

Science Progression



Year		Curriculum Drivers			Disciplinary Knowledge		
		Sustainability, knowledge, innovation, knowledge, legacy, equality.			Observing over time, identifying and classifying, comparative testing, research, pattern-seeking, fair testing.		
		Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Rec	Unit/outcome:	<p>Objectives to be taught across the year</p> <p>Animals, including humans: Explore the natural world around them, making observations and drawing pictures of animals. Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class.</p> <ul style="list-style-type: none"> • Begin to learn about the lifecycle of a caterpillar (the hungry caterpillar) and other animals. • Observing over time. How does the caterpillar change over time? • Demonstrate an inquisitive nature about the world around them. • Describe weather and seasonal change - what animals do we see at different times of the year? • Name body parts and talk about basic bodily functions. • Begin to consider what we need to keep healthy. • Recall the five senses and talk about each one. • Learn about different types of animals and habitats. • Identify and explore pets, British wildlife and zoo animals. • Identify and describe a range of minibeasts. <p>Plants: Explore the natural world around them, making observations and drawing pictures of plants. Know some similarities and difference between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class.</p> <ul style="list-style-type: none"> • Begin to learn about how to look after plants and care for plants in the world around them. • Observing over time: how have the plants or trees in our outdoor learning area changed over time? • Demonstrate an inquisitive nature about the world around them. • Describe weather and seasonal change. • Recall the five senses and talk about each one. <p>Everyday materials Pupils will distinguish between an object and the material from which it is made. They will identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock. They will begin to describe and compare the simple physical properties of a variety of everyday materials.</p> <ul style="list-style-type: none"> • Demonstrate an inquisitive nature about the world around them. • Recall the five senses and talk about each one. 					

		<ul style="list-style-type: none"> • Explore a range of materials and their uses. • Experiment to see which materials float and which sink. • Explore and investigate change <p>Seasonal change</p> <p>Pupils will observe changes across the year and the four seasons. Pupils will observe and describe weather associated with the seasons.</p> <ul style="list-style-type: none"> • Demonstrate an inquisitive nature about the world around them. • Describe weather and seasonal change. • Recall the five senses and talk about each one. • Explore the immediate and local environment. • During the year as seasons change the children will look at how the natural world changes and compare similarities and differences. • Explore and investigate change 		
	<p>Key enquiry questions:</p>	<p>How do animals change as they grow? How does the natural world change over the seasons? What five sense do humans have? What is different or the same about animals we have observed? What different materials can you experiment with in your learning environment (inside or outside)? What can I observe in the world around me?</p>		
	<p>United Nations Sustainable Goals:</p>	<div data-bbox="573 794 696 916" data-label="Image"> </div> <p>There is a need to protect plant and animal life on land</p> <div data-bbox="573 946 696 1067" data-label="Image"> </div> <p>Effective use of recycled materials in order to reduce waste.</p>		
	<p>Sticky knowledge:</p>	<p>Plants: To know that there are four seasons.</p> <p>To know that we are in autumn (September – end of November) and discuss the impact of autumn.</p> <p>To know that we eat some plants (autumn harvest). To know that’s during the Autumn months plants stop making food (everything in nature is slowly starting to fall asleep).</p>	<p>To know that we are in Winter (January- February) and discuss the impact of Winter.</p> <p>To know that we are now in Spring (March-May) and discuss the impact of Spring.</p>	<p>To know that we are now in Summer (June-July) and discuss the impact of Winter.</p> <p>To know that different materials feel and look different.</p> <p>To know that different materials are used for different purposes.</p>

