

Science



		1	2	3	4	5	6
		Time Travel	Planet Earth	Heroes and Villains	What's in the News?	Food for Thought	Incredible Humans
Cycle A	1/2	<p><u>How does the weather change?</u></p> <p><b>Unit: Seasonal Changes: Autumn and Winter</b> During this half term, the children will study how the length of the day varies through the year. They will also be learning about what types of weather are associated with the seasons.</p> <p><b>Type of Investigation: Observation</b> The children will be making observations over time, studying the weather through the half term and learning how to record this data through drawings, in a table.</p> <p><b>Links to Prior Learning</b> The children will have explored changes in the seasons, including exploring what happens on a cold, winter's day.</p>	<p><u>Which habitat do minibeasts like the most?</u></p> <p><b>Unit: Living Things and Their Habitats</b> In this science unit, the children will study habitats. This theme will be supported by a trip to Tophill Low Nature Reserve where the children can study minibeasts in their natural habitat.</p> <p><b>Type of Investigation: Asking Questions</b> The children will learn how to work scientifically by posing questions about animals in their habitats. The children will record their data in a simple table, and will make links to maths as they start to present their data.</p> <p><b>Links to Prior Learning</b> The children will have an understanding of some animals and where they live from the work that they have done in the Early Years.</p>	<p><u>Which material should we use to make a house for the Three Little Pigs?</u></p> <p><b>Unit: Suitability of Everyday Materials</b> The children will learn to identify and name different materials and their properties during this science unit.</p> <p><b>Type of Investigation: Comparative Tests</b> To investigate the properties of different materials, the children will be investigating the strength of different materials. They will learn how to work scientifically by comparing the strength of straw, card and Lego houses.</p> <p><b>Links to Prior Learning</b> The children will have already had exposure to naming materials such as wood, plastic, glass, metal and paper.</p>	<p><u>Is the temperature always the same? Does the wind always blow in the same direction?</u></p> <p><b>Unit: Seasonal Changes: Spring and Summer</b> The children will continue to learn about changes in the seasons, paying particular attention to spring and summer.</p> <p><b>Type of Investigation: Noticing Patterns</b> Working scientifically, the children will continue to develop their observational skills, recording different weather patterns through drawing.</p> <p><b>Link to Prior Learning</b> This unit of work follows on from the work started in the autumn term. Prior to KS1, the children will have also observed different types of weather during the Early Years.</p>	<p><u>Are all children small and all adults tall?</u></p> <p><b>Unit: Animals Including Humans</b> The children will study healthy lifestyles during this unit of work. The children will learn about the need for exercise, a balanced diet and good hygiene to stay healthy. The children will also learn about life cycles.</p> <p><b>Type of Investigation: Comparative Tests</b> The children will be investigating heights of different people in the school. They will have an introduction into how to use measuring tapes to take measurements, with support, recording their results in a simple table.</p> <p><b>Links to Prior Learning</b> In the Early Years, the children will have had an introduction into making healthy food choices.</p>	<p><u>What do plants need to grow healthily?</u></p> <p><b>Unit: Plants</b> The children will practise naming different plants. They will also learn about the difference between evergreen and deciduous trees. This unit may be supported by a trip to East Park where plants and trees can be observed.</p> <p><b>Type of Investigation: Observation</b> The children will learn that plants need water, light and warmth to grow healthily by taking part in an investigation where they will observe plants growing from seeds in different conditions.</p> <p><b>Links to Prior Learning</b> In the Early Years, the children will have observed the plants and trees around them.</p>
