



# Science

## Intent

We aim to give all children a strong understanding of the world around them whilst acquiring specific skills and knowledge to help them to think scientifically, to gain an understanding of scientific processes and also an understanding of the uses and implications of science, today and for the future.

Scientific enquiry skills are embedded in each topic the children study and these topics are revisited and developed throughout their time at school. Topics, such as Plants, are taught in Key Stage One and studied again in further detail throughout Key Stage Two. This model allows children to build upon their prior knowledge and increases their enthusiasm for the topics whilst embedding this procedural knowledge into the long-term memory.

All children are encouraged to develop and use a range of skills including observations, planning and investigations, as well as being encouraged to question the world around them and become independent learners in exploring possible answers for their scientific based questions.

Specialist vocabulary for topics is taught and built up, and effective questioning to communicate ideas is encouraged. Concepts taught should be reinforced by focusing on the key features of working scientifically, so that pupils learn to use a variety of approaches to answer relevant scientific questions.

## Implementation:

As it is a core subject and crucial to pupils understanding of the world around them, science is taught every week in Years 1- 6. As science, alongside mathematics and literacy is a subject they must go on and study at secondary school to at least GCSE level we must ensure that they have a good understanding of the subject and its different disciplines.

With this in mind, we have categorized our science topics explicitly into Biology, Chemistry and Physics. In Year 1 pupils have a learning journal for all topics as they are very interlinked and the approach is cross curricular. In Year 2 pupils have a separate science book to their curriculum book. Taking this even further, the pupils in Key Stage 2 have separate books for each of these disciplines to help them identify which area of science they are studying. Having separate books in key stage 2 also allows us to pass them up through the year groups so that we have a continued record of the children's progress and to allow for reference to prior learning. Our pupils need regular signposting to prior learning in order to remind them of what they have learned and help them to retain the information they have learned. We are very much aware that for many of our pupils, school is the only time they ever discuss the phenomenon of the world around them and have opportunities to explore and explain their findings.

Our science curriculum is planned to allow for spiraled learning of topics, with repetition every couple of years to help develop the in-depth knowledge and understanding required. In addition to this, the books can also be used to assist in end of key stage assessment. We record pupil assessment on Educater which allows us to record assessment for each child against the key objectives for each topic. This way we can build a robust idea of the pupils learning and identify any areas of weakness in the curriculum that can be addressed. To aid the use of this assessment platform, we have built assessment for learning in to the teaching sequence to allow for a wide variety of assessment opportunities throughout a unit of work. Each topic has a start point to assess the knowledge pupils have already, a mid-point review to check on learning and an end point assessment. This is to ensure that teachers are providing many varied and active opportunities for the children to show their knowledge and learning in a wide variety of ways and not just an end of topic written test on which historically, our pupils have not fared well. The Early Years Foundation Stage (EYFS) follows the 'Development Matters in the EYFS' guidance which aims for all children in reception to have an 'Understanding of the World; people and communities, the world and technology' by the end of the academic year.

<p><b>Year Group</b></p>	<p><b>What we teach and why</b> Highlight repeats / skills building up</p>			<p><b>Adaptations and experiences that are specifically chosen for our community and make links to the wider world. What do we hang the learning on to make it exciting?</b> Include a variety of: charity work, cultural links, career opportunities, house competitions, trips, cross curricular links, intervention work, displays, focus on local area, link with external agencies, visitors, themed days etc..</p>
	<p><b>Autumn</b></p>	<p><b>Spring</b></p>	<p><b>Summer</b></p>	
<p><b>Nursery</b></p>	<p><b>Topic Title</b> Aut 1- All About Me Aut 2- Nursery Rhymes and Celebrations</p> <p><b>Links to DM</b> <b>Birth to Three</b> Repeat actions that have an effect. Explore materials with different properties. Explore natural materials, indoors and outside. Explore and respond to different natural phenomena in their setting and on trips.</p> <p><b>Three and Four Year Olds</b> Use all their senses in hand-on exploration of natural materials. Explore collections of materials with similar and/or different properties. Talk about what they see, using a wide vocabulary. Explore how things work. Understand the key features of the life cycle of a plant and an animal. Begin to understand the need to respect and care for the natural environment and all living things.</p> <p><b>Key Knowledge &amp; Vocabulary</b></p>	<p><b>Topic Title</b> Spr 1- People Who Help Us Spr 2- Patterns</p> <p><b>Links to DM</b> <b>Three and Four Year Olds</b> Explore collections of materials with similar and/or different properties. Talk about what they see, using a wide vocabulary. Explore how things work. Plant seeds and care for growing plants. Understand the key features of the life cycle of a plant and an animal. Begin to understand the need to respect and care for the natural environment and all living things.</p> <p><b>Key Knowledge &amp; Vocabulary</b> Wet and dry, hot and cold, opposites, frozen, melting, solid, liquid, winter time, fast, slow, heavy, light</p> <p><b>Sequence of Lessons</b>  Children talk about how to keep their teeth clean and find out about dentists.</p>	<p><b>Topic Title</b> Sum 1- Bears Sum 2- Seaside</p> <p><b>Links to DM</b> <b>Three and Four Year Olds</b> Use all their senses in hand-on exploration of natural materials. Explore collections of materials with similar and/or different properties. Talk about what they see, using a wide vocabulary. Explore how things work. Plant seeds and care for growing plants. Begin to understand the need to respect and care for the natural environment and all living things. Explore and talk about different forces they can feel. Talk about the differences between materials and changes they notice.</p> <p><b>Key Knowledge &amp; Vocabulary</b>  Consolidation of opposites, grass, mud, water, moon, flying, high, low, up, down, thick, runny, melting, frozen, wet, dry, cold, hot.</p>	<p>A daily part of registration is talking about the day, week, and month of the year. We also discuss the weather and the season. We talk about the changes outdoors and notice differences to the leaves in the trees and talk about the colours. We also talk about how warm/cold it is in relation to the seasons.  Throughout the year the children have free access during child-led learning to the outdoor area and investigation table. There are a variety of resources for the children to explore and learn about the basic properties of objects, materials and living things. Children have open access to the EYFS garden and help to plant and observe vegetables and plants. They get to experience the garden in all weathers and seasons and can see the effect frost, rain, sun has on the things that grow.</p>

	<p>Eyes, nose, mouth, ears, cheek, chin, head, shoulders, knees, toes, arms, elbows, legs, fingers, ankles, hair</p> <p>Autumn, change, leaves, red, orange, yellow, wind, falling, hot, cold, harvest, trees, plants, conkers, pine cones, hard, soft.</p> <p><b><u>Sequence of Lessons</u></b></p> <p>Children explore cause and effect with items in Nursery such as ramps, tubes, blocks and sliding toys.</p> <p>Children name the parts of the body including features of the face and talk about what we use each body part for.</p> <p>Children explore ways of moving using their bodies and talk about how it makes them feel.</p> <p>Children talk about what their different body parts do in reference to senses- what do we hear with, what do we see with?</p> <p>Children mould with different materials.</p> <p>Children explore different materials when making items in junk modelling and have support to talk about their properties.</p>	<p>Children talk about doctors and how to keep our bodies healthy.</p> <p>Children learn about vets and how to look after living things.</p> <p>Children explore melting and freezing when observing what happens to winter ice cubes in the frozen scene.</p> <p>Children explore patterns in the world around us, looking at patterns in nature.</p> <p>Children explore life cycles of plants and animals, talking about changes they observe.</p> <p>Children grow a plant from a seed.</p>	<p><b><u>Sequence of Lessons</u></b></p> <p>Children explore textures they encounter when going on a bear hunt.</p> <p>Children explore different textures and consistencies of porridge for Bears by adding different ingredients.</p> <p>Children make and talk about bear habitats for different species of bears.</p> <p>Children make a hat for a teddy to keep him dry, exploring what materials keep a teddy dry and discussing which materials are best from their observations.</p> <p>Children make and taste holiday foods.</p> <p>Children make lollies and explore melting.</p>	<p>The children have access to a variety of different mediums- such as- cornflour (Oobleck), shaving foam, jelly, paint, mud, etc. They discuss how they feel and their consistency and how they can change.</p> <p>During the Spring term the animal lady visits to show us some animals from around the world and what they eat, how they move and the sounds they make.</p> <p>The children will explore life cycles in the Spring term when we talk about seasonal changes for animals, using stories to support this, and also plant a seed and observe what happens to it as it grows.</p> <p><b><u>WORKING SCIENTIFICALLY</u></b></p> <p><b>Plan</b> To ask simple questions and recognise that they can be answered in different ways</p> <p><b>Do</b> To observe closely, using simple equipment</p> <p>To perform simple tests</p> <p>To identify and classify</p> <p><b>Review</b> To use their observations and ideas to suggest answers to questions</p>
<p><b>Reception</b></p>	<p><b><u>Topic Title</u></b> Aut 1- Local Environment Aut 2- Up in the Air</p>	<p><b><u>Topic Title</u></b> Spr 1- Changes Spr 2- Tea Party</p>	<p><b><u>Topic Title</u></b> Sum 1- Water and Under the Sea Sum 2- Cooking and Growing</p>	<p>A daily part of registration is talking about the day, week, and month of the year. We also discuss the weather and the season.</p>