		<p>Animals including Humans: To know that we have senses and that we can use them to explore the world around us.</p> <p>To know what body parts are used for the five senses.</p> <p>To know that's during the Autumn months plants stop making food (everything in nature is slowly starting to fall asleep).</p>	<p>To know that in spring plants and flowers start to grow.</p> <p>To know that animals have a lifecycle.</p> <p>To know that we can keep our bodies healthy by eating fruits and vegetables (plants).</p> <p>To know that plants grow from seeds and/ or beans.</p> <p>To know that we need to look after plants to help them grow.</p>	<p>To know that some materials can change over time.</p> <p>To know how to make healthy food choices.</p>
	<p>Language:</p>	<p>Autumn, Winter, Spring, Summer, weather, walk, leaves, trees, change, colour, green, red, orange, yellow, brown, find, birds, acorns, conkers, harvest, hedgehog, squirrel, investigate, explore.</p> <p>Senses, sight, eyes, hearing, ears, smell, nose, taste, touch, hands, birds, hedgehog, squirrel, investigate, explore.</p>	<p>Autumn, Winter, Spring, Summer, weather, plants, grow, animals, lifecycle, healthy, bodies, fruits, Vegetables, seeds, bulbs.</p>	<p>Autumn, Winter, Spring, Summer, weather, Materials, soft, hard, squishy, round, flat, fold, scrunch, twist, recycling, reuse.</p>
	<p>Progression:</p>	<ul style="list-style-type: none"> • Use their senses to explore the world around them. • Look closely at the five senses and how these are used. • Know about similarities and differences in relation to places, objects, materials and living things. • Look closely at similarities in relation to the four seasons and when different weather occurs. • Developing ideas about changes in state of matter. 	<ul style="list-style-type: none"> • Make observations about the world around them. • Explain similarities and differences in relation to places, objects, materials and living things. • Look closely at similarities in relation to the four seasons and when different weather occurs. • to know the properties of some materials. 	<ul style="list-style-type: none"> • Explain why things occur and talk about changes. • Talk about the features of their own environment and how environments might vary from one another. • Look closely at similarities in relation to the four seasons and when different weather occurs. • Developing ideas around cause and effect in relation to movement i.e. toys, cars etc. • Suggest the purpose behind using certain materials. • Become familiar with basic scientific concepts such as floating, sinking and experimentation.

1	Unit outcome:	Biology: Animals, including humans (1/2 term) What is special about me? Identify, name, draw and label body parts and senses.	Everyday materials (1 term) What are the properties of different materials? Sorting, describing and naming basic common materials. Know how to distinguish between different materials. Test whether different materials have that property i.e. what are the properties of plastic, wood?	Plants: (1 term) What do I know about plants? Identify and name plants.	Animals, including humans: (½ term) What do I know about animals? Identify fish, amphibians, reptiles, birds and mammals. Classification of carnivores, herbivores and omnivores.	Seasonal Change: (ongoing – one session per term) How do the seasons change? Identify the different seasons and features of these seasons.
	Key enquiry questions:	<u>What is special about me?</u>	<u>What are the properties of different materials?</u>	<u>What do I know about plants?</u>	<u>What do I know about animals?</u>	<u>How do the seasons change throughout the year?</u>
	United Nations Sustainable Goal	 Overcome barriers to ensure an equal opportunity for all.	 Understand the importance of reduce, reuse, recycle.	 It is important to protect and preserve ecosystems.	 Protect ecosystems.  It is important to protect and preserve ecosystems.	

	Sticky knowledge	<p>To know the names of human body parts.</p> <p>To know the 5 senses and what they do.</p>	<p>To know and name different materials.</p> <p>To know that objects are made from different materials (glass, metal, water and rock).</p> <p>To know, name and describe properties of materials.</p>	<p>To know and name different garden plants and deciduous and evergreen trees.</p> <p>To be able to explain the difference between deciduous and evergreen trees.</p> <p>To know and describe the basic structure of a variety of common flowering plants, including trees.</p>	<p>To know and name a variety of common animals including fish, amphibians, reptiles, birds and mammals.</p> <p>To know and name a variety of common animals that are carnivores, herbivores and omnivores.</p> <p>To know that herbivores eat plants; carnivores eat other animals and omnivores eat both animals and plants.</p> <p>To know, describe and compare different animal body parts.</p>	<p>To know the different seasons across the year.</p> <p>To know some features of each season.</p> <p>To know the day lengths changes linked to the seasons.</p>
	Language	<p>ourselves, head, neck, arms, elbow, face, ears, eyes, hair, mouth, teeth, stomach, feet, foot, nose, fingers, skin, knees, textures, sound, smell, touch, see, tall, taller, tallest, similar to, different, difference.</p>	<p>Property, hard, soft, stretchy, stiff, shiny, dull, rough, smooth, bendy, rigid, waterproof, absorbent, opaque, transparent, wood, paper, metal, glass, fibre, plastic, foil, man-made, natural, matter.</p>	<p>Deciduous, evergreen, trees, leaves, stem, flowers, blossom, petals, fruits.</p>	<p>Fish, amphibian, reptile bird, mammal, carnivores, herbivores and omnivores.</p>	<p>Seasonal changes – seasons, summer, spring, autumn, winter, day, night, light, dark, weather, sunny, rain, fog, snow, sleet, hail.</p>
	Progression	<ul style="list-style-type: none"> To identify, name, draw and label the basic parts of the human body and say which part of the body is associated 	<ul style="list-style-type: none"> To distinguish between an object and the material from which it is 	<ul style="list-style-type: none"> To know the names of a variety of common wild and garden plants, including deciduous and 	<ul style="list-style-type: none"> To identify and name a variety of common animals 	<ul style="list-style-type: none"> To observe changes across the four seasons. To observe and