	3/4	<p><u>How do road surfaces affect the distance that cars travel?</u></p> <p><b>Unit: Forces and Magnets</b> The children will be introduced to different forces. They will also learn about magnets.</p> <p><b>Type of Investigation: Comparative Tests</b> In this unit, the children will investigate how the texture of a surface affects the distance that a toy car moves. They will set up their enquiry and then record their findings.</p> <p><b>Links to Prior Learning</b> This is the children's first introduction to forces. The children will have already had experience in comparative tests in Key Stage One.</p>	<p><u>Are all rocks the same?</u></p> <p><b>Unit: Rocks</b> The children will learn to identify different types of rocks. They will also learn about how soil and fossils are formed.</p> <p><b>Type of Investigation: Grouping &amp; Classifying</b> The children will compare and classify different rocks based on what they can see, including the presence of crystals and whether or not the rocks have layers. The children will give oral and/or written explanations of their results and conclusions.</p> <p><b>Links to Prior Learning</b> This is the children's first introduction to rocks. They have previously practised grouping and classifying when they sorted animals into different groups in KS1.</p>	<p><u>Can people with longer femurs jump further?</u></p> <p><b>Unit: Animals Including Humans</b> The children will recap what animals need to survive. They will also learn why animals and humans have skeletons and muscles.</p> <p><b>Type of Investigation: Asking Questions</b> The children will pose questions about skeletons and muscles, conducting an investigation to work out whether the length of your femur affects how far you can jump.</p> <p><b>Links to Prior Learning</b> In KS1, the children have learned about animals and what they need to be healthy. This is the children's first time learning about skeletons and muscles.</p>	<p><u>When will I see the longest shadow?</u></p> <p><b>Unit: Light</b> In this unit, the children will learn how light is reflected from surfaces. They will also deepen their learning about how shadows form and change.</p> <p><b>Type of Investigation: Noticing Patterns</b> Whilst learning about shadows, the children will notice patterns as they observe how shadows change across the day. They will use scientific equipment, such as measuring tape, to collect results.</p> <p><b>Links to Prior Learning</b> Links can be made to children's KS1 learning about the seasons.</p>	<p><u>How does water travel through a plant?</u></p> <p><b>Unit: Plants</b> During this unit, the children will continue to develop their understanding of what plants need to grow. The children will also learn about the plant's life cycle.</p> <p><b>Type of Investigation: Observation</b> The children will gain a greater understanding of the function of parts of a plant when they investigate how water travels through a plant. They will record their findings using labelled diagrams.</p> <p><b>Links to Prior Learning</b> The children have previously learned the names of different plants. This learning can be retrieved during this theme. As an extension, the children will now learn about the function of different parts of a plant.</p>	<p><u>Are all drinks healthy?</u></p> <p><b>Unit: Animals Including Humans</b> The children will study nutrition, skeletons and muscles during this unit.</p> <p><b>Type of Investigation: Research</b> The children will use research to investigate the amounts of sugar found in drinks. They will work scientifically, recording their findings in tables. The children will draw conclusions from their results, explaining these either orally or in writing.</p> <p><b>Links to Prior Learning</b> The children will already have had an introduction to skeletons and muscles earlier this year. This unit gives the children the opportunity to recall their previous learning.</p>
	5/6	<p><u>How does surface area affect the speed at which an object falls?</u></p> <p><b>Unit: Forces</b> The children will extend their knowledge of forces as they learn about gravity, air resistance and friction.</p> <p><b>Type of Investigation: Noticing Patterns</b> The children will investigate air resistance as they explore whether or not the surface area of an object affects the speed at which it falls.</p> <p><b>Links to Prior Learning</b> The children have previously investigated how the texture of surfaces affect the distance that a car moves. The children can recall this learning when being introduced to the force: friction. Links can also be made to children's learning from design and technology when they have learned about levers and pulleys.</p>	<p><u>Do all solids dissolve?</u></p> <p><b>Unit: Properties of Materials</b> The children will learn about dissolving and mixing during this theme.</p> <p><b>Type of Investigation:</b> When investigating whether or not all solids dissolve, the children will work scientifically to record data and present their findings.</p> <p><b>Links to Prior Learning</b> The children will have previously learned about solids, liquids and gases.</p>	<p><u>Are the gestation periods of all species of animal the same?