<p><b>Links to DM</b> <b>Children in Reception</b></p> <ul style="list-style-type: none"> <li>- Explore the natural world around them.</li> <li>- Describe what they see, hear and feel whilst outside.</li> <li>- Understand the effect of changing seasons on the natural world around them.</li> <li>- Explore and talk about different forces they can feel (N)</li> </ul> <p><b>Key Knowledge &amp; Vocabulary</b> Autumn, change, leaves, space, planets, moon, harvest, trees, plants, conkers, pine cones, hibernation</p> <p><b>Sequence of Lessons</b> The children will go on an Autumn walk and talk about the changes that are occurring to most of the trees and how some are staying the same. <b>To observe closely, using simple equipment</b> The children make hedgehog habitats after learning about hibernation. They will learn about Harvest and then make bread, discussing the changes that occur when it is cooked. <b>To observe closely, using simple equipment</b> When we read the story- Whatever Next we looked at the moon and the different planets and how they are different. We will explore gravity and humans in space.</p> <p><b>How does this link build on previous learning?</b> Use all their senses in hands-on exploration of natural materials. (Nursery - Materials, including changing materials)</p> <p>Explore collections of materials with similar and/or different properties. (Nursery - Materials, including changing materials)</p> <p>Talk about the differences between materials and changes they notice. (Nursery - Materials, including changing materials)</p>	<p><b>Links to DM and ELG</b> <b>Children in Reception</b></p> <ul style="list-style-type: none"> <li>- Understand the effect of changing seasons on the natural world around them.</li> </ul> <p><b>ELG</b></p> <ul style="list-style-type: none"> <li>- Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.</li> <li>- Explore the natural world around them, making observations and drawing pictures of animals and plants;</li> </ul> <p><b>Key Knowledge &amp; Vocabulary</b> Changes, states of matter, predict, solid, liquid, ice, grow, plants, seasons, reversible, irreversible, seeds, root, stem, leaves, flower, lifecycle</p> <p><b>Sequence of Lessons</b> We explore how water can change. We, as a class, think decide where the ice can go and predict what we think will happen to it. To perform simple tests. To use their observations and ideas to suggest answers to questions. We plant seeds and discuss how they have changed and what plants need to be able to grow. To observe closely, using simple equipment and to identify and classify. We look at the lifecycle of a frog through the story- Growing Frogs. To identify and classify. We discuss Spring and how the trees are changing again, comparing them to how they were in both winter and autumn. To observe closely, using simple equipment) We then go on to look at baby animals and their parents and human lifecycles/how they have changed since they were babies. To ask simple questions and recognise that they can be answered in different ways.</p> <p><b>How does this link build on previous learning?</b></p>	<p><b>Links to ELG</b></p> <ul style="list-style-type: none"> <li>- Explore the natural world around them, making observations and drawing pictures of animals and plants;</li> <li>- 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;</li> <li>- Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.</li> </ul> <p><b>Key Knowledge &amp; Vocabulary</b> Creatures, shark, dolphin, crab, lobster, habitat, ocean, water, similarities and differences, recycling, predict, investigate, experiment, stem, flower, root, leaf, floating, sinking, vegetables</p> <p><b>Sequence of Lessons</b> Throughout the topic the children learn about different sea creatures/animals and where they live. To ask simple questions and recognise that they can be answered in different ways We discuss how we can save water and learn about recycling/protecting the planet. We do a milk and skittle experiment and discuss the changes that are occurring. To ask simple questions and recognise that they can be answered in different ways. During cooking and growing we grow different fruits and vegetables in the garden. We discuss how they are changing and all help to water and look after them. We talk about the parts of the plant and what they are for. To identify and classify We learn about floating and sinking and perform a simple experiment, predicting what will float or sink. To perform simple tests.</p> <p><b>How does this link build on previous learning?</b></p>	<p>We talk about the changes outside and notice differences to the leaves in the trees and talk about the colours. We also talk about how warm/cold it is in relation to the seasons.</p> <p>Throughout the year the children have free access during child-led learning to the outdoor area and investigation table. There are a variety of resources for the children to explore and learn about the basic properties of objects, materials and living things. Children have open access to the EYFS garden and help to plant and observe vegetables and plants. They get to experience the garden in all weathers and seasons and can see the effect frost, rain, sun has on the things that grow.</p> <p>The children have access to a variety of different mediums- such as- cornflour (Oobleck), shaving foam, jelly, paint, mud, etc. They discuss how they feel and their consistency and how they can change.</p> <p>During the Spring term the animal lady visits to show us some animals from around the world and what they eat, how they move and the sounds they make.</p> <p>Trip to a fruit and vegetable farm to see them growing and pick some.</p> <p>During the summer term there is an INSPIRE workshop with the parents to plant their own plants to take home and help to grow.</p> <p><b>WORKING SCIENTIFICALLY</b></p>
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Year 1	<p><b>Topic Title</b> Materials</p> <p><b>Links to NC</b> Distinguish between an object and the material from which it is made</p> <p>Compare and group together a variety of everyday materials on the basis of their simple physical properties</p> <p>Describe the simple physical properties of a variety of everyday materials</p> <p>Identify and compare the uses of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.</p> <p><b>Key Vocabulary</b> materials, properties, objects, physical, transparent, opaque, man-made, natural</p> <p><b>Sequence of Lessons</b> L.O. I am learning to identify everyday objects and name the materials they are made from.</p>	<p><b>Topic Title</b> Animals</p> <p><b>Links to NC</b> Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals including pets</p> <p>Identify and name a variety of common animals that are carnivores, herbivores and omnivores</p> <p>Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets)</p> <p><b>Key Vocabulary</b> Fish, amphibians, reptiles, birds, mammals, omnivore, herbivore, carnivore, habitat, diet, insect, nocturnal, lifecycle</p> <p><b>Sequence of Lessons</b> L.O. I am learning to name and identify different animals. L.O. I am learning to sort animals into different groups (mammals, fish, reptiles, amphibians, insects, birds)</p>	<p><b>Topic Title</b> Plants</p> <p><b>Links to NC</b> Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees</p> <p>Identify and describe the basic structure of a variety of common flowering plants, including trees</p> <p><b>Key Vocabulary</b> plants, leaves, trees, flowers, deciduous, evergreen, stem, roots, trunk, petal, branch</p> <p><b>Sequence of Lessons</b> L.O. I am learning to identify and describe the basic features of a flower (stem, petal, leaf, roots) L.O. I am learning to recognise and label the basic features of a flower and a tree. L.O. I am learning about the basic needs for a plant's survival.</p>	<p><b>Trips</b> <b>Ash End Farm</b> – focused on animals and their young, animal facts and caring for them - reptiles, mammals, birds, insects</p> <p><b>Inspire Workshop</b> Making a house for The Three Little Pigs – choosing appropriate materials</p> <p><b>Science Links through topics</b> <b>All About Me:</b> <b>My Body</b> <b>Senses</b> <b>Healthy Me</b> - how we can keep our bodies healthy (washing our hands, eating healthy food, brushing our teeth, washing our bodies) <b>Growth</b> – lifecycle of a human</p> <p><b>Animals:</b> L.O. I am learning to classify and sort objects into living and non-living.</p>

