p>Use knowledge of solid, liquid and gas to decide how mixtures might be</p>	<p>Evaluate different aspects of their enquiries such as equipment and accuracy of measurements.</p> <p>Make predictions about which materials are soluble or insoluble.</p> <p>Use scientific language and illustrations to discuss, communicate and justify scientific ideas.</p> <p>Make careful observations when heating solutions.</p> <p>Plan own investigation to test how materials react with each other.</p>	<p>Thermal/electrical insulator/conductor, change of state, mixture, dissolve, solution, soluble, insoluble, filter, sieve, reversible/not reversible, change, burning, rusting, new material.</p>

	<p>filtering, sieving and evaporation.</p> <p>4. Demonstrate that dissolving, mixing and changes of state are reversible changes.</p> <p>5. Explain that some changes result in the formation of new materials and this kind of change is not usually reversible including changes associated with burning and the action of acid on bicarbonate of soda.</p> <p>6. Give reasons based on evidence from comparative tests for the particular uses of everyday materials including metals, wood and plastic.</p>			<p>separated including through filtering, sieving and evaporation.</p> <p>Give reasons based on evidence from comparative tests for the particular uses of everyday materials including metals, wood and plastic.</p> <p>Demonstrate that dissolving, mixing and changes of state are reversible changes.</p> <p>Explain that some changes result in the formation of new materials and this kind of change is not usually reversible including changes associated with burning and the action of acid on bicarbonate of soda.</p>	<p>Record my results in a table.</p>	
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<p><b>SpT1</b></p>	<p>Space</p> <ol style="list-style-type: none"> <li>1. Describe the movement of the Earth and other planets, relative to the sun in the solar system.</li> <li>2. Describe the movement of the Earth and other planets, relative to the sun in the solar system.</li> <li>3. Describe the movement of the moon relative to the Earth.</li> <li>4. Describe the Sun, Earth and Moon as approximate spherical bodies.</li> <li>5. To use the Earth's rotation to explain day and night due to the apparent movement of the sun across the sky.</li> <li>6. Describe the movement of the moon relative to the Earth.</li> </ol> <p>WS: I can plan my own fair test and control variables.</p>	<p>Earth science</p>	<p>Identifying and classifying</p> <p>Observing over time</p> <p>Answering questions using secondary sources of evidence</p> <p>Pattern seeking</p> <p>Comparative and fair testing</p>	<p>Describe the movement of the Earth and other planets, relative to the sun in the solar system.</p> <p>Describe the movement of the moon relative to the Earth.</p> <p>Describe the Sun, Earth and Moon as approximate spherical bodies.</p> <p>Use Earth rotation to explain day and night due to the apparent movement of the sun across the sky.</p>	<p>Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.</p> <p>Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.</p> <p>Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.</p> <p>Using test results to make predictions to set up further comparative and fair tests</p> <p>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</p>	<p>Earth, sun, moon, Mercury, Jupiter, Saturn, Venus, Mars, Uranus, Neptune, Pluto (dwarf planet), spherical, solar system, rotates, star, orbit, planets, axis, night, day, season, galaxy. Meteorite, celestial.</p>
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					displays and other presentations.	
<b>SpT2</b>	<p>Science week</p> <ol style="list-style-type: none"> <li>1. I can use research to explore the history of time.</li> <li>2. I can create an accurate water timer.</li> <li>3. I can create a sundial and explore how they work.</li> <li>4. I can explain how different time zones operate.</li> <li>5. I can create an accurate sand timer.</li> </ol>	Working scientifically	<p>Answering questions using secondary sources of information</p> <p>Pattern seeking</p> <p>Observing changes over time</p>	<p>I can use research to explore the history of time.</p> <p>I can create an accurate water timer.</p> <p>I can create a sundial and explore how they work.</p> <p>I can explain how different time zones operate.</p> <p>I can create an accurate sand timer.</p>	<p>I can record data from a simple experiment.</p> <p>I can make observations and take measurements.</p> <p>I can communicate what I have found out from my research.</p> <p>I can make observations and take measurements.</p>	<p>Time, seconds, minutes, hours, days, timer, stopwatch, recording, Earth, Sun, sundial, light, shadow, time zone, clock, sand, salt.</p>
<b>Sum1</b>	<p>Living things and their habitats</p> <ol style="list-style-type: none"> <li>1. I can describe the differences in life cycles of a mammal, an amphibian, an insect and a bird.</li> <li>2. I can describe the differences in life cycles of a mammal, an</li> </ol>	Biology	<p>Pattern seeking</p> <p>Identifying and classifying</p> <p>Answering questions using secondary sources of evidence</p>	<p>Describe the differences in life cycles of a mammal, an amphibian, an insect and a bird</p> <p>Describe the life process of reproduction in</p>	<p>Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary</p> <p>Taking measurements, using a range of scientific equipment,</p>	<p>life cycle, live, young, fertilises, egg, runners, reproduce, sperm, metamorphosis gestation, cuttings, plantlets, bulb, sexual/asexual reproduction</p>