</u></p> <p><b>Unit: Animals Including Humans</b> During this theme, the children will be studying the different stages of human development.</p> <p><b>Type of Investigation: Research</b> The children will use research to investigate the gestation periods of animals, recording and presenting their results scientifically.</p> <p><b>Links to Prior Learning</b> In KS1, the children will have studied life cycles and offspring.</p>	<p><u>Can a plant be cloned?</u></p> <p><b>Unit: Living Things</b> The children will learn about the life process of reproduction, including how plants reproduce. They will also continue to learn about life cycles of different types of animal.</p> <p><b>Type of Investigation: Observation</b> Whilst propagating plants, the children will make observations to decide whether or not a plant can be 'cloned'. They will draw conclusions from what they observe.</p> <p><b>Links to Prior Learning</b> In LKS2, the children will have learned about the functions of different parts of a plants.</p>	<p><u>Are changes of state reversible changes?</u></p> <p><b>Unit: Properties of Materials</b> The children will continue to extend their learning about materials, applying their knowledge of solubility to group and classify materials.</p> <p><b>Type of Investigation: Asking Questions</b> Working scientifically, the children will explore whether changes of state are reversible.</p> <p><b>Links to Prior Learning</b> The children will have been introduced to dissolving and mixing earlier in the year. This is an opportunity for them to recall and apply their prior learning.</p>	<p><u>Can shadows help us to tell the time?</u></p> <p><b>Unit: Earth and Space</b> This unit introduces the children to the eight planets. They will learn about the movement of the Earth, other planets and the moon.</p> <p><b>Type of Investigation: Noticing Patterns</b> The children will extend their understanding of the movement of the Earth when they investigate shadows.</p> <p><b>Links to Prior Learning</b> The children have previously investigated the length of shadows. This is an opportunity for the children to use measuring tools with more accuracy and to link their results to their learning about the movement of the Earth.</p>

	1 Kings and Queens	2 A Drop in the Ocean	3 A Stitch in Time	4 A Helping Hand	5 Battle of the Authors	6 Survival of the Fittest
1/2	<p><u>Can the shape of a solid be changed?</u></p> <p><b>Unit: Properties of Everyday Materials</b> During this unit, the children will revise the names of materials such as wood, plastic, glass, metal and rock. They will learn how to describe the properties of these materials.</p> <p><b>Type of Investigation: Asking Questions</b> The children will ask questions about the properties of materials. They will then answer their questions by exploring the materials. The children will use their investigation to try to decide whether or not a solid can be changed (for example: change size, shape or texture).</p> <p><b>Links to Prior Learning</b> In the Early Years, the children will have started to name different materials. There is a second opportunity for the children to explore materials and their properties in KS1, Cycle A.</p>	<p><u>How can animals be grouped?</u></p> <p><b>Unit: Animals Including Humans: Classifying Animals</b> The children will learn about different groups of animals during this half term. They will also learn the difference between carnivores, herbivores and omnivores.</p> <p><b>Type of Investigation: Grouping and Classifying</b> The children will learn how to group and classify when learning the different animal groups.</p> <p><b>Links to Prior Learning</b> The children will have previously practised describing and naming different animals.</p>	<p><u>Can a pine cone predict the weather?</u></p> <p><b>Unit: Seasons: Autumn and Winter</b> The children will learn about how the length of the day varies through the year. They will also observe the different types of weather associated with certain seasons.</p> <p><b>Type of Investigation: Observation</b> The children will investigate how a pinecone changes in different weather conditions. They will discuss what they see.</p> <p><b>Links to Prior Learning</b> The children will have observed and discussed different types of weather during KS1. There are also further opportunities in Cycle A to learn about the changing seasons.</p>	<p><u>Is sand a liquid or a solid?</u></p> <p><b>Unit: Changing Shape: Everyday Materials</b> The children will further their knowledge of materials and their properties during this unit of work. They will learn about the differences between solids and liquids.