<p>L.O. I am learning to identify, name and sort objects into the material they are made from.</p> <p>L.O. I am learning to group together and describe a variety of everyday materials on the basis of their physical properties (smooth, shiny, hard, soft, rough, squishy, rigid, flexible)</p> <p>L.O. I am learning to identify, name and sort a variety of everyday materials by their physical properties.</p> <p>L.O. I am learning to identify and sort materials that are opaque and transparent.</p> <p><b><u>Links to Working Scientifically</u></b> To ask simple questions and recognise that they can be answered in different ways</p> <p>To identify and classify</p> <p>Perform simple tests</p> <p>Observe closely, using simple equipment</p> <p>Gather and recording data to help in answering questions</p> <p>Use their observations and ideas to suggest answers to questions</p> <p><b><u>Investigation</u></b> – flexible or rigid?</p> <p><b><u>Investigation</u></b> – what material shall I use for Teddy’s curtains? Opaque or Transparent</p> <p><b><u>How does this link build on previous learning?</u></b> In EYFS, the children have the opportunity to explore materials through their independent, child-led learning activities. They explore materials through in-direct teaching opportunities. There are investigation tables and outdoor learning activities with a variety of resources for the children to explore basic materials and objects.</p>	<p>L.O. I am learning that animals belong to different groups.</p> <p>L.O. I am learning that animals live in different habitats (ocean, woodland, desert, polar)</p> <p>L.O. I am learning to sort animals into the habitats they live in.</p> <p>L.O. I am learning to classify and sort a variety of animals that are herbivores, omnivores &amp; carnivores.</p> <p>L.O. I am learning about animal food chains.</p> <p>L.O. I am learning about animal life cycles.</p> <p><b><u>Links to Working Scientifically</u></b> To ask simple questions and recognising that they can be answered in different ways</p> <p>To identify and classify</p> <p><b><u>Investigation</u></b> – lifecycle of a butterfly (live butterfly garden to observe and explore)</p> <p><b><u>How does this link build on previous learning?</u></b> In EYFS, the children have the opportunity to explore animals through their Spring Topic – Changes. They explore changes in life-cycles of frogs and look at animal changes from baby animals to adult animals.</p> <p>In Year 1, we build on the children’s knowledge and extend this further within our Spring Term - Animals Topic, focusing on animal groups, habitats, animal features, food groups, food chains and lifecycles.</p> <p>We apply all of this knowledge to investigations: <b>Growing Butterflies</b> - setting up, planning for, tracking/observing and recording.</p>	<p>L.O. I am learning to identify and name a variety of common flowers.</p> <p>L.O. I am learning to identify and name a variety of common trees, using their leaves/flowers.</p> <p>L.O. I am learning to compare deciduous and evergreen trees and name some of these.</p> <p><b><u>Links to Working Scientifically</u></b> To ask simple questions and recognising that they can be answered in different ways</p> <p>To identify and classify</p> <p>Perform simple tests</p> <p>Observe closely, using simple equipment</p> <p>Gather and recording data to help in answering questions</p> <p>Use their observations and ideas to suggest answers to questions</p> <p><b><u>Investigation</u></b> – can we spot any common plants (trees/flowers) in our school community?</p> <p><b><u>Investigation</u></b> – planting beans to watch the process of growth</p> <p><b><u>How does this link build on previous learning?</u></b> In EYFS, the children have the opportunity to explore plants through their Spring Topics - Changes and their Summer Topic – Cooking &amp; Growing.</p> <p><b>Spring 1 – Changes</b> The children plant seeds and discuss how they have changed. They look at what plants need to be able to grow.</p> <p><b>Summer 2 - Cooking &amp; Growing</b> The children grow different fruits and vegetables in the garden during continuous provision. They discuss how the plants are changing, help to look after them and talk about the parts of the plant.</p>	<p>L.O. I am learning where food comes from.</p> <p>L.O. I am learning that different animals produce different foods.</p> <p>L.O. I am learning about nocturnal and diurnal animals.</p> <p><b><u>Curriculum Links</u></b> <b><u>Art</u></b> <b><u>WOW point:</u></b> Visit from Artist to make 3D animals. Research, draw and create an animal. Displayed on topic boards.</p> <p>See ART and DT intent documents.</p> <p><b><u>Literacy</u></b> <b>Fact Files</b> – habitats, diet, appearance, animal groups <b>Riddle</b> - writing about different animals</p> <p><b><u>WORKING SCIENTIFICALLY</u></b></p> <p><b>Plan</b> To ask simple questions and recognise that they can be answered in different ways</p>
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<p>In Year 1, we build on and extend children’s knowledge through direct teaching:  Naming and recognising objects, materials and their properties.  Exploring objects, materials and properties through investigations.</p> <p><b><u>Topic Title</u></b>  All About Me</p> <p><b><u>Links to NC</u></b>  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><b><u>Key Vocabulary</u></b>  head, neck, elbow, leg, knee, arm, face, ears, eyes, hair, mouth, teeth, toes, fingers, shoulder, hand, nose, smell, touch, sight, hear, taste, feel, see</p> <p><b><u>Sequence of Lessons</u></b>  L.O. I am learning to identify, name and label the parts of the body.   L.O. I am learning to draw different body parts and label them.   L.O. I am learning to explore my body through my senses - touch, hear, see, smell, feel.</p> <p><b><u>Links to Working Scientifically</u></b>  To ask simple questions</p> <p>To identify and classify</p> <p><b>Investigation</b> - Exploring Our Senses</p> <p><b><u>How does this link build on previous learning?</u></b>  In EYFS, particularly nursery, the children have the opportunity to explore their bodies through nursery rhymes, songs and name the body parts games. In Year 1, we focus on naming, identifying, drawing and labelling body parts and make links to these with our senses.</p> <p><b><u>Nursery Topic Link</u></b> - All About Me (Autumn 1)</p>		<p>In Year 1, we extend on this prior learning by directly teaching the children about plants across the Summer Term:  Identifying and naming common flowers and trees.  Exploring features of common trees and observing closely their leaves.  Identifying structures of plants.  Naming the parts and explaining what each part’s function is.  We apply our knowledge to investigations where we not only observe but gather and record data which we use to answer key questions.</p>	<p><b>Do</b>  To observe closely, using simple equipment</p> <p>To perform simple tests</p> <p>To identify and classify</p> <p><b>Record</b>  To gather and record data to help in answering questions</p> <p><b>Review</b>  To use their observations and ideas to suggest answers to questions</p>
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<p><b>Year 1 &amp; Year 2</b></p>	<p><b><u>Topic Title</u></b> Seasons</p> <p><b><u>Links to NC</u></b> Observe changes across the four seasons</p> <p>Observe and describe weather associated with the seasons and how day length varies</p> <p>Observe and talk about changes in the weather and the seasons</p> <p><b><u>Key Vocabulary</u></b> Seasons - Autumn, Spring, Winter, Summer Weather - cloudy, sunny, hot, cold, foggy, icy, humid, rainy leaves, trees, plants, hibernate, evergreen, deciduous, days of the week, months of the year, daytime, night-time</p> <p><b><u>Sequence of Lessons</u></b> Learning opportunities throughout the term: L.O. I am learning to observe the changes in the seasons – Autumn.</p> <p>L.O. I am learning to keep track the daily weather using a weather chart.</p> <p><b><u>Links to Working Scientifically</u></b> To ask simple questions</p> <p>To identify and classify</p>	<p><b><u>Topic Title</u></b> Seasons</p> <p><b><u>Links to NC</u></b> Observe changes across the four seasons</p> <p>Observe and describe weather associated with the seasons and how day length varies</p> <p>Observe and talk about changes in the weather and the seasons</p> <p><b><u>Key Vocabulary</u></b> Seasons - Autumn, Spring, Winter, Summer Weather - cloudy, sunny, hot, cold, foggy, icy, humid, rainy leaves, trees, plants, hibernate, evergreen, deciduous, days of the week, months of the year, daytime, night-time</p> <p><b><u>Sequence of Lessons</u></b> Learning opportunities throughout the term: L.O. I am learning to observe the changes in the seasons – Winter.</p> <p>L.O. I am learning to keep track the daily weather using a weather chart</p> <p>L.O. I am learning to identify and name some of the clothes I wear in the winter and explain why I wear them.</p> <p>L.O. I am learning to observe the changes in the seasons – Spring.</p>	<p><b><u>Topic Title</u></b> Seasons</p> <p><b><u>Links to NC</u></b> Observe changes across the four seasons</p> <p>Observe and describe weather associated with the seasons and how day length varies</p> <p>Observe and talk about changes in the weather and the seasons</p> <p><b><u>Key Vocabulary</u></b> Seasons - Autumn, Spring, Winter, Summer Weather - cloudy, sunny, hot, cold, foggy, icy, humid, rainy leaves, trees, plants, hibernate, evergreen, deciduous, days of the week, months of the year, daytime, night-time</p> <p><b><u>Sequence of Lessons</u></b> Learning opportunities throughout the term: L.O. I am learning to observe the changes in the seasons – Summer.</p> <p>L.O. I am learning to keep track the daily weather using a weather chart.</p> <p>L.O. I am learning to identify and name some of the clothes I wear in the summer and explain why I wear them.</p> <p><b><u>Links to Working Scientifically</u></b> To ask simple questions</p>	



	<p>Gather and recording data to help in answering questions</p> <p>Use their observations and ideas to suggest answers to questions</p> <p><b>How does this link build on previous learning?</b> In EYFS, the children have the opportunity to explore their environments (including seasons) through their topics:</p> <p><b>Autumn 1 - Local Environment</b> The children observe the basic changes in plants during Autumn - talking and sharing ideas on an Autumn Walk.</p> <p>In KS1, we build on this knowledge and extend our Autumn observations: Observing changes in plants, and animals (including humans). Observing, tracking and recording the weather using a weather chart.</p>	<p><b>Links to Working Scientifically</b> To ask simple questions</p> <p>To identify and classify</p> <p>Gather and recording data to help in answering questions</p> <p>Use their observations and ideas to suggest answers to questions</p> <p><b>How does this link build on previous learning?</b> In EYFS, the children have the opportunity to explore their environments (including seasons) through their topics:</p> <p><b>Spring 1 – Changes</b> The children continue seasonal observations, focusing on Spring changes and talk about how these differ from Autumn/Winter.</p> <p>In KS1, we build on this knowledge and extend our Spring/Winter observations: Observing changes in plants, and animals (including humans) and comparing changes across the autumn/winter/spring seasons. Observing, tracking and recording the weather using a weather chart. Recording changes through drawings, diagrams and written explanations.</p> <p>We extend our observations across the year - observing and exploring all 4 seasons, discussing and asking/answering questions about changes/differences between seasons and looking at the effects on plants/animals and humans.</p>	<p>To identify and classify</p> <p>Gather and recording data to help in answering questions</p> <p>Use their observations and ideas to suggest answers to questions</p>	
<p><b>Year 2</b></p>	<p><b>Topic Title</b> Uses of Everyday Materials</p> <p><b>Links to NC</b> 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><b>Topic Title</b> Living Things and Their Habitats</p> <p><b>Links to NC</b> Explore &amp; compare living things, non-living &amp; never lived.</p> <p>Identify that most living things need a habitat to which they are suited. The habitat must provide the basic needs of the living thing.</p>	<p><b>Topic Title</b> Animals including Humans</p> <p><b>Links to NC</b> Notice that all animals have offspring which grow into adults.</p> <p>Find out about and describe the basic needs of animals, including humans, for survival (water, food and air)</p>	<p><b>Curriculum Links through topics -</b> Living things and their habitats – links to Around the World.</p> <p>Literacy – writing fact files (non-chronological report)</p> <p><b>WORKING SCIENTIFICALLY</b></p> <p><b>Plan</b></p>

