

## SCIENCE

		Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Nursery (EYFS)	Topic	My local area	Our Community	Family and Community	Wider World	Wider World	Wider World
	Enquiry Question	I wonder who I will become.	I wonder what is important to my community.	I wonder who I will become.	I wonder who shares our home.	I wonder how the world needs me.	I wonder who shares our world.
	Key Knowledge and skills	<ul style="list-style-type: none"> <li>To learn the 5 senses.</li> <li>To explore the provision and school environment.</li> <li>To embed the skill of how to go to the toilet.</li> <li>To understand how to wash their hands.</li> </ul>	<ul style="list-style-type: none"> <li>To notice seasonal autumnal changes.</li> <li>To experience what light and dark is.</li> <li>To understand what makes daytime and nighttime.</li> </ul>	<ul style="list-style-type: none"> <li>To explore how things work (floating and sinking – Noah’s Ark).</li> </ul>	<ul style="list-style-type: none"> <li>To care for the natural environment.</li> <li>To observe seasonal spring changes.</li> <li>To explore habitats of animals.</li> <li>To understand animal lifecycles.</li> </ul>	<ul style="list-style-type: none"> <li>To learn plant lifecycles.</li> <li>To plant seeds and care for growing plants.</li> <li>To observe growth and decay.</li> <li>To make simple predictions.</li> </ul>	<ul style="list-style-type: none"> <li>To explore habitats of ocean animals.</li> <li>To care for the natural environment.</li> </ul>
	End Point	Explore the natural world around them, making observations and drawing pictures of animals and plants. 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. Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.					
Reception (EYFS)	Topic	My local area	Our Community	Family and Community	Wider World	Wider World	Wider World
	Enquiry Question	I wonder who I will become.	I wonder what is important to my community.	I wonder who I will become.	I wonder who shares our home.	I wonder how the world needs me.	I wonder who shares our world.
	Key Knowledge and skills	<ul style="list-style-type: none"> <li>To explore the school setting and the environment.</li> <li>To understand the human lifecycle.</li> <li>To identify key body parts and bones.</li> <li>To explore what body parts we use for certain activities and why.</li> </ul>	<ul style="list-style-type: none"> <li>To observe and compare on seasonal autumn changes.</li> <li>To observe changes of state: ice and baking.</li> </ul>	<ul style="list-style-type: none"> <li>To observe and comment on the effect of magnets.</li> <li>To understand what electricity is and how it affects our lives.</li> <li>To describe the season and weather associated with it.</li> <li>To observe how animals behave differently in different seasons.</li> </ul>	<ul style="list-style-type: none"> <li>To observe and compare seasonal spring changes.</li> <li>To understand a variety of animal Lifecycles.</li> <li>To understand that different animals have different habitats and why.</li> <li>To identify animals and matching them to their habitat.</li> <li>To classify animals.</li> </ul>	<ul style="list-style-type: none"> <li>To investigate plant lifecycles.</li> <li>To conduct a plant investigation.</li> <li>To compare how food is grown.</li> </ul>	<ul style="list-style-type: none"> <li>To observe and compare objects that float and sink and understand why.</li> <li>To classify animals.</li> <li>To explore adaptation of animals (land and sea).</li> </ul>
	End Point	Explore the natural world around them, making observations and drawing pictures of animals and plants. 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. Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.					
KS1 Cycle A	Topic	Humans	Seasonal Changes (Autumn/Winter)	Animals	Materials	Living things and their Habitats	Plants
	Enquiry Question	Which sense is the most useful?	How might we know what season it is?	What is most important for animals to survive?	What is the best material to create a floating mode of transport?	Why don’t polar bears live in the desert?	Why is it useful to know which plants are in our local area?
