

## Science Curriculum



<b>Cycle B</b>	<b>Opal Reception</b>	<p><b>Me and my Community</b></p> <p>This project teaches children about their immediate environment using knowledge from observation, discussion, stories, non-fiction texts and maps. It discusses simple changes as they have grown from being a baby. It supports them to know ways to care for their local environment.</p> <p><b>Exploring Autumn</b></p> <p>This project teaches children about the natural changes that happen during the season of autumn, including how the weather changes, why trees lose their leaves and how wild animals prepare for winter.</p>	<p><b>Once upon a time</b></p> <p>This project teaches children to explore the natural world around them, making observations and drawing pictures of animals and plants. It supports them to understand some important processes and changes in the natural world around them, including the seasons and changing states of matter. They explore how to sort and group materials and resources and talk about how they are similar or different.</p>	<p><b>Starry Night</b></p> <p>This project explores the differences in the world at night compared to during the day. It teaches children about the importance of a good night's sleep, and helps them to discover what is happening in the world while they are sleeping, including finding out about nocturnal animals.</p> <p><b>Winter Wonderland</b></p> <p>This project teaches children about the changes that happen during winter, including the types of weather associated with winter. It also explores places that have snow all year round and the types of animals that live there.</p>	<p><b>Dangerous Dinosaurs</b></p> <p>This exciting project teaches children about the different animals that roamed Earth millions of years ago and how they are related to animals that live on Earth today.</p> <p><b>Puddles and Rainbows</b></p> <p>This mini project teaches children about the weather that happens during spring and allows them to explore natural phenomena, including rainbows. It supports them to explore colour in the natural world.</p>	<p><b>Sunshine and Sunflowers</b></p> <p>This seasonal project provides opportunities for outdoor learning and teaches children how to care for the plants and animals in their local environment and how to stay safe in the sun.</p> <p><b>Shadows and Reflections</b></p> <p>This project teaches children about natural phenomena, including shadows, reflections and echoes. They explore how shadows are formed and how they can change.</p>	<p><b>Big Wide World</b></p> <p>This project teaches children about the global community to which they belong and explores how living things, communities and climates differ around the world.</p> <p><b>Splash</b></p> <p>This project teaches children about water, including floating and sinking, freezing and melting, and why it is important for living things to stay hydrated.</p>
	<b>Opal Y1</b>	<p><b>Everyday Materials</b></p> <p>This project teaches children that objects are made from materials. They identify a range of everyday materials and their sources. Children investigate the properties of materials and begin to recognise that a material's properties define its use.</p>	<p><b>Human Senses</b></p> <p>This project teaches children that humans are a type of animal known as a mammal. They name and count body parts and identify similarities and differences. They learn about the senses, the body parts associated with each sense and their role in keeping us safe.</p>	<p><b>Seasonal Changes</b></p> <p>This project teaches children about the seasons, seasonal changes and typical seasonal weather and events. They learn about measuring the weather and the role of a meteorologist. Children begin to learn about the science of day and night and recognise that the seasons have varying day lengths in the UK.</p>		<p><b>Human Senses</b></p> <p>This project teaches children that humans are a type of animal known as a mammal. They name and count body parts and identify similarities and differences. They learn about the senses, the body parts associated with each sense and their role in keeping us safe.</p>	<p><b>Animal Parts</b></p> <p>This project teaches children about animals, including fish, amphibians, reptiles, birds, mammals and invertebrates. They identify and describe their common structures, diets, and how animals should be cared for.</p>
	<b>Emerald</b>	<p><b>Human Survival</b></p> <p>This project teaches children about the basic needs of humans for survival, including the importance of exercise, nutrition and good hygiene. They learn how human offspring grow and change over time into adulthood.</p>	<p><b>Habitats</b></p> <p>This project teaches children about habitats and what a habitat needs to provide. They explore local habitats to identify and name living things and begin to understand how they depend on one another for food and shelter.</p>	<p><b>Uses of materials</b></p> <p>This project teaches children about the uses of everyday materials and how materials' properties make them suitable or unsuitable for specific purposes. They begin to explore how materials can be changed.</p>	<p><b>Plant Survival</b></p> <p>This project teaches children about the growth of plants from seeds and bulbs. They observe the growth of plants firsthand, recording changes over time and identifying what plants need to grow and stay healthy.</p>	<p><b>Skeletal and Muscular Systems</b></p> <p>This project teaches children about the importance of nutrition for humans and other animals. They learn about the role of a skeleton and muscles and identify animals with different types of skeleton.</p>	