<p>Find out how the shapes of solid objects can be changed by squashing, bending, twisting and stretching.</p> <p><b><u>Key Vocabulary</u></b></p> <p>Object, material, metal, wood, plastic, properties, transparent, opaque, translucent, waterproof, flexible, suitability, natural, man-made,</p> <p><b><u>Sequence of Lessons</u></b>  L.O. I am learning to identify the properties of materials. I can name the object, the material and its use. Understand that materials can be used for many things e.g. wood can be used for doors, tables and spoons; the same object can be made of many materials e.g. spoons – wood, metal, plastic.</p> <p>L.O. I am learning to identify if a material is transparent, opaque or translucent.</p> <p>L.O. I am learning to identify if a material is waterproof or not and can explain why. (Investigation)</p> <p>L.O. I am learning to explain why objects are made from different materials, &amp; that some are more suitable than others.</p> <p>L.O. I am learning that some materials are natural or man-made.</p> <p><b><u>Links to Working Scientifically</u></b>  <b>Plan</b>  To ask simple questions.</p> <p><b>Do</b>  To identify and classify - sort objects according to their materials; natural or man-made; transparent, translucent or opaque;  To observe closely, using simple equipment. Which lets the most water through when using a pipette to drop water onto a material over a beaker. Use a timer?</p>	<p>Identify and name plants and animals in their habitats including micro-habitats</p> <p>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><b><u>Key Vocabulary</u></b>  Habitat, environment, micro-habitat, living, dead, never lived, predator, herbivore, omnivore, carnivore, source, shelter, sort and classify,</p> <p><b><u>Sequence of Lessons</u></b>  L.O. I am learning to identify living things and non-living things and things that have never been alive.</p> <p>L.O. I am learning about different habitats, which living things live where.</p> <p>L.O. I am learning to identify different plants and animals from specific habitats.</p> <p>L.O. I can say why an animal is suited and specially adapted to a habitat.</p> <p>L.O. I am learning about food chains. (producer, consumer, prey)</p> <p><b><u>Links to Working Scientifically</u></b>  <b>Plan</b>  To ask simple questions and recognise that they can be answered in different ways</p> <p><b>Do</b>  To identify and classify living things, non-living and things that have never been alive.</p> <p><b>Record</b>  To gather and record data to help in answering questions about animals and their habitats.</p> <p><b>Review</b>  To use their observations and ideas to suggest answers to questions- give reasons why certain</p>	<p>Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.</p> <p><b><u>Key Vocabulary</u></b>  Animals, young, reproduce, babies, eggs, life cycle, mammals, live young, growth, diet, healthy, balanced diet,</p> <p><b><u>Sequence of Lessons</u></b>  L.O. I am learning to identify animals and their young.</p> <p>L.O. I am learning to find out how different animals reproduce. (eggs, live young)</p> <p>L.O. I am learning to identify the stages of human development.</p> <p>L.O. I am learning about a healthy balanced diet.</p> <p>L.O. I am learning how to keep myself healthy.</p> <p><b><u>Links to Working Scientifically</u></b>  <b>Plan</b>  To ask simple questions and recognise that they can be answered in different ways - sort, classify, who has...</p> <p><b>Do</b>  To identify and classify - sort animals according to how they have their young; Sort foods into food groups.</p> <p><b>Record</b>  To gather and record data to help in answering questions. Keep a food diary;</p> <p><b>Review</b>  To use their observations and ideas to suggest answers to questions - design a healthy meal; say what is wrong with a given meal;</p> <p><b><u>How does this link build on previous learning?</u></b></p>	<p>To ask simple questions and recognise that they can be answered in different ways</p> <p><b>Do</b>  To observe closely, using simple equipment</p> <p>To perform simple tests</p> <p>To identify and classify</p> <p><b>Record</b>  To gather and record data to help in answering questions</p> <p><b>Review</b>  To use their observations and ideas to suggest answers to questions</p>
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<p><b>Record</b> To gather and record data and then use this to help in answering questions.</p> <p><b>Review</b> To use their observations and ideas to suggest answers to questions.</p> <p><b>Investigation</b> – waterproof or non-waterproof?</p> <p><b>Investigation</b> – which material would make the most suitable to wrap a present in? Why?</p> <p><b>Investigation</b> – Predict and then explore what happens to a material when you squash, twist, stretch, bend. Does it stay the same? Does it return to original shape? Is it a temporary change? A permanent change?</p> <p><b>How does this link build on previous learning?</b> Y1 - materials, what are they and what objects are made of.</p>	<p>animals live in certain habitats, and why they don't live in others.</p> <p><b>Investigation</b> – Bird Watching/Feeding – What do birds eat? Creating Bird Feeders and exploring the ideal areas in the school to place them. Predicting, observing and recording what type of birds use them and which bird feeder is most popular.</p> <p><b>How does this link build on previous learning?</b> Y1 where animals live – ocean, woodland etc</p>	<p>Y1 lifecycles</p> <p><b>Topic Title</b> Plants</p> <p><b>Links to NC</b> Observe and describe how seeds and bulbs grow into mature plants.</p> <p>Find out and describe how plants need water, light and suitable temperature to grow and stay healthy.</p> <p><b>Key Vocabulary</b> Plant, leaf, petal, flower, stem, growth, light, control experiment,</p> <p><b>Sequence of Lessons</b> L.O. I am learning about the features and functions of a plant (petal, leaf, stem, roots)</p> <p>L.O. I am learning about seed dispersal.</p> <p>L.O. I am learning about the life-cycle of a plant.</p> <p>L.O. I am learning to find out what plants need to survive. (water, light, warmth)</p> <p><b>Links to Working Scientifically</b> <b>Plan</b> To ask simple questions and recognise that they can be answered in different ways</p> <p><b>Do</b> To observe closely, using simple equipment To perform simple tests. To identify and classify.</p> <p><b>Record</b> To gather and record data about their observations looking at what happens to a plant if you take away light, water. Use this to help in answering questions</p> <p><b>Review</b></p>	
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Year 3	<p><b>Topic Title</b> Forces and Magnets</p> <p><b>Links to NC</b> Compare how things move on different surfaces.</p> <p>Notice that some forces need contact between two objects, but magnetic forces can act at a distance.</p> <p>Observe how magnets attract or repel each other and attract some materials and not others.</p> <p>Compare and group together a variety of everyday materials based on whether they are attracted to a magnet and identify some magnetic materials.</p> <p>Describe magnets as having two poles.</p> <p>Predict whether two magnets will attract or repel each other, depending on which poles are facing.</p> <p><b>Key Vocabulary</b> magnet, force, push, pull, attract, repel, magnetic, metal.</p> <p><b>Sequence of Lessons</b></p>	<p><b>Topic Title</b> Rocks and Soils</p> <p><b>Links to NC</b> Compare and group together different kinds of rocks based on their appearance and simple physical properties.</p> <p>Describe in simple terms how fossils are formed when things that have lived are trapped within rock.</p> <p>Recognise that soils are made from rocks and organic matter.</p> <p><b>Key Vocabulary</b> Igneous, sedimentary, metamorphic, permeable, impermeable, fossil, loam, clay, sand, chalk.</p> <p><b>Sequence of Lessons</b></p> <p>L.O. I can observe and describe the properties of rocks.</p> <p>L.O. I can test and compare rocks based on their hardness.</p>	<p><b>Topic Title</b> Animals including humans</p> <p><b>Links to NC</b> 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>Identify that humans and some other animals have skeletons and muscles for support, protection and movement.</p> <p><b>Key Vocabulary</b> herbivores, carnivores, omnivores, muscle, skeleton, endoskeletons, exoskeletons, hydroskeleton</p> <p><b>Sequence of Lessons</b> L.O. I can explain how many portions of food from different food groups we should eat in a day.</p> <p>L.O. I can match animals to their food.</p> <p>L.O. I can create a food chain and explain what it shows.</p>	<p><b>Display:</b></p> <p><b>Rocks and Soil:</b> Researched and designed posters for key vocabulary to be displayed throughout topic.</p> <p><b>Curriculum Links:</b></p> <p><b>Curriculum:</b> Italy and the Romans: made gelato in a bag using salt and ice.</p> <p><b>WORKING SCIENTIFICALLY THREADS</b></p> <p><b>Plan</b></p> <p>To ask relevant questions and using different types of scientific enquiries to answer them</p> <p>To set up simple practical enquiries, comparative and fair tests</p> <p><b>Do</b></p>