	Key Knowledge and skills	<ul style="list-style-type: none"> <li>To identify, name, <b>draw</b> and label the basic parts of the human body.</li> <li>To explore the five senses and explain which part of the human body is associated with each sense, <b>using observational skills to ask and answer questions about these.</b></li> <li>To explore the different stages of a human lifecycle, <b>researching and</b> explaining the specific changes that occur as humans move through these stages.</li> </ul>	<ul style="list-style-type: none"> <li>To understand that the UK has four seasons and name these.</li> <li>To understand when the UK has autumn and winter, <b>naming the months associated with these seasons</b>, and use observational skills to observe autumnal changes.</li> <li>To explore, <b>research and explain</b> changes that occur during winter.</li> <li>To consider, <b>research and explain</b> how humans and animals adapt to respond to the changes that occur during autumn and winter.</li> <li>To research <b>and explain</b> how day length varies as seasons change, focusing on autumn and winter. <b>Year 2 Pupils will make comparisons between day length in different seasons.</b></li> </ul>	<ul style="list-style-type: none"> <li>To understand and explain that animals need water, food and air (oxygen) to survive, <b>making comparisons to the needs of humans.</b></li> <li>To understand and explain the differing needs of some animals <b>and research how their needs are met within specific habitats.</b></li> <li>To identify and sort a variety of animals that are carnivores, herbivores and omnivores.</li> </ul>	<ul style="list-style-type: none"> <li>To identify and name a variety of everyday materials, describing their physical properties, <b>such as being transparent, rigid, flexible, and opaque</b>, and compare materials based on these.</li> <li>To distinguish between an object and the material from which it is made, <b>considering which materials are natural and which are man-made.</b></li> <li>To identify and compare the suitability of a variety of everyday materials for uses, <b>justifying their choices.</b></li> </ul>	<ul style="list-style-type: none"> <li>To identify and name a variety of plants and animals in their habitats, including microhabitats.</li> <li>To develop knowledge of the different habitats which various animals need to survive and ask questions relating to living things and their habitats.</li> <li>To explore <b>and explain</b> why different animals suit their habitats, considering prior knowledge of what animals need to survive <b>and prior knowledge of food chains.</b></li> <li>To describe how different habitats provide for the basic needs of different kinds of animals and plants and <b>how they depend upon each other.</b></li> </ul>	<ul style="list-style-type: none"> <li>To identify, name and <b>describe the roles of</b> different parts of plants, including trees, focusing on the roles of the roots, stem, leaves, and petals <b>and compare the key similarities between trees and small flowering plants.</b></li> <li>To name and identify some common wild and garden plants such as daisies, roses, daffodils, and sunflowers and identify some of these in the school environment.</li> <li>To identify <b>and explain</b> differences between deciduous and evergreen trees and begin to identify examples of these, linking with knowledge of seasons.</li> </ul>
	End Point	To name body parts, understanding and explaining what they help us to do.  To understand and explain some of the changes which occur as humans pass between stages in the human lifecycle.	To understand and explain the changes which occur in the world around us during autumn and winter and how these changes affect humans, animals, and plants.	To understand and explain the basic needs of animals for survival, describing how these needs differ and how they are met.	To understand and explain the properties of different materials, considering which materials are best suited for specific purposes based on these.	To understand and explain the different habitats of various plants and animals and explain ways in which organisms are adapted to suit their specific habitats.	To understand and explain which plants, including trees, may be found in our local area and how these can be identified.  To name and begin to describe the roles of the basic parts of plants.

## SCIENCE

	Topic	Humans	Animals	Living Things and their Habitats	Materials	Plants	Seasonal Changes (Spring/Summer)
KS1 Cycle B	Enquiry Question	Who's the healthiest person in the world?	Are all animals the same?	What do animals eat?	Can a box be made from any material?	How do plants grow from a seed or bulb?	How might we know what season it is?