</p> <p><b>Type of Investigation: Asking Questions</b> The children will ask questions about solids and liquids. They will use their questioning skills to investigate whether they think sand is a solid or a liquid.</p> <p><b>Links to Prior Learning</b> In the autumn term, the children will have learned about materials and their properties.</p>	<p><u>Do plants need soil to grow?</u></p> <p><b>Unit: Plants</b> The children will recap the names of different plants, learning to identify them by studying their leaves and flowers. The children will also learn about evergreen and deciduous trees.</p> <p><b>Type of Investigation: Observation</b> The children will investigate the conditions needed for growth by comparing how well seeds grow in different conditions.</p> <p><b>Links to Prior Learning</b> The children will have started to observe plants in their natural environment during the Early Years. In Cycle A in KS1, there is further opportunity to identify and name plants.</p>	<p><u>Do plants breathe?</u></p> <p><b>Unit: Living Things</b> This half term, the children will be learning about the seven life processes. They will learn the difference between things that are living, dead and alive.</p> <p><b>Investigation(s): Observation</b> When learning about respiration, the children will investigate whether or not plants respire. To do this, they will observe whether or not bubbles of gas appear when a leaf is put in water.</p> <p><b>Links to Prior Learning</b> The children will have already learned about plants in the last half term.</p>
3/4	<p><u>Can I change the pitch of a sound?</u></p> <p><b>Unit: Sound</b> The children will learn that sound is made from vibrations. They will use scientific equipment to record decibels.</p> <p><b>Type of Investigation: Asking Questions</b> The children will ask questions about how and why sounds change.</p> <p><b>Links to Prior Learning</b> The children will extend their investigation skills as they begin to use scientific equipment during their investigation. This is the first time that the children have learned about sound.</p>	<p><u>Do all solids melt at the same temperature?</u></p> <p><b>Unit: States of Matter</b> This half term, the children will learn about the differences between solids, liquids and gases. They will link this learning to the water cycle.</p> <p><b>Type of Investigation: Comparative and Fair Tests</b> The children will investigate the temperature at which different solids melt, using scientific equipment to take measurements.</p> <p><b>Links to Prior Learning</b> The children investigated how solids can change shape in KS1. They also investigated the movement of liquids. In design and technology, children in Y3/4 will learn how to melt chocolate during a food technology unit of work. The children will also have a full unit studying the water cycle in geography in Y3/4 this half term.</p>	<p><u>Are all materials conductors of electricity?</u></p> <p><b>Unit: Electricity</b> The children will learn how to construct a series circuit. They will learn about conductors and insulators and they will also learn how a switch works.</p> <p><b>Type of Investigation: Grouping &amp; Classifying</b> The children will investigate different conductors of electricity. Whilst exploring the conductivity of different materials, they will revise how to group and classify, grouping materials based on the outcomes of their investigation.</p> <p><b>Links to Prior Learning</b> This is the children's first time learning about electricity. They will have learned how to group and classify when learning about animals during KS1.</p>	<p><u>Are my teeth invincible?</u></p> <p><b>Unit: Animals Including Humans</b> The children will learn about different types of teeth during this half term. They will also learn about parts of the digestive system and their functions.</p> <p><b>Type of Investigation: Comparative &amp; Fair Tests</b> When learning about teeth, the children will use eggs to investigate how tooth enamel can be affected by different types of drink. The children will set up their own investigation.</p> <p><b>Links to Prior Learning</b> The children in KS1 learn about the need for exercise, a balanced diet and good hygiene to stay healthy. This is the first time that the children will have learned about teeth.</p>	<p><u>Do plants prefer our playground or East Park?</u></p> <p><b>Unit: Living Things</b> The children will learn about different vertebrates and invertebrates. They will also learn how plants can be grouped.</p> <p><b>Type of Investigation: Asking Questions</b> The children will ask questions about different plants. They will then investigate plants on the playground and plants in East Park, collecting results to answer their questions.