	<p>amphibian, an insect and a bird.</p> <p>3. Describe the life process of reproduction in some plants and animals.</p> <p>4. I can describe the life process of reproduction in some plants and animals.</p> <p>5. I can describe the life process of reproduction in some plants and animals.</p> <p>6. I can describe the life process of reproduction in some plants and animals</p>		<p>Comparative and fair testing</p> <p>Pattern seeking</p>	<p>some plants and animals</p>	<p>with increasing accuracy and precision, taking repeat readings when appropriate</p> <p>Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs</p> <p>Using test results to make predictions to set up further comparative and fair tests</p> <p>Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations</p> <p>Identifying scientific evidence that has been used to support or refute ideas or arguments</p>	
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<p><b>Sum 2</b></p>	<p>Animals including humans</p> <ol style="list-style-type: none"> <li>1. Describe the changes as humans develop from birth to old age.</li> <li>2. Describe the changes as humans develop from birth to old age.</li> <li>3. Describe the changes as humans develop from birth to old age.</li> <li>4. I can describe the changes as humans develop to old age. (Skip this as it is covered in Journey in Love?)</li> <li>5. I can describe the changes as humans develop to old age.</li> <li>6. I can describe the changes as humans develop to old age</li> </ol>	<p>Biology</p>	<p>Pattern seeking</p> <p>Answering questions using secondary sources of evidence</p>	<p>Describe the changes as humans develop from birth to old age.</p>	<p>Ask relevant questions.</p> <p>Make careful observations and use a range of equipment.</p> <p>Gather, record and classify data.</p> <p>Record findings using scientific language, drawings, labelled diagrams.</p> <p>Identify similarities and differences.</p> <p>Use straightforward scientific evidence to answer questions to support findings.</p>	<p>Adolescent, adult, asexual reproduction, sexual reproduction, fertilization, death, teenager, elderly, toddler, reproduction, foetus, growth, puberty, menstrual cycle, gestation.</p>
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Year 6

	<u>Components</u>	<u>Substantive Concepts</u>	<u>Disciplinary Concepts</u>	<u>NC objectives</u>	<u>Working Scientifically objectives</u>	<u>Key vocabulary</u>
<u>AT1</u>	<p>Animals including humans</p> <p>1. I can identify the main parts of the human circulatory system and describe the function of the heart, blood vessels and blood.</p> <p>2. I can identify the main parts of the human circulatory system and describe the function of the heart, blood vessels and blood.</p> <p>3. I can identify the main parts of the human circulatory system and describe the function of the heart, blood vessels and blood.</p> <p>4. Describe the ways in which nutrients and water and transported within animals including humans.</p> <p>5. I can recognise the impact of diet, exercise, drugs and</p>	Biology	<p>Identifying and classifying</p> <p>Answering questions using secondary sources of evidence</p> <p>Comparative and fair testing</p>	<p>I can identify the main parts of the human circulatory system and describe the function of the heart, blood vessels and blood.</p> <p>I can describe the ways in which nutrients and water and transported within animals including humans.</p> <p>I can recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function.</p>	<p>Evaluate different aspects of their enquiries such as equipment and accuracy of measurements.</p> <p>Make predictions about which materials are soluble or insoluble.</p> <p>Use scientific language and illustrations to discuss, communicate and justify scientific ideas.</p> <p>Make careful observations when heating solutions.</p> <p>Plan own investigation to test how materials react with each other.</p> <p>Record my results in a table.</p>	<p>Heart, pulse, rate, pumps, blood, blood vessel, transported, lungs, oxygen, carbon dioxide, nutrients, water, muscles, cycle, circulatory system, diet, exercise, drugs, lifestyle.</p>

	lifestyle on the way their bodies function. 6. Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function.					
<b>AT2</b>	<p>Evolution and inheritance</p> <p>1. I understand that fossils provide information about living things that inhabited the Earth millions of years ago.</p> <p>2. To recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents.</p> <p>3. I recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents.</p> <p>4. To identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.</p>	Biology	<p>Answering questions using secondary sources of research</p> <p>Pattern seeking</p> <p>Identifying and classifying</p>	<p>Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago</p> <p>Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents</p> <p>Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.</p>	<p>Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.</p> <p>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.</p> <p>Identifying scientific evidence that has been used to support or refute ideas or arguments</p>	<p>Offspring, sexual reproduction, vary, variation, characteristics, suited, adapted, environment, inherited, species, fossils, adaptation, acquired characteristic, inherited characteristic, gene, natural selection, artificial selection.</p>