	Key Knowledge and skills	<ul style="list-style-type: none"> <li>To understand and explain that humans need water, food, and air (oxygen) to survive, <b>making comparisons to the needs of animals</b>.</li> <li>To understand and describe the importance of exercise for humans.</li> <li>To observe <b>and research</b> the changes in their bodies after <b>different types of</b> exercise.</li> <li>To identify and classify different foods and discuss the importance of eating the right amounts of different types of food.</li> <li>To discuss <b>and explain</b> the importance of hygiene <b>and consider what we can do to be hygienic</b>.</li> </ul>	<ul style="list-style-type: none"> <li>To identify and name a variety of common animals including fish, amphibians, reptiles, birds, and mammals.</li> <li>To explore <b>and research</b> characteristics of different groups of animals and classify animals based on their characteristics.</li> <li>To explore the offspring of different animals, identifying some similarities and differences in lifecycles, <b>describing how animals change as they grow</b>.</li> </ul>	<ul style="list-style-type: none"> <li>To describe what different animals eat, <b>using prior knowledge of basic needs of animals and carnivores, herbivores, and omnivores to explain how this varies</b>.</li> <li>To identify and name different sources of food for various animals.</li> <li>To explore <b>and explain</b> the feeding relationships between living things using the idea of a simple food chain, <b>considering where animals get their food from in different habitats</b>.</li> <li>To explore, compare <b>and explain the differences</b> between things that are living, dead and have never been alive.</li> </ul>	<ul style="list-style-type: none"> <li>To identify and name a variety of everyday materials, describing their physical properties, <b>such as being transparent, rigid, flexible, and opaque</b>, and compare materials based on these.</li> <li>To distinguish between an object and the material from which it is made, <b>considering which materials are natural and which are man-made</b>.</li> <li>To identify and compare the suitability of a variety of everyday materials for uses, <b>justifying their choices</b>.</li> <li>To explore how some materials can change their shape by being squashed, bent, twisted or stretched <b>and explain when this may be useful</b>.</li> </ul>	<ul style="list-style-type: none"> <li>To observe the growth of seeds and bulbs into mature plants, describing this process, <b>using knowledge of parts of plants to describe in detail</b>.</li> <li>To consider and explore what plants need to grow well and remain healthy.</li> <li>To explore the impact of variables such as water, light, and a suitable temperature on the growth of plants.</li> <li>To consider <b>and begin to research</b> ways in which different plants require different conditions to grow healthily.</li> </ul>	<ul style="list-style-type: none"> <li>To understand that the UK has four seasons and name these.</li> <li>To understand when the UK has spring and summer, <b>naming the months associated with these seasons</b>, and use observational skills to observe signs of spring/summer.</li> <li>To explore, <b>research and explain</b> changes that occur during spring and summer.</li> <li>To consider, <b>research and explain</b> how humans and animals adapt to respond to the changes that occur during spring and summer.</li> <li>To research <b>and explain</b> how day length varies as seasons change, focusing on spring and summer. <b>Year 2 Pupils will make comparisons between day length in different seasons</b>.</li> </ul>
	End Point	To understand and explain the basic needs of humans for survival and what humans can do to keep their bodies healthy.	To understand and explain the different ways in which animals can be classified, based on their characteristics.  To understand and explain how different animals change as they grow.	To understand and explain what different animals eat and how living things are linked through feeding relationships.  To understand and explain which things are living, which are dead, and which were never alive.	To understand and explain the properties of different materials, considering which materials are best suited for specific purposes based on these.	To understand and explain how plants grow from seeds and bulbs into healthy, mature plants.	To understand and explain the changes which occur in the world around us during spring and summer and how these changes affect humans, animals, and plants.
KS2 Cycle A	Topic	<b>Animals including Humans (Nutrition and food chains)</b>	<b>Electricity</b>	<b>Plants</b>	<b>Plants</b>	<b>Sound</b>	<b>Living Things</b>
	Enquiry Question	What might happen if there were no plants?	If we cannot see electricity, how do we know it is there?	Why are bees important to the survival of other living things?	Why are bees important to the survival of other living things?	How do we hear sound?	How can the actions of humans affect living things?