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	<b>Sapphire</b>	<b>Digestive System</b> This project teaches children about the human digestive system. They explore the main parts, starting with the mouth and teeth, identifying teeth types and their functions. They link this learning to animals' diets and construct food chains to show the flow of energy.	<b>Sound</b> This project teaches children about sound, how sound is made and how sound travels as vibrations through a medium to the ear. They learn about pitch and volume and find out how both can be changed.	<b>States of Matter</b> This project teaches children about solids, liquids and gases and their characteristic properties. They observe how materials change state as they are heated and cooled, and learn key terminology associated with these processes.	<b>Grouping &amp; Clarifying</b> This project teaches children about grouping living things, known as classification. They study the animal and plant kingdoms and use and create classification keys to identify living things.	<b>Electrical Circuits and Conductors</b> This project teaches children about electrical appliances and safety. They construct simple series circuits and name their parts and functions, including switches, wires and cells. They investigate electrical conductors and insulators and identify common features of conductors. It also teaches children about programmable devices.
	<b>Ruby</b>	<b>Light Theory</b> This project teaches children about the way that light behaves, travelling in straight lines from a source or reflector, into the eye. They explore how we see light and colours, and phenomena associated with light, including shadows, reflections and refraction.	<b>Evolution and Inheritance</b> This project teaches children how living things on Earth have changed over time and how fossils provide evidence for this. They learn how characteristics are passed from parents to their offspring and how variation in offspring can affect their survival, with changes (adaptations) possibly leading to the evolution of a species.	<b>Electrical Circuits and Components</b> This project teaches children about electrical circuits, their components and how they function. They recognise how the voltage of cells affects the output of a circuit and record circuits using standard symbols. It also teaches children about programmable devices, sensors and monitoring. They combine their learning to design and make programmable home devices.	<b>Circulatory System</b> This project teaches children about the transport role of the human circulatory system, its main parts and primary functions. They learn about healthy lifestyle choices and the effects of harmful substances on the body.	