<p>L.O. I can compare how an object moves on different surfaces.</p> <p>L.O. I can investigate how magnetic forces act at a distance.</p> <p>L.O. I can investigate how magnetic forces act through different materials.</p> <p>L.O. I can investigate which materials are magnetic.</p> <p>L.O. I can investigate which metals are magnetic.</p> <p>L.O. I can investigate which magnet is the most powerful.</p> <p><b><u>Links to Working Scientifically</u></b> <b>Plan</b></p> <p>To ask relevant questions and using different types of scientific enquiries to answer them</p> <p>To set up simple practical enquiries, comparative and fair tests</p> <p><b>Do</b></p> <p>To make 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><b>Record</b></p> <p>To record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables</p> <p><b>Review</b></p> <p>To report on findings from enquiries, include oral and written explanations, displays or presentations of results and conclusions</p> <p>To use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions</p>	<p>L.O. I can investigate the properties of rocks.</p> <p>L.O. I can explain how fossils are formed.</p> <p>L.O. I can describe fossils and guess how they were formed.</p> <p>L.O. I can investigate what soils.</p> <p>L.O. I know what soils are made from.</p> <p>L.O. I can research Mary Anning.</p> <p>L.O. I can use research write a biography.</p> <p><b><u>Links to Working Scientifically</u></b> <b>Plan</b></p> <p>To ask relevant questions and using different types of scientific enquiries to answer them</p> <p>To set up simple practical enquiries, comparative and fair tests</p> <p><b>Do</b></p> <p>To make 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><b>Record</b></p> <p>To gather, record, classify and present data in a variety of ways to help in answering questions</p> <p>To record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables</p> <p><b>Review</b></p> <p>To report on findings from enquiries, include oral and written explanations, displays or presentations of results and conclusions</p>	<p>L.O. I can explain the functions of the human skeleton and identify its main bones.</p> <p>L.O. I can explain how muscles work.</p> <p>L.O. I can match animals to their skeletons.</p> <p>L.O. I can identify which type of skeleton an animal has.</p> <p><b><u>Links to Working Scientifically</u></b> <b>Plan</b></p> <p>To ask relevant questions and using different types of scientific enquiries to answer them</p> <p>To set up simple practical enquiries, comparative and fair tests</p> <p><b>Do</b></p> <p>To make 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><b>Record</b></p> <p>To gather, record, classify and present data in a variety of ways to help in answering questions</p> <p>To record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables</p> <p><b>Review</b></p> <p>To report on findings from enquiries, include oral and written explanations, displays or presentations of results and conclusions</p> <p>To use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions</p> <p>To identify differences, similarities or changes related to simple scientific ideas and processes</p>	<p>To make 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><b>Record</b></p> <p>To gather, record, classify and present data in a variety of ways to help in answering questions</p> <p>To record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables</p> <p><b>Review</b></p> <p>To report on findings from enquiries, include oral and written explanations, displays or presentations of results and conclusions</p> <p>To use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions</p> <p>To identify differences, similarities or changes related to simple scientific ideas and processes</p> <p>To use straightforward scientific evidence to answer questions or to support their findings.</p>
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<p>To use straightforward scientific evidence to answer questions or to support their finding</p> <p><b><u>How does this link build on previous learning?</u></b></p> <p>Year 2 - Uses of Everyday Materials - how objects shape can be changed by squashing, bending, twisting and stretching.</p> <p><b><u>Topic Title</u></b> Light</p> <p><b><u>Links to NC</u></b> Recognise that they need light in order to see things and that dark is the absence of light.</p> <p>Notice that light is reflected from surfaces.</p> <p>Recognise that light from the sun can be dangerous and that there are ways to protect their eyes.</p> <p>Recognise that shadows are formed when the light from a light source is blocked by a solid object.</p> <p>Find patterns in the way that the size of shadows change.</p> <p><b><u>Key Vocabulary</u></b> light, shadow, light source, non-light source, reflector, transparent, translucent, opaque.</p> <p><b><u>Sequence of Lessons</u></b></p> <p>L.O. I can identify a light source.</p> <p>L.O. I can identify whether an object is a light source or a reflector.</p> <p>L.O. I understand how shadows are formed.</p> <p>L.O. I can group objects according to whether they are transparent, translucent or opaque.</p> <p>L.O. I can investigate how moving a light source changes the size of an object's shadow.</p>	<p>To use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions</p> <p>To identify differences, similarities or changes related to simple scientific ideas and processes</p> <p>To use straightforward scientific evidence to answer questions or to support their findings.</p> <p><b><u>How does this link build on previous learning?</u></b> Year 2 – Use of everyday materials, identifying rocks and what they are used for</p>	<p>To use straightforward scientific evidence to answer questions or to support their findings.</p> <p><b><u>Topic Title</u></b> Plants</p> <p><b><u>Links to NC</u></b> Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers.</p> <p>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.</p> <p>Investigate the way in which water is transported within plants.</p> <p>Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.</p> <p><b><u>Key Vocabulary</u></b> roots, tuber, stem, bulb, trunk, branch, leaf, flower, fruit, germination, growth, flowering, fertilisation/seed production.</p> <p><b><u>Sequence of Lessons</u></b> L.O. I can identify the main parts of different flowering plants.</p> <p>L.O. I can explain the functions of the different parts of a flowering plant.</p> <p>L.O. I can investigate how competition for resources affects plant growth.</p> <p>L.O. I can investigate the needs of different plants.</p> <p>L.O. I can investigate how water is transported in plants.</p> <p>L.O. I can describe the life cycle of a flowering plant.</p>	
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<p>L.O. I can explain how the Sun can be dangerous and ways we can protect ourselves.</p> <p><b><u>Links to Working Scientifically</u></b></p> <p><b>Plan</b></p> <p>To ask relevant questions and using different types of scientific enquiries to answer them</p> <p>To set up simple practical enquiries, comparative and fair tests</p> <p><b>Do</b></p> <p>To make 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><b>Record</b></p> <p>To record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables</p> <p><b>Review</b></p> <p>To report on findings from enquiries, include oral and written explanations, displays or presentations of results and conclusions</p> <p>To use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions</p> <p>To use straightforward scientific evidence to answer questions or to support their finding</p> <p><b><u>How does this link build on previous learning?</u></b></p> <p>None – first time children are looking at light and shadows</p>		<p>L.O. I can explain different methods of pollination and seed dispersal in flowering plants.</p> <p><b><u>Links to Working Scientifically</u></b></p> <p><b>Plan</b></p> <p>To ask relevant questions and using different types of scientific enquiries to answer them</p> <p>To set up simple practical enquiries, comparative and fair tests</p> <p><b>Do</b></p> <p>To make 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><b>Record</b></p> <p>To gather, record, classify and present data in a variety of ways to help in answering questions</p> <p>To record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables</p> <p><b>Review</b></p> <p>To report on findings from enquiries, include oral and written explanations, displays or presentations of results and conclusions</p> <p>To use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions</p> <p>To identify differences, similarities or changes related to simple scientific ideas and processes</p> <p>To use straightforward scientific evidence to answer questions or to support their findings.</p> <p><b><u>How does this link build on previous learning?</u></b></p> <p>Y1 parts of a plant. Planting beans</p>	
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			Y2 Animals including humans – basic needs of animals and plants	
Year 4	<p><b>Topic Title</b> Classification (Biology) <b>Links to NC</b> Recognise that living things can be grouped in a variety of ways</p> <p>Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment</p> <p>Recognise that environments can change constantly changing and that this can sometimes pose dangers to specific habitats</p> <p><b>Key Vocabulary</b> Classify, key, organism, habitat, vertebrate, invertebrate, insect, millipede, centipede, mammal, bird, reptile, amphibian, fish, flowering plant</p> <p><b>Sequence of Lessons</b> LO I am learning to explain how living things can be classified.</p> <p>LO I am leaning to recognise how a simple key helps identify living things.</p>	<p><b>Topic Title</b> States of Matter (Chemistry) <b>Links to NC</b> 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 (°C)</p> <p>Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.</p> <p><b>Key Vocabulary</b> Solid, liquid, gas, matter, temperature, thermometer, melting, freezing, melting point, freezing point, evaporation, boiling, boiling point, condensing, water cycle</p> <p><b>Sequence of Lessons</b> LO To compare materials.</p> <p>LO To group materials together, based on observations on them to recognise that some</p>	<p><b>Topic Title</b> Electricity (Physics) <b>Links to NC</b> Identify common appliances that run on electricity</p> <p>Construct a simple series electrical circuit,</p> <p>Identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers</p> <p>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>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>Recognise some common conductors and insulators, and associate metals with being good conductors.</p> <p><b>Key Vocabulary</b> Battery, bulb, mains, rechargeable, circuit, components, terminals, wire, switch, conductor, insulator</p> <p><b>Sequence of Lessons</b></p>	<p><b>Autumn</b></p> <p>Links to animals in the rainforest</p> <p>Visit to Twycross Zoo</p> <p><b>Spring Term</b> States of Matter Scientist visited to demo solids. Liquids, gases with liquid nitrogen and dry ice</p> <p><b>WORKING SCIENTIFICALLY THREADS</b></p> <p><b>Plan</b></p> <p>To ask relevant questions and using different types of scientific enquiries to answer them</p>