	Key Knowledge and skills	<ul style="list-style-type: none"> <li>To understand that living things need food to grow and be healthy.</li> <li>To identify and describe the functions of the parts of the digestive system including mouth, tongue, teeth, oesophagus, stomach and small and large intestine.</li> <li>To <b>research and explain</b> differences, similarities or changes related to simple scientific ideas and processes such as: animals, including humans, require food, water, and air to stay alive.</li> <li>To identify and explain the requirements of a balanced diet for humans.</li> <li>To construct <b>and interpret</b> a variety of food chains, identifying producers, predators, and prey.</li> </ul>	<ul style="list-style-type: none"> <li>To identify common appliances that run on electricity, asking relevant questions about how everyday appliances rely on electricity to function <b>and using different types of scientific enquiries to justify explanations</b>.</li> <li>To construct a simple series circuit (identifying and naming its basic parts, including cells, wires, bulbs, switches, and buzzers) exploring the effects of variations in circuits.</li> <li>To <b>make predictions then</b> investigate and explain whether a lamp will light in a variety of circuits.</li> <li>To identify the difference between conductors and insulators, <b>recognising that not all metals are conductors of electricity</b>.</li> <li>To understand and investigate how electricity can be generated sustainably through different means, such as solar power and wind.</li> </ul>	<ul style="list-style-type: none"> <li>To explore <b>and explain</b> the requirements of plants for life and growth (water, light, food and nutrients from the soil, gases from the air and space on the ground) and how these vary from plant to plant.</li> <li>To identify and describe the functions of the parts of a flowering plant including: the flower, stem, leaves, and roots.</li> <li>To investigate <b>and explain</b> the way in which water is transported within <b>different</b> plants.</li> <li>To explore how plants reproduce through the processes of pollination, seed formation and seed dispersal <b>identifying the parts of the plant required for these processes</b>.</li> <li>To recognise and explain the five main stages of a plant lifecycle: germination, growth, pollination, fertilisation, and dispersal.</li> <li>To explore <b>and classify a range of common plants according to certain criteria such as environment, size, and climate</b>.</li> </ul>	<ul style="list-style-type: none"> <li>To explore <b>and explain</b> the requirements of plants for life and growth (water, light, food and nutrients from the soil, gases from the air and space on the ground) and how these vary from plant to plant.</li> <li>To identify and describe the functions of the parts of a flowering plant including: the flower, stem, leaves, and roots.</li> <li>To investigate <b>and explain</b> the way in which water is transported within <b>different</b> plants.</li> <li>To explore how plants reproduce through the processes of pollination, seed formation and seed dispersal <b>identifying the parts of the plant required for these processes</b>.</li> <li>To recognise and explain the five main stages of a plant lifecycle: germination, growth, pollination, fertilisation, and dispersal.</li> <li>To explore <b>and classify a range of common plants according to certain criteria such as environment, size, and climate</b>.</li> </ul>	<ul style="list-style-type: none"> <li>To explore <b>and explain</b> identify how sounds are created, associating some of them with something vibrating.</li> <li>To find patterns in the sounds that are made by different objects, <b>investigating how sound travels and how it changes through different materials</b>.</li> <li>To <b>work collaboratively to investigate how</b> the pitch of a sound is impacted by the features of the object that produced it.</li> <li>To find patterns between the volume of a sound, the strength of the vibrations that produced it, and the distance from it.</li> </ul>	<ul style="list-style-type: none"> <li>To explore and use classification keys to help identify, name, and sort a variety of living things in the local and wider environment.</li> <li>To gather, record <b>and present</b> data to group living things, based on their characteristics.</li> <li>To recognise <b>different ways in which</b> environments can change and <b>explain how</b> this can sometimes pose dangers to living things, yet sometimes be helpful.</li> </ul>
	End Point	To understand and explain ways in which animals, including humans get the necessary nutrition from what they eat, using knowledge of food chains.	To understand and explain ways in which electricity is used to power everyday appliances and explain the workings of a simple series electrical circuit.	Pupils will have prior knowledge of the parts of plants.  Pupils will understand what plants need to grow	Pupils will have prior knowledge of the parts of plants.  Pupils will understand what plants need to grow	To understand and explain how sound is produced and how the human body is designed to hear sound.	To understand and explain how living things can be grouped based on their characteristics and to explain the impact of changes in environments on living things.