	<p>5. To identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.</p> <p>6. I can recognise that normally offspring vary and are not identical to their parents inheritance.</p>					
<p><b>SpT1</b></p>	<p>Electricity</p> <p>1. I can compare and give reasons for variations in how components function</p> <p>2. . To use recognised symbols when representing a simple circuit in a diagram.</p> <p>3. To compare and give reasons for variations in how components function</p> <p>4. . To associate the volume of a buzzer with the number and voltage of cells used in the circuit.</p> <p>5. To design and construct simple electric circuits for a purpose.</p> <p>6. To use and understand recognised symbols</p>	<p>Physics</p>	<p>Identifying and classifying</p> <p>Pattern seeking</p> <p>Comparative and fair testing</p> <p>Answering questions using secondary sources of information</p>	<p>To 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.</p> <p>To associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit.</p> <p>To use recognised symbols when representing a simple circuit in a diagram.</p>	<p>Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.</p> <p>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.</p> <p>Identifying scientific evidence that has been used to support or</p>	<p>Circuit, complete circuit, circuit diagram, circuit symbol, cell, battery, bulb, buzzer, motor, switch, voltage.</p>

	when representing a simple circuit in a diagram.				refute ideas or arguments.  Answer questions by investigating.  Make predictions using own ideas and subject knowledge.	
<b>SpT2</b>	<p>Science week</p> <ol style="list-style-type: none"> <li>1. I can look for patterns to order developments in technology.</li> <li>2. I can create a communications device using a circuit.</li> <li>3. I can create and adjust a circuit to create a desired effect.</li> <li>4. I can create a working vacuum cleaner.</li> <li>5. I can think ahead how technology will change the future.</li> </ol>	Working scientifically	<p>Pattern seeking</p> <p>Answering questions using secondary sources of evidence</p>	<p>I can look for patterns to order developments in technology.</p> <p>I can create a communications device using a circuit.</p> <p>I can create and adjust a circuit to create a desired effect.</p> <p>I can create a working vacuum cleaner.</p> <p>I can think ahead how technology will change the future.</p>	<p>I can communicate information I have found out through my observations.</p> <p>I can use my observation skills to create and decode messages.</p> <p>I can use Observation skills to test how well my fan operates.</p> <p>I can evaluate and communicate my results.</p> <p>I can communicate my ideas.</p>	<p>Technology, developments, change, advancements, vacuum, motor, wire, circuit, simple circuit, complete circuit, switch, morse code, electricity, communication, future.</p>

<p><b>Sum1</b></p>	<p>Light</p> <p>1. I recognise that light appears to travel in straight lines.</p> <p>2. 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.</p> <p>3. 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</p> <p>4. Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.</p> <p>5. 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.</p> <p>6. Use the idea that light travels in straight lines to explain that objects</p>	<p>Physics</p>	<p>Pattern seeking</p> <p>Answering questions using secondary sources of evidence</p> <p>Identifying and classifying</p> <p>Comparative and fair testing</p>	<p>Recognise that light appears to travel in straight lines.</p> <p>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</p> <p>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</p> <p>Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them</p>	<p>Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary</p> <p>Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate</p> <p>Recording data and results of increasing complexity using scientific diagrams and labels.</p> <p>Use test results to make predictions to set up further comparative and fair tests</p> <p>Report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as</p>	<p>Light, light source, dark, absence of light, transparent, translucent, opaque, shiny, matt, surface, shadow, reflect, mirror, sunlight, dangerous, refraction, medium, dense.</p>
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	<p>are seen because they give out or reflect light into the eye</p>				<p>displays and other presentations</p> <p>Identify scientific evidence that has been used to support or refute ideas or arguments.</p>	
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<p><b>Sum2</b></p>	<p>Living things and their habitats</p> <p>1. 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.</p> <p>2. 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</p> <p>3. Give reasons for classifying plants and animals based on specific characteristics.</p> <p>4. Give reasons for classifying plants and animals based on specific characteristics.</p> <p>5. Describe how living things are classified into broad groups according to common observable</p>	<p>Biology</p>	<p>Identifying and classifying</p> <p>Answering questions using secondary sources of evidence</p> <p>Observing over time</p> <p>Pattern seeking</p>	<p>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</p> <p>Give reasons for classifying plants and animals based on specific characteristics.</p>	<p>Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary</p> <p>Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate</p> <p>Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs</p> <p>Using test results to make predictions to set up further comparative and fair tests</p> <p>Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in</p>	<p>Vertebrates, fish, amphibians, reptiles, birds, mammals, invertebrates, insects, spiders, snails, worms, flowering and non-flowering.</p>
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	<p>characteristics and based on similarities and differences including micro-organisms, plants and animals.</p> <p>6. 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.</p>				<p>results, in oral and written forms such as displays and other presentations</p> <p>Identifying scientific evidence that has been used to support or refute ideas or arguments</p>	
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