<p>LO I am learning to observe key features of living things.</p> <p>LO I am learning to ask questions that can be used to construct a key.</p> <p>LO I am learning to explore and use classification keys to help group, identify and name a variety of living things in my local environment. (bug hunt)</p> <p><b><u>Links to Working Scientifically</u></b></p> <p>To ask relevant questions. (PLAN)</p> <p>To set up simple practical enquiries, comparative and fair tests(PLAN)</p> <p>To make careful observations. (DO)</p> <p>To construct a simple key (RECORD)</p> <p>To sort and classify (RECORD)</p> <p><b><u>How does this link build on previous learning?</u></b></p> <p>Y1, Y2 and Y3 - Animals including humans</p> <p><b><u>Topic Title</u></b> Teeth and eating (Biology)</p> <p><b><u>Links to NC</u></b> Describe the simple functions of the basic parts of the digestive system in humans</p> <p>Identify the different types of teeth in humans and their simple functions.</p>	<p>materials, for example water, may exist in solid, liquid and gas states.</p> <p>LO To make careful observations about how matter changes from solid to liquid.</p> <p>LO To read scales accurately.</p> <p>LO To observe that materials change state when they are heated and cooled.</p> <p>LO To recognise when these processes, called freezing, boiling and melting, take place.</p> <p>LO To measure and research temperatures in degrees Celsius.</p> <p>LO To explore patterns in freezing and melting.</p> <p>LO To recognise when evaporation and condensation take place.</p> <p>LO To explore what happens to a material that is evaporating or condensing.</p> <p>LO To identify the part played by evaporation and condensation in the water cycle.</p> <p><b><u>Links to Working Scientifically</u></b></p> <p>To set up simple practical enquiries, comparative and fair tests (PLAN)</p> <p>To use research skills to find out about temperature. (DO)</p> <p>To make 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>LO To identify common appliances that run on electricity.</p> <p>LO To classify and record appliances as mains or battery operated.</p> <p>LO To understand the difference between mains and battery-operated appliances.</p> <p>LO To understand that electricity can be dangerous.</p> <p>LO To recognise what is needed in order to make a bulb light in a circuit.</p> <p>LO To recognise and name some of the components that can be used to make a circuit.</p> <p>LO To explore patterns produced by altering circuits, making comparative tests.</p> <p>LO To recognise that some materials conduct electricity.</p> <p>LO To recognise that some materials do not conduct electricity.</p> <p>LO To use a simple circuit to create a device.</p> <p><b><u>Links to Working Scientifically</u></b></p> <p>To ask relevant questions and using different types of scientific enquiries to answer them (PLAN)</p> <p>To gather, record, classify and present data in a variety of ways to help in answering questions (RECORD)</p> <p>To record findings using simple scientific language, drawings, labelled diagrams, (RECORD)</p>	<p>To set up simple practical enquiries, comparative and fair tests</p> <p><b>Do</b></p> <p>To make 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><b>Record</b></p> <p>To gather, record, classify and present data in a variety of ways to help in answering questions</p> <p>To record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables</p> <p><b>Review</b></p> <p>To report on findings from enquiries, include oral and written explanations, displays or presentations of results and conclusions</p> <p>To use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions</p> <p>To identify differences, similarities or changes related to simple scientific ideas and processes</p> <p>To use straightforward scientific evidence to answer questions or to support their findings.</p>
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<p>Construct and interpret a variety of food chains, identifying producers, predators and prey</p> <p><b>Key Vocabulary</b> Molar, canine, incisor, enamel, decay, digestion, mouth, oesophagus, stomach, small intestine, large intestine, anus, nutrients, energy, carnivore, omnivore, herbivore</p> <p><b>Sequence of Lessons</b> LO To classify and identify different types of teeth and their functions.</p> <p>LO To recognise why and how we must take good care of them.</p> <p>LO To describe the functions of parts of the human digestive system.</p> <p>LO To recognise what a food chain represents.</p> <p>LO To construct and interpret a variety of food chains.</p> <p>LO To identify producers, predators and prey.</p> <p><b>Links to Working Scientifically</b></p> <p>To ask relevant questions and using different types of scientific enquiries to answer them (PLAN)</p> <p>To make observations and form conclusions. (DO)</p> <p>To and record findings using scientific language and labelled diagrams (RECORD)</p> <p>To use results to draw simple conclusions (REVIEW)</p>	<p>(DO)</p> <p>To record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables (RECORD)</p> <p>To use results to draw simple conclusions (REVIEW)</p> <p>To identify differences, similarities or changes related to simple scientific ideas and processes (REVIEW)</p> <p><b>How does this link build on previous learning?</b></p> <p>Y1 and Y2-Uses of Materials</p> <p><b>Topic Title</b> Sound (Physics)</p> <p><b>Links to NC</b> Identify how sounds are made, associating some of them with something vibrating.</p> <p>Recognise that vibrations from sounds travel through a medium to the ear</p> <p>Find patterns between the 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>Recognise that sounds get fainter as the distance from the sound source increases.</p> <p><b>Key Vocabulary</b> Vibration, volume, pitch, high, low, loud, quiet, ear, sound insulation, instrument, tune</p> <p><b>Sequence of Lessons</b> LO To observe and name a variety of sources of sound.</p>	<p>To report on findings from enquiries, include oral and written explanations, displays or presentations of results and conclusions (REVIEW)</p> <p>To identify differences, similarities or changes related to simple scientific ideas and processes (REVIEW)</p> <p><b>How does this link build on previous learning?</b> Year 1 and Year 2 Links to properties of materials This is the first time electricity is taught</p> <p><b>Topic Title</b> Brilliant Bubbles (Extra unit-Chemistry)</p> <p><b>Links to NC</b> Not in NC but links to States of Matter topic and provides opportunity for working scientifically.</p> <p><b>Key Vocabulary</b> Diluted, concentrated, concentration, sphere, melt, estimate, yeast, ferment</p> <p><b>Sequence of Lessons</b> LO To apply prior learning to a problem or question.</p> <p>LO To test how much air sweets contain.</p> <p>LO To carry out a survey to find the best tasting sherbet.</p> <p>LO To plan and carry out a fair test.</p> <p><b>Links to Working Scientifically</b></p> <p>To set up practical enquiries and fair tests (PLAN)</p> <p>To make systematic and careful observations and where appropriate, taking accurate measurements</p>	
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Year 5	<p><b>Topic Title</b> Space</p> <p><b>Links to NC</b> 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 approximately spherical bodies.</p> <p>Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky</p> <p><b>Key Vocabulary</b></p> <p>Solar system, universe, satellite, rotation, orbit, planet, asteroid, meteoroid, star, astronaut, full moon, waxing gibbous, half moon, waxing crescent, new moon, waning crescent, half moon waning gibbous.</p> <p><b>Sequence of Lessons</b></p> <p>LO: I am learning to clarify topic specific language.</p>	<p><b>Topic Title</b> Super Scientist</p> <p><b>Links to NC</b> Pupils might work scientifically by carrying out tests to answer questions</p> <p><b>Key Vocabulary</b> Forensic Fingerprint Chromatography Microscope DNA Evidence</p> <p><b>Sequence of Lessons</b> LO: To describe what a scientist is and the different ways in which they work.</p> <p>LO: To carry out some forensics tests.</p> <p>LO: To use forensic tests to solve a crime.</p> <p>LO: To plan and organise a science fair.</p> <p><b>Links to Working Scientifically</b> <b>Plan</b></p> <p>To plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary</p>	<p><b>Topic Title</b> Living things and their habitats</p> <p><b>Links to NC</b> Describe the difference in the life cycles of a mammal, an amphibian an insect and a bird</p> <p>Describe the life process of reproduction in some plants and animals</p> <p><b>Key Vocabulary</b> Plant, animals, rainforest, oceans, deserts, reproduction, sexual, asexual, mammal, amphibian, insect, bird, Jane Goodall, metamorphosis.</p> <p><b>Sequence of Lessons</b> L.O. I am learning to plan different types of scientific enquiries to answer questions,</p> <p>LO: I can describe how some plants reproduce.</p> <p>LO: I am designing a new plant.</p> <p>LO: I can describe the life cycles of different mammals.</p> <p>LO:</p>	<p><b>Autumn</b> Space Dome Trip to Jodrell Bank. Links to History topic (Space).</p> <p><b>Spring Term</b> Link to History topic (Crime and Punishment).</p> <p>Trip to the National Justice Museum.</p> <p>D&amp;T Sewn microorganism.</p> <p><b>WORKING SCIENTIFICALLY THREADS</b></p> <p><b>Plan</b></p> <p>To plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary</p> <p>To use test results to make predictions to set up further comparative and fair tests</p> <p><b>Do</b></p> <p>To take measurements, using a range of scientific equipment, with</p>