# SCIENCE

				healthily and experience of observing a plant grow from a seed.	healthily and experience of observing a plant grow from a seed.		
	Topic	Rocks	States of Matter	Forces and Magnets	Forces and Magnets	Light	Animals including Humans
	Enquiry Question	What can rocks tell us?	How do states of matter matter?	How do magnets work?	How do magnets work?	How does light affect what we see?	How do our bodies move and function?
	Key Knowledge and skills	<ul style="list-style-type: none"> <li>To <b>identify and understand the difference</b> between different rocks.</li> <li>To group different kinds of rocks based on their appearance and physical properties, <b>including using the Mohs Hardness Scale to investigate</b> minerals and classify different rocks.</li> <li>To use a hand lens or microscope to help identify and classify rocks.</li> <li>To use scientific vocabulary to describe how fossils are formed <b>and how these formations vary</b>.</li> <li>To <b>evaluate and discuss ways to improve scientific experiments and use the evaluations to draw further questions</b>.</li> <li>To understand that soils are made from rocks and organic matter.</li> </ul>	<ul style="list-style-type: none"> <li>To compare and classify a variety of different materials and group materials together, according to whether they are solids, liquids, or gases.</li> <li>To 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).</li> <li>To identify the part played by evaporation and condensation in the water cycle and <b>design and complete</b> an investigation associating the rate of evaporation with temperature.</li> </ul>	<ul style="list-style-type: none"> <li>To observe and compare how things move on different surfaces, investigating the effect of friction.</li> <li>To explore <b>and explain how</b> some forces need contact between two objects, but magnetic forces can act at a distance.</li> <li>To <b>design and</b> complete an experiment into the impact different materials have on a moving object.</li> <li>To observe <b>and investigate</b> how magnets attract or repel each other and attract some materials and not others.</li> <li>To compare and group together a variety of everyday materials based on whether they are attracted to a magnet, <b>making predictions and reflecting on the outcomes</b>.</li> <li>To describe magnets as having two poles (<b>polarity</b>) and predict whether two magnets will attract or repel each other, depending on which poles are facing.</li> </ul>	<ul style="list-style-type: none"> <li>To observe and compare how things move on different surfaces, investigating the effect of friction.</li> <li>To explore <b>and explain how</b> some forces need contact between two objects, but magnetic forces can act at a distance.</li> <li>To <b>design and</b> complete an experiment into the impact different materials have on a moving object.</li> <li>To observe <b>and investigate</b> how magnets attract or repel each other and attract some materials and not others.</li> <li>To compare and group together a variety of everyday materials based on whether they are attracted to a magnet, <b>making predictions and reflecting on the outcomes</b>.</li> <li>To describe magnets as having two poles (<b>polarity</b>) and predict whether two magnets will attract or repel each other, depending on which poles are facing.</li> </ul>	<ul style="list-style-type: none"> <li>To recognise the importance of light, understanding that light is needed to see things and that dark is the absence of light, <b>explaining how humans see light</b>.</li> <li>To understand that light is reflected from surfaces.</li> <li>To discover which surfaces, reflect light <b>and explore the use of mirrors to reflect light</b>.</li> <li>To understand <b>and explain</b> the impact of the light from the sun and explain how to protect their eyes <b>and skin</b>.</li> <li>To explore how shadows are created, recognising that shadows are formed when the light from a light source is blocked by an opaque object.</li> <li>To explore and find patterns in the way that the size of shadows change, <b>explaining how any why this occurs</b>.</li> </ul>	<ul style="list-style-type: none"> <li>To describe and investigate the digestive system in humans, <b>explaining how this process works</b>.</li> <li>To identify the different types of teeth in humans and their simple functions, <b>comparing these with the teeth of different animals</b>.</li> <li>To describe and investigate the roles of the skeleton, muscles, tendons, and joints and how they support, protect and allow the body to move, <b>considering and exploring what may happen if humans did not have skeletons</b>.</li> <li>To <b>understand the difference between muscular and skeletal and describe how muscular and skeletal systems work together to create movement</b>.</li> <li>To understand the differences between vertebrates and invertebrates <b>and describe the different characteristics of both</b>.</li> </ul>