</p> <p><b>Links to Prior Learning</b> The children grouped and classified animals in KS1. They have also learned about the names of parts some common plants in KS1. The children will be able to revise the names of these plants when they observe them in East Park.</p>	<p><u>Can a skull teach me about an animal's diet?</u></p> <p><b>Unit: Animals Including Humans</b> The children will learn about food chains.</p> <p><b>Type of Investigation: Research</b> The children will use research to study different animal skills to review their teeth and jaw shape. They will use this research to investigate the diets of different animals.</p> <p><b>Links to Prior Learning</b> The children learned about different types of teeth earlier this year. This half term, the children will apply their knowledge of types of teeth during their investigation. In KS1, the children will have learned the difference between a carnivore and herbivore, and they will have practised constructing a simple food chain.</p>
5/6	<p><u>How does a change in voltage affect my circuit?</u></p> <p><b>Unit: Electricity</b> The children will learn about different components in electric circuits. They will draw the circuits using symbols.</p> <p><b>Type of Investigation: Comparative and Fair Tests</b> The children will investigate buzzers and lights within a circuit.</p> <p><b>Links to Prior Learning</b> In Y3/4, the children learned how to make a simple series circuit. This unit extends their learning, looking at a range of components and testing how bulbs and buzzers work.</p>	<p><u>Can I make a rainbow from a prism?</u></p> <p><b>Unit: Light</b> The children will learn how light travels.</p> <p><b>Type of Investigation: Asking Questions</b> The children will ask questions and use their investigative skills to explore light. The children will explore what happens when you shine a light through a prism.</p> <p><b>Links to Prior Learning</b> In Y3/4, the children learned that light is reflected from surfaces. They also learned that dark is the absence of light. The children explored shadows in KS1 and Y3/4.</p>	<p><u>Is there a relationship between my circulatory system and exercise?</u></p> <p><b>Unit: Animals Including Humans</b> The children will learn about the circulatory system during this half term.</p> <p><b>Type of Investigation: Noticing Patterns</b> The children will investigate the relationship between exercise and the circulatory system, setting up their own investigation, taking and recording results, and forming causal relationships.</p> <p><b>Links to Prior Learning:</b> Across KS1 and LKS2, the children will have learned about the importance of exercise, a balanced diet and good hygiene.</p>	<p><u>How can rocks teach me about animals and plants?</u></p> <p><b>Unit: Evolution and Inheritance</b> During this half term, the children will look at how fossils provide information about living things that inhabited the Earth millions of years ago. They will learn how different plants and animals have evolved and/or adapted over time.</p> <p><b>Type of Investigation: Research</b> The children will research findings from different fossils to investigate theories of evolution.</p> <p><b>Links to Prior Learning</b> The children will have been introduced to fossils in Y3/4. This is the first time that the children will have learned about evolution, adaptation and inheritance.</p>	<p><u>Are all plants the same?</u></p> <p><b>Unit: Living Things</b> The children will learn more about grouping and classifying animals during this unit of work. They will discuss the reasons why scientists use grouping and classifying.</p> <p><b>Type of Investigation: Grouping &amp; Classifying</b> In this investigation, the children will study different types of plants. They will create their own classification system to group the plants that they study.</p> <p><b>Links to Prior Learning</b> The children have had experience of grouping and classifying animals, rocks and materials. In Y5/6, their scientific investigation skills are extended as they choose their own criteria for grouping and classification.</p>	<p><u>Question to be chosen by the children.</u></p> <p><b>Unit: Animals Including Humans</b> The children will continue to investigate the circulatory system during this unit of work. They will continue to explore the effect of diet, exercise, drugs and lifestyle on our bodies.</p> <p><b>Type of Investigation: Asking Questions</b> The children will choose their own questions to investigate. They will plan and conduct their own investigation to try to answer their questions.</p> <p><b>Links to Prior Learning</b> Earlier in the year, the children will have learned about the circulatory system and how it is affected by exercise. During this unit, the children will develop independent investigation skills.</p>