<p>LO: I am learning to compare the size and shape of the Sun, Moon and Earth.</p> <p>LO: I am learning to order the planets.</p> <p>LO: I am learning to discover the distance between each planet in our solar system.</p> <p>LO: I am learning to describe the distance, size and movement of all the planets relative to the sun.</p> <p>LO: I am learning about the rotation and orbit of the Earth and how this creates day and night.</p> <p>LO: I am learning to investigate the movement of the sun in the sky.</p> <p>LO: I am learning about the rotation and orbit of the moon and how we can see it in the sky.</p> <p>LO: To investigate what stars are and their constellations.</p> <p>L.O. I am learning investigate the impact made to a surface by objects falling from space.</p> <p><b><u>Links to Working Scientifically</u></b>  <b>Plan</b>  To plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary</p> <p><b>Do</b>  To take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate</p> <p><b>Record</b>  To record data and results of increasing complexity using scientific diagrams and labels, tables, scatter line graphs</p>	<p>To use test results to make predictions to set up further comparative and fair tests</p> <p><b>Do</b>  To take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate</p> <p><b>Record</b>  To record data and results of increasing complexity using scientific diagrams and labels,</p> <p><b>Review</b>  To report and present findings from enquiries, including conclusions, causal relationships and explanations, results, explanations of and degree of trust in results, in oral and written forms such as displays and other presentations</p> <p><b><u>How does this link build on previous learning?</u></b></p> <p><b>Topic Title</b>  Materials</p> <p><b><u>Links to NC</u></b>  Compare and group together everyday materials based on evidence from comparative and fair tests, including their hardness, solubility, transparency, conductivity (electrical and thermal), 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 solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating.</p>	<p>I can compare the life cycle of amphibians and insects.</p> <p>LO:  I can compare life cycles of plants, mammals, amphibians, insects and birds.</p> <p>LO: I can explain what Jane Goodall discovered about chimpanzees.</p> <p>L.O. I am learning to record and review my results.</p> <p><b><u>Links to Working Scientifically</u></b>  <b>Plan</b>  To plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary</p> <p>To use test results to make predictions to set up further comparative and fair tests</p> <p><b>Do</b>  To take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate</p> <p><b>Record</b>  To record data and results of increasing complexity using scientific diagrams and labels, tables and line graphs</p> <p><b>Review</b>  To report and present findings from enquiries, including conclusions, causal relationships and explanations, results, explanations of and</p>	<p>increasing accuracy and precision, taking repeat readings when appropriate</p> <p><b>Record</b>  To record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs</p> <p><b>Review</b>  To report and present findings from enquiries, including conclusions, causal relationships and explanations, results, explanations of and degree of trust in results, in oral and written forms such as displays and other presentations</p> <p>To identify scientific evidence that has been used to support or refute ideas or arguments.</p>
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<p><b>Review</b> To report and present findings from enquiries, including conclusions, causal relationships and explanations, results, explanations of and degree of trust in results, in oral and written forms such as displays and other presentations</p> <p><b><u>How does this link build on previous learning?</u></b> Children have been learning about the different seasons (Y1 – Seasons). Children have previously considered the sun as a light source, the dangers and ways to protect ourselves (Y3 Light)</p> <p><b><u>Topic Title</u></b> Forces</p> <p><b><u>Links to NC</u></b></p> <p>Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object</p> <p>Identify the effect of air resistance, water resistance and friction, that 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><b><u>Key Vocabulary</u></b></p> <p>Friction, force, balanced, gravity, newton, air resistance, water resistance, buoyancy streamlined, lever, pulley, gear, mechanism and equal.</p> <p><b><u>Sequence of Lessons</u></b></p> <p>LO: To identify forces acting on objects.</p> <p>LO: To explore the impact gravity has between falling objects and the Earth.</p>	<p>Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic.</p> <p>Demonstrate that dissolving, mixing and changes of state are reversible changes.</p> <p>Explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, include changes associated with burning and the action of acid on bicarbonate of soda.</p> <p><b><u>Key Knowledge &amp; Vocabulary</u></b></p> <p>Wood, metal, brick, plastic, stone, paper, fabric, water, ice, glass, temperature, electrical conductor, insulator, reversible, irreversible, separating, mixture, soluble, insoluble, absorbent, permeable, translucent, flexible. Hard, flammable, insulating, transparent.</p> <p><b><u>Sequence of Lessons</u></b></p> <p>LO: I can compare everyday materials according to their properties and explain why they have been used.</p> <p>LO: I can investigate thermal conductors.</p> <p>LO: I can investigate which conductor made a bulb shine brighter.</p> <p>LO: I can investigate which materials will dissolve.</p> <p>LO: I can use different processes to separate mixtures of materials.</p> <p>LO: I can identify reversible and irreversible changes.</p> <p><b><u>Links to Working Scientifically</u></b> <b>Plan</b></p>	<p>degree of trust in results, in oral and written forms such as displays and other presentations</p> <p>To identify scientific evidence that has been used to support or refute ideas or arguments.</p> <p><b><u>How does this link build on previous learning?</u></b></p> <p>Children have identified and described the basic structure of plants (Y1 Plants). Children have observed and described seeds growing considering use of light water and temperature for growth (Y2 Plants). Children have learned about the functions of different parts of a flowering plant: roots, stem/trunk, leaves and flowers. They have explore the requirements of plants for life and growth and explored the part that flowers play in the lifecycle of a plant- pollination, seed formation, seed dispersal. Children have also investigated how water is transported in plants. (Y3 Plants)</p> <p><b><u>Topic Title</u></b></p> <p>Animals including humans</p> <p><b><u>Links to NC</u></b></p> <p>Describe the changes as humans develop to old age</p> <p><b><u>Key Vocabulary</u></b></p> <p>Human, development, baby, toddler, child, teenager, adult, puberty, gestation, length, mass, grows and growing.</p> <p><b><u>Sequence of Lessons</u></b></p> <p>LO: I can describe the stages of human development.</p> <p>LO: I can present data which explains how babies grow and develop.</p>	
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<p>LO: To explore the effect gravity has on different objects.</p> <p>LO: I am learning to explore the effects of air resistance.</p> <p>LO: To explore the effects of water resistance.</p> <p>LO: To explore the effects of friction.</p> <p>LO: I am investigating resistance.</p> <p>LO: To explore and design mechanisms.</p> <p>LO: To identify situations where I will need a lever, pulley or gear.</p> <p><b><u>Links to Working Scientifically</u></b></p> <p><b>Plan</b> To plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary</p> <p>To use test results to make predictions to set up further comparative and fair tests</p> <p><b>Do</b> To take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate</p> <p><b>Record</b> To record data and results of increasing complexity using scientific diagrams and labels, tables and bar graphs</p> <p><b>Review</b> To report and present findings from enquiries, including conclusions, causal relationships and explanations, results, explanations of and degree of trust in results, in oral and written forms such as displays and other presentations</p>	<p>To plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary</p> <p>To use test results to make predictions to set up further comparative and fair tests</p> <p><b>Do</b> To take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate</p> <p><b>Record</b> To record data and results of increasing complexity using scientific diagrams and labels, tables, bar and line graphs</p> <p><b>Review</b> To report and present findings from enquiries, including conclusions, causal relationships and explanations, results, explanations of and degree of trust in results, in oral and written forms such as displays and other presentations</p> <p>To identify scientific evidence that has been used to support or refute ideas or arguments.</p> <p><b><u>How does this link build on previous learning?</u></b> They have identified, grouped and describe the properties of materials in everyday objects (Y1 Materials). Children have identified and compared the suitability of everyday materials, finding out how solid objects can be changed (Y2 Materials) They have compared and grouped materials according to whether they are solids, liquids or gases and observed changes of states of matter through heating and cooling. Children have also identified the part played by condensation and evaporation in the water cycle, associating the rate</p>	<p>LO: I can describe and explain the main changes that occur during puberty.</p> <p>LO: I can identify changes that occur in old age.</p> <p><u>LO</u>: I can report finds of enquiries.</p> <p>LO: I can record complex data using graphs and models and identify the relationship between variables.</p> <p><b><u>Links to Working Scientifically</u></b></p> <p><b>Record</b> To record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs</p> <p><b>Review</b> To report and present findings from enquiries, including conclusions, causal relationships and explanations, results, explanations of and degree of trust in results, in oral and written forms such as displays and other presentations</p> <p>To identify scientific evidence that has been used to support or refute ideas or arguments.</p> <p><b><u>How does this link build on previous learning?</u></b> Children have learned that all animals have offspring, which grow into adults. They have considered the needs of animals for survival and importance of exercise, food and hygiene. (Y2 Animals including Humans). Children have previously learned about the right types of nutrition animals including humans need and that they cannot make their own food; they get nutrition from what they eat. They have learned about the skeletal and muscular system. (Y3 Animals including Humans) Children have also learned about parts of the digestive system (Y4 Animals including Humans)</p>	
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	<p>To identify scientific evidence that has been used to support or refute ideas or arguments.</p> <p><b>How does this link build on previous learning?</b> Children have previously learned how things have moved on different surfaces, and the effects that magnets can have on different objects, comparing materials based on whether they are magnetic or not and whether poles attract or repel. (Y3 Forces and Magnets)</p>	<p>of evaporation with temperature. (Y4 States of matter) Children have also learned about electrical conductors and insulators (Y4 Electricity)</p>		
<p>Year 6</p>	<p><b>Topic Title</b> Classifying Critters</p> <p><b>Links to NC</b> Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals</p> <p>Give reasons for classifying plants and animals based on specific characteristics.</p> <p><b>Key Vocabulary</b> Flora/ Fauna/ Vertebrate/ Invertebrate/Mammal/Bird/Amphibian/Reptile/Fish/Fungi/Mushroom/ Toadstool/Fermentation/ Microbe/Bacteria/Species/ Genus/ Organisms/ Bacteria</p> <p><b>Sequence of Lessons</b> LO: I am learning to classify organisms (vertebrates and invertebrates) LO: I am learning to classify similar organisms LO: I am learning to classify plants LO: I am learning to describe how living things are classified based upon specific characteristics - Linnaeus</p>	<p><b>Topic Title</b> Let It Shine</p> <p><b>Links to NC</b> 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><b>Key Vocabulary</b> Light ray/Cornea:/ Pupil/ Iris/Reflection/ Symmetry/Rainbow</p> <p><b>Sequence of Lessons</b> LO: I am learning to explain how we see LO: I am learning to explain why shadows have the same shape as the object that casts them LO: I am learning to understand how mirrors reflect light LO: I am learning to investigate how refraction changes the direction in which light travels</p>	<p><b>Topic Title</b> We Are Dinosaur Hunters</p> <p><b>Links to NC</b> Not in NC but follows on from Evolution</p> <p><b>Key Vocabulary</b> Prehistoric:/ Mesozoic/ Triassic/ Jurassic/ Cretaceous/ Trace fossil/ Coproli/ Herbivore/ Carnivore/ Omnivore/ Evidence/ Extinction/ Mass extinction/ Warm-blooded/ Cold-blooded</p> <p><b>Sequence of Lessons</b> LO: I am learning to make accurate measurements and predictions (create a dinosaur/timeline) LO: I am learning to make accurate observations (feet and droppings) LO: I am learning to investigate warm and cold blooded creatures LO: I am learning to investigate the theory of how dinosaurs became extinct (sand and bucket) LO: I am learning to explain how a species became extinct</p> <p><b>Links to Working Scientifically</b> Plan</p> <p>To plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary</p> <p>Do</p>	<p>Evolution CSI workshop Children looked into DNA and how everybody has a unique fingerprint – even identical twins. Light Science Dome - visit to hook children into the topic. This session covers the whole unit in a snapshot.</p> <p><b>WORKING SCIENTIFICALLY THREADS</b></p> <p>Plan</p> <p>To plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary</p> <p>To use test results to make predictions to set up further comparative and fair tests</p> <p>Do</p> <p>To take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate</p>