LKS2 Cycle B	End Point	To understand that rocks come in three main types and investigate how they can be grouped by their properties.  To understand how soil is formed and investigate its differing permeability.  To understand how fossils are formed and how palaeontologists can use them.	To understand that materials exist in three main states of matter (solid, liquid or gas) and identify that these can be grouped based on their properties.  To investigate materials, including water, as they change state and understand how water changes state during the water cycle.	To understand and explain ways in which forces affect the movement of objects on different surfaces.  To understand and explain to concept of magnetism and magnets can attract, repel, or have no effect on different materials.	To understand and explain ways in which forces affect the movement of objects on different surfaces.  To understand and explain to concept of magnetism and magnets can attract, repel, or have no effect on different materials.	To understand and explain how light impacts our ability to see and how humans see light.  To understand and explain how different surfaces reflect light and how shadows are formed.	To understand and explain a variety of biological systems in animals, including humans, including digestion, muscular and skeletal systems.  To understand and explain the functions of different teeth and consider how these differ in various animals.
	Topic	Do we need the sun to tell the time?	How does light travel?	How do plants and animals reproduce?	How do plants and animals reproduce?	Are humans' animals?	How can we make forces work for us?
UKS2 Cycle A	Enquiry Question	Understanding the uniqueness of the Earth and the vastness of space gives us perspective and awe.	Waves radiate information. Understanding waves helps us to communicate.	Genetic information is passed from each generation to the next; this information and the environment affect the features, growth, and development of organisms.	Genetic information is passed from each generation to the next; this information and the environment affect the features, growth, and development of organisms.	Genetic information is passed from each generation to the next; this information and the environment affect the features, growth and development of organisms.	Forces make things change. Understanding forces helps us to predict and control physical changes.



## SCIENCE

	Key Knowledge and skills End Point	<ul style="list-style-type: none"> <li>To engage with <b>and question</b> scientific theories about the Earth and space within our solar system.</li> <li>To formulate questions and <b>research and explain</b> the shape, movement and composition of astronomical bodies including the sun, planets, and moons.</li> <li>To understand and explain how planetary rotation results in day and night and the apparent movement of the sun across the sky.</li> </ul>	<ul style="list-style-type: none"> <li>To <b>design</b>, plan, and conduct experiments into the way that light travels in straight lines directly from a light source (or reflected surface) into our eyes.</li> <li>To understand how moving from one medium to another, can cause light waves to refract or bend.</li> <li>To illustrate investigative work (<b>using detailed, annotated diagrams</b>) considering how to ensure a fair test <b>by introducing controls</b> and evaluating investigations.</li> <li>To <b>research</b> and explain the phenomenon of shadows, <b>observing how these are caused</b> by objects that block the direct path of light.</li> <li>To use scientific vocabulary (transparent, translucent, opaque) in <b>describing observations</b> about the quantity of light that is able to pass through an object.</li> </ul>	<ul style="list-style-type: none"> <li>To describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird, <b>using evidence to compare and contrast these</b>.</li> <li>To <b>formulate</b> and answer questions about how and why species develop in different ways, <b>using knowledge of the evolution and consequent classification of species to further develop and justify ideas</b>.</li> <li>To explain <b>and analyse</b> the reproductive process in some plants and animals, <b>considering differences between these</b>.