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<b>Cycle A</b>	<b>Opal Reception</b>	<p><b>Me and my Community</b></p> <p>This project teaches children about their immediate environment using knowledge from observation, discussion, stories, non-fiction texts and maps. It discusses simple changes as they have grown from being a baby. It supports them to know ways to care for their local environment.</p> <p><b>Exploring Autumn</b></p> <p>This project teaches children about the natural changes that happen during the season of autumn, including how the weather changes, why trees lose their leaves and how wild animals prepare for winter.</p>	<p><b>Once upon a time</b></p> <p>This project teaches children to explore the natural world around them, making observations and drawing pictures of animals and plants. It supports them to understand some important processes and changes in the natural world around them, including the seasons and changing states of matter. They explore how to sort and group materials and resources and talk about how they are similar or different.</p>	<p><b>Starry Night</b></p> <p>This project explores the differences in the world at night compared to during the day. It teaches children about the importance of a good night's sleep, and helps them to discover what is happening in the world while they are sleeping, including finding out about nocturnal animals.</p> <p><b>Winter Wonderland</b></p> <p>This project teaches children about the changes that happen during winter, including the types of weather associated with winter. It also explores places that have snow all year round and the types of animals that live there.</p>	<p><b>Dangerous Dinosaurs</b></p> <p>This exciting project teaches children about the different animals that roamed Earth millions of years ago and how they are related to animals that live on Earth today.</p> <p><b>Puddles and Rainbows</b></p> <p>This mini project teaches children about the weather that happens during spring and allows them to explore natural phenomena, including rainbows. It supports them to explore colour in the natural world.</p>	<p><b>Sunshine and Sunflowers</b></p> <p>This seasonal project provides opportunities for outdoor learning and teaches children how to care for the plants and animals in their local environment and how to stay safe in the sun.</p> <p><b>Shadows and Reflections</b></p> <p>This project teaches children about natural phenomena, including shadows, reflections and echoes. They explore how shadows are formed and how they can change.</p>	<p><b>Big Wide World</b></p> <p>This project teaches children about the global community to which they belong and explores how living things, communities and climates differ around the world.</p> <p><b>Splash</b></p> <p>This project teaches children about water, including floating and sinking, freezing and melting, and why it is important for living things to stay hydrated.</p>
	<b>Opal</b>	<p><b>Everyday Materials</b></p> <p>This project teaches children that objects are made from materials. They identify a range of everyday materials and their sources. Children investigate the properties of materials and begin to recognise that a material's properties define its use.</p>	<p><b>Human Senses</b></p> <p>This project teaches children that humans are a type of animal known as a mammal. They name and count body parts and identify similarities and differences. They learn about the senses, the body parts associated with each sense and their role in keeping us safe.</p>	<p style="text-align: center;"><b>Seasonal Changes</b></p> <p>This project teaches children about the seasons, seasonal changes and typical seasonal weather and events. They learn about measuring the weather and the role of a meteorologist. Children begin to learn about the science of day and night and recognise that the seasons have varying day lengths in the UK.</p>		<p><b>Human Senses</b></p> <p>This project teaches children that humans are a type of animal known as a mammal. They name and count body parts and identify similarities and differences. They learn about the senses, the body parts associated with each sense and their role in keeping us safe.</p>	<p><b>Animal Parts</b></p> <p>This project teaches children about animals, including fish, amphibians, reptiles, birds, mammals and invertebrates. They identify and describe their common structures, diets, and how animals should be cared for.</p>
	<b>Emerald</b>	<p><b>Animal Survival</b></p> <p>This project teaches children about growth in animals by exploring the life cycles of some familiar animals. They build on learning about the survival of humans by identifying the basic needs of animals for survival, including food, water, air and shelter.</p>	<p style="text-align: center;"><b>Forces and Magnets</b></p> <p>This project teaches children about contact and non-contact forces, including friction and magnetism. They investigate frictional and magnetic forces, and identify parts of a magnet and magnetic materials.</p>		<p><b>Plant Nutrition and Reproduction</b></p> <p>This project teaches children about the requirements of plants for growth and survival. They describe the parts of flowering plants and relate structure to function, including the roots and stem for transporting water, leaves for making food and the flower for reproduction.</p>	<p><b>Light and Shadows</b></p> <p>This project teaches children about light and dark. They investigate the phenomena of reflections and shadows, looking for patterns in collected data. The risks associated with the Sun are also explored.</p>	

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	<b>Ruby</b>	<b>Light Theory</b> This project teaches children about the way that light behaves, travelling in straight lines from a source or reflector, into the eye. They explore how we see light and colours, and phenomena associated with light, including shadows, reflections and refraction.	<b>Evolution and Inheritance</b> This project teaches children how living things on Earth have changed over time and how fossils provide evidence for this. They learn how characteristics are passed from parents to their offspring and how variation in offspring can affect their survival, with changes (adaptations) possibly leading to the evolution of a species.	<b>Electrical Circuits and Components</b> This project teaches children about electrical circuits, their components and how they function. They recognise how the voltage of cells affects the output of a circuit and record circuits using standard symbols. It also teaches children about programmable devices, sensors and monitoring. They combine their learning to design and make programmable home devices.	<b>Circulatory System</b> This project teaches children about the transport role of the human circulatory system, its main parts and primary functions. They learn about healthy lifestyle choices and the effects of harmful substances on the body.