<p>LO: I am learning to identify the characteristics of different types of microorganisms (5 kingdoms and glitter/germs)</p> <p>LO: I am learning to describe and investigate helpful and harmful micro- organisms (bread investigation)</p> <p>Ongoing</p> <p>LO: I am learning to investigate the work of scientists (Linnaeus)</p> <p><b><u>Links to Working Scientifically</u></b></p> <p><b>Plan</b></p> <p>To plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary</p> <p><b>Do</b></p> <p>To take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate</p> <p><b>Record</b></p> <p>To record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs</p> <p><b>Review</b></p> <p>To report and present findings from enquiries, including conclusions, causal relationships and explanations, results, explanations of and degree of trust in results, in oral and written forms such as displays and other presentations</p> <p><b><u>How does this link build on previous learning?</u></b></p> <p>Year 4 – grouping living things</p> <p><b><u>Topic Title</u></b></p> <p>We are Evolving</p> <p><b><u>Links to NC</u></b></p>	<p>LO: I am learning to investigate how a prism changes a ray of light</p> <p>LO: I am learning to investigate how light enables us to see colours</p> <p>Ongoing</p> <p>LO: I am learning to investigate the work of Newton</p> <p><b><u>Links to Working Scientifically</u></b></p> <p><b>Plan</b></p> <p>To plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary</p> <p>To use test results to make predictions to set up further comparative and fair tests</p> <p><b>Do</b></p> <p>To take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate</p> <p><b>Record</b></p> <p>To record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs</p> <p><b>Review</b></p> <p>To report and present findings from enquiries, including conclusions, causal relationships and explanations, results, explanations of and degree of trust in results, in oral and written forms such as displays and other presentations</p> <p><b><u>How does this link build on previous learning?</u></b></p> <p>Year 3 – light</p> <p><b><u>Topic Title</u></b></p> <p>Staying Alive</p> <p><b><u>Links to NC</u></b></p>	<p>To take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate</p> <p><b>Record</b></p> <p>To record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs</p> <p><b>Review</b></p> <p>To identify scientific evidence that has been used to support or refute ideas or arguments.</p> <p><b><u>How does this link build on previous learning?</u></b></p> <p>Year 6 – evolution</p> <p>Year 3 – rocks/fossils</p> <p><b><u>Topic Title</u></b></p> <p>Electrifying</p> <p><b><u>Links to NC</u></b></p> <p>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>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>Use recognised symbols when representing a simple circuit in a diagram.</p> <p><b><u>Key Vocabulary</u></b></p> <p>Component/. Cell/ Complete/Electron/ Fuse/Blow/ Filament/ Cell/ Battery/ Renewable/Solar</p> <p><b><u>Sequence of Lessons</u></b></p> <p>LO: I am learning to recognise what is needed to make a circuit work</p> <p>LO: I am learning to observe and explain the effects of differing volts in a circuit (symbols)</p>	<p><b>Record</b></p> <p>To record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs</p> <p><b>Review</b></p> <p>To report and present findings from enquiries, including conclusions, causal relationships and explanations, results, explanations of and degree of trust in results, in oral and written forms such as displays and other presentations</p> <p>To identify scientific evidence that has been used to support or refute ideas or arguments.</p>
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<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><b><u>Key Vocabulary</u></b> Variety/Inherited Evolution/ Adaptation/ Natural selection/ Fossil/ Dinosaur/ Prehistoric</p> <p><b><u>Sequence of Lessons</u></b> LO: I am learning to recognise that living things produce offspring of the same kind LO: I am learning to explain adaptation LO: I am learning to recognise that living things evolve over time(x2) LO: I am learning to use fossils to understand how living things have evolved over time. LO: I am learning to explain how adaptations can result in both advantages and disadvantages. Ongoing throughout topic: LO: I am learning to investigate the work of famous scientists/paleontologists_(Anning/ Darwin)</p> <p><b><u>Links to Working Scientifically</u></b></p> <p><b>Plan</b></p> <p>To plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary</p> <p><b>Do</b></p> <p>To take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate</p>	<p>Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood</p> <p>Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function</p> <p>Describe the ways in which nutrients and water are transported within animals, including humans.</p> <p><b><u>Key Vocabulary</u></b> Heart/Lungs/ Blood/ Oxygen/ Vein/Artery/ Heart/ Exercise/ Addiction/ Nicotine</p> <p><b><u>Sequence of Lessons</u></b> LO: I am learning to identify and name the main parts of the human circulatory system LO: I am learning to describe the functions of the circulatory system LO: I am learning to explain how water and nutrients are transported within the body LO: I am learning to describe how diet and exercise impact on the body LO: I am learning to plan a scientific inquiry LO: I am learning to record, report and present results appropriately LO: I am learning to explain the impact of drugs and alcohol on the body</p> <p><b><u>Links to Working Scientifically</u></b></p> <p><b>Plan</b></p> <p>To plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary</p> <p><b>Do</b></p> <p>To take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate</p> <p><b>Record</b></p>	<p>LO: I am learning to observe and explain the effects of differing volts in a circuit (brightness of bulb/volume of buzzer) LO: I am learning to plan an investigation LO: I am learning to conduct an investigation LO: I am learning to record data and report findings</p> <p><b><u>Links to Working Scientifically</u></b></p> <p><b>Plan</b></p> <p>To use test results to make predictions to set up further comparative and fair tests</p> <p><b>Do</b></p> <p>To take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate</p> <p><b>Record</b></p> <p>To record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs</p> <p><b>Review</b></p> <p>To identify scientific evidence that has been used to support or refute ideas or arguments.</p> <p><b><u>How does this link build on previous learning?</u></b> Year 4 – electricity</p>	
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	<p><b>Record</b></p> <p>To record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs</p> <p><b>Review</b></p> <p>To identify scientific evidence that has been used to support or refute ideas or arguments.</p> <p><b><u>How does this link build on previous learning?</u></b> Year 3 – fossils and rocks</p>	<p>To record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs</p> <p><b>Review</b></p> <p>To report and present findings from enquiries, including conclusions, causal relationships and explanations, results, explanations of and degree of trust in results, in oral and written forms such as displays and other presentations</p> <p><b><u>How does this link build on previous learning?</u></b> Year 3 and 4 - the main body parts and internal organs (skeletal, muscular and digestive system)</p>		
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<b>Working Scientifically threads</b>	<b>Key Knowledge Threads</b>
<p><b>Plan</b></p> <p><b>Do</b></p> <p><b>Record</b></p> <p><b>Review</b></p>	<p><b><u>Biology</u></b></p> <p>Animals including humans</p> <p>Living things and their habitats</p> <p>Evolution and inheritance</p> <p>Seasons</p> <p><b><u>Physics</u></b></p> <p>Electricity</p> <p>Light</p> <p>Earth and Space</p> <p>Forces</p> <p>Sound</p> <p><b><u>Chemistry</u></b></p> <p>Properties and changes of materials</p> <p>States of matter</p> <p>Rocks</p>