</li> <li>To use scientific vocabulary regarding the sex cells of both plants and animals (pollen, ovule, sperm, egg) <b>to evidence understanding</b> of the key stages of reproduction.</li> </ul>	<ul style="list-style-type: none"> <li>To describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird, <b>using evidence to compare and contrast these</b>.</li> <li>To <b>formulate</b> and answer questions about how and why species develop in different ways, <b>using knowledge of the evolution and consequent classification of species to further develop and justify ideas</b>.</li> <li>To explain <b>and analyse</b> the reproductive process in some plants and animals, <b>considering differences between these</b>.</li> <li>To use scientific vocabulary regarding the sex cells of both plants and animals (pollen, ovule, sperm, egg) <b>to evidence understanding</b> of the key stages of reproduction.</li> </ul>	<ul style="list-style-type: none"> <li><b>To engage with current scientific research</b> to explore the incremental stages that human beings go through - from the moment of fertilisation of the egg <b>and prenatal development in the womb</b>, through to old age– including during puberty.</li> <li>To describe, <b>compare and contrast</b> adolescence in males and females and <b>explain</b> the changes that transform a child boy or girl into an adult man or woman, capable of reproducing themselves.</li> </ul>	<ul style="list-style-type: none"> <li><b>To design their own experiments</b> to investigate the impact of forces including gravity, friction, water resistance and air resistance, taking measurements and collecting data, <b>which they will display in a manner of their choosing</b>, to challenge their hypotheses.</li> <li><b>To explain the benefits of taking multiple readings</b> and the importance of working with accuracy and precision to ensure that the results of a test are scientifically viable.</li> <li>To <b>investigate</b> and make comparisons between different forces, recognising friction, water resistance and air resistance as stopping forces, compared with gravity, which they should already identify as a pull exerted by the Earth or any object with mass.</li> <li><b>To draw together knowledge of forces by explaining</b> how certain mechanisms, such as levers, pulleys and gears, allow a smaller force to have a greater effect.</li> <li><b>To use scientific vocabulary to explain the impact of these mechanisms in real-world situations involving forces</b>.</li> </ul>
	End Point	<p>To understand our heliocentric solar system and learn about how Earth's rotation causes day and night.</p> <p>Work scientifically to investigate how sundials work, creating one and analysing their results.</p>	<p>To understand that light rays travel in straight lines and enter our eyes to allowing us to see.</p> <p>To investigate how light can be reflected and refracted and obstructed to form shadows.</p>	<p>To understand the reproductive functions of the parts of a flower, using this to explain pollination and to work scientifically to investigate asexual reproduction in plants.</p> <p>To explain the differences in the life cycles of birds, mammals, amphibians, and insects.</p> <p>To understand that conservation as an imperative means of preserving our existing biodiversity.</p>	<p>To understand the reproductive functions of the parts of a flower, using this to explain pollination and to work scientifically to investigate asexual reproduction in plants.</p> <p>To explain the differences in the life cycles of birds, mammals, amphibians, and insects.</p> <p>To understand that conservation as an imperative means of preserving our existing biodiversity.</p>	<p>To understand and describe the changes which occur during a human's lifecycle from birth to death, including changes during puberty and old age.</p> <p>To understand how the gestation period of animals varies significantly.</p>	<p>To understand that forces can act on objects, including gravity, air resistance, water resistance and friction.</p> <p>To investigate and evaluate how we can shape objects, select materials, and use leverage to minimise or maximise the impact of these forces, including investigations into friction and water resistance and the creation of a seesaw.</p>
UKS2 Cycle B	Topic	Properties of Materials	Properties of Materials	Living things and their Habitats	Electricity	Evolution and Inheritance	Animals including Humans (Circulatory system)
	Enquiry Question	What makes a change irreversible?	What makes a change irreversible?	How small can an animal be?	How can you make bulbs brighter?	Will humans ever stop evolving?	Why does our heart rate increase when we exercise?
	Key Knowledge and skills	<ul style="list-style-type: none"> <li>To compare and group together everyday materials on the basis of their properties, including hardness (as informed by the Mohs Hardness Scale), solubility, transparency, conductivity and response to magnets.</li> <li>To investigate solution formation and apply knowledge of solids, liquids, and gases to <b>design a means</b> to investigate how mixtures might be separated, through filtering, sieving, and evaporating.</li> <li>To justify reasons, based on evidence <b>from comparative and fair tests</b>, for the uses of everyday materials.</li> </ul> <p>To explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible.</p>	<ul style="list-style-type: none"> <li>To compare and group together everyday materials on the basis of their properties, including hardness (as informed by the Mohs Hardness Scale), solubility, transparency, conductivity and response to magnets.</li> <li>To investigate solution formation and apply knowledge of solids, liquids, and gases to <b>design a means</b> to investigate how mixtures might be separated, through filtering, sieving, and evaporating.</li> <li>To justify reasons, based on evidence <b>from comparative and fair tests</b>, for the uses of everyday materials.</li> </ul> <p>To explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible.</p>	<ul style="list-style-type: none"> <li>Organisms can be classified according to their features.</li> <li>To 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 and know micro-organisms, plants and animals can be subdivided into smaller categories.</li> <li>To give justified reasons for classifying plants and animals based on specific characteristics.</li> </ul>	<ul style="list-style-type: none"> <li>The everyday world is largely a consequence of electrical charge. Understanding electricity and magnetism helps us develop technology to improve lives.</li> <li>To design experiments to <b>test predictions which</b> associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit.</li> <li>To compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches.</li> <li>To create and representing a simple circuit in a diagram, using recognised symbols.</li> </ul>	<ul style="list-style-type: none"> <li>Differences between organisms cause species to evolve by natural selection of better adapted individuals. The great diversity of organisms is the result of evolution.</li> <li>To learn that living things have changed over time and that fossils provide information about living things that inhabited Earth millions of years ago.</li> <li>To recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents.</li> <li>To identify how animals and plants are adapted to suit their environment in different ways <b>and that adaptation may lead to evolution</b>.</li> </ul>	<ul style="list-style-type: none"> <li>Organisms are made of organs and organ systems which work together to supply the energy and molecules needed to carry out life processes.</li> <li>To identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood.</li> <li>To recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function, <b>relating their knowledge from PSHE about how some drugs are used safely</b>.</li> <li>To describe the ways in which nutrients and water are transported within animals, including humans.</li> </ul>

SCIENCE

	End Point	<p>To understand all materials, exist in one of three different ‘States of Matter’- solid, liquid and gas.</p> <p>To investigate whether different materials conduct or insulate electricity or heat (thermal) and describe their properties through their, transparency, hardness, flexibility and magnetism.</p> <p>To understand and explain whether different changes are reversible.</p>	<p>To understand all materials, exist in one of three different ‘States of Matter’- solid, liquid and gas.</p> <p>To investigate whether different materials conduct or insulate electricity or heat (thermal) and describe their properties through their, transparency, hardness, flexibility and magnetism.</p> <p>To understand and explain whether different changes are reversible.</p>	<p>To understand that all living things classified into different groups based on their similarities and differences.</p> <p>To investigate the growth of microorganisms.</p>	<p>To understand and use recognised symbols when representing a circuit in a diagram.</p> <p>To investigate the correlation between voltage and the output of components in a series circuit.</p>	<p>To research and understand the core principles of Charles Darwin’s Theory of Evolution.</p> <p>To explain how animals and plants are adapted to suit their environment in different ways and understand that adaptation may lead to evolution.</p> <p>To understand and explain how fossils provide information about living things that inhabited Earth millions of years ago.</p>	<p>To understand the purpose of, and name, the circulatory system, and its component parts.</p> <p>To investigate the effect exercising has on demand for oxygen and heart rate.</p> <p>To understand that drugs, which can be both legal and illegal, have diverse effects on the body.</p>