		<p>with each sense.</p> <ul style="list-style-type: none"> • To understand how humans change over time. • To name the basic body parts of animals and humans. • To know the 5 human senses and their job. 	<p>made.</p> <ul style="list-style-type: none"> • To know that an object is made from/of a material. • To know and name a wide variety of materials. • To know some materials that can or can't be recycled. • To identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock. • To know that materials have properties and name these. • To describe the simple physical properties of a variety of everyday materials. • To compare and group together a variety of everyday materials on the basis of their simple physical properties. 	<p>evergreen trees.</p> <ul style="list-style-type: none"> • To know that evergreen trees maintain their leaves throughout the year and that deciduous trees shed their leaves in autumn. • To identify a variety of common wild and garden plants, including deciduous and evergreen trees. • To identify and describe the basic structure of a variety of common flowering plants, including trees. 	<p>including fish, amphibians, reptiles, birds and mammals.</p> <ul style="list-style-type: none"> • To identify and name a variety of common animals that are carnivores, herbivores and omnivores. • To know that herbivores eat plants; carnivores eat other animals and omnivores eat both animals and plants. • To describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets). 	<p>describe weather associated with the seasons and how day length varies.</p>

2	Unit/outcome:	Biology: Animals including Humans: (½ term) How can I keep myself healthy? Basic needs, eating the right amounts of different types of food. Importance of exercise on health and wellbeing. Importance of hygiene.	Everyday Materials: (½ term) Why are different materials important? Uses and properties of materials.	Living things and their habitats: (1 term) How do animals and plants depend on each other? Living and dead, animal/human offspring. Habitats and simple adaptations. Food chains	Plants: (1 term) How do plants grow? How seeds grow and what plants need to thrive.
	Key enquiry questions:	<u>How can I keep myself healthy?</u>	<u>Why are different materials important?</u>	<u>How do animals and plants depend on each other?</u>	<u>How do plants grow?</u>
	United Nations Sustainable Goals	 What it means to be healthy  The impact of malnutrition on individuals and countries.	 Effective use of recycled materials in order to reduce waste. Understand the importance of reduce, reuse, recycle.	 Reduce and prevent pollution. Protect ecosystems. Take action to restore healthy and productive oceans.  It is important to protect and preserve ecosystems.	 How to support local producers/farmers.  There is a need to protect plant and animal life on land.
	Sticky knowledge	To know that animals have offspring. To know that offspring grow in to adults. To know that animals need water, food and air to survive. To know why it is important to exercise.	To know why certain materials are used for different objects. To know and compare different properties of materials. To know that a force can be added to a material to change its	To know what a habitat and a microhabitat are and how they support survival. To know that most living things live in habitats to which they are suited and how they depend on each other. To know and name the differences between things living, dead and things that have never been alive. To know how animals obtain different food from a variety of sources and how a food chain works.	To know how seeds and bulbs grow in to plants. To know that plants need water, light and a suitable temperature to grow and stay healthy.

	<p>To know the importance of a healthy diet.</p> <p>To know the importance of hygiene.</p>	<p>shape e.g. squashed, twisted, bended and stretched.</p> <p>To know how to reduce, reuse and recycle.</p>		
Language	<p>Survival, water, air, food, adult, baby, offspring, kitten, calf, puppy, pupa, spawn, tadpole, frog, exercise, hygiene, baby, toddler, child, teenager, adult, exercise.</p>	<p>Reinforce words from Year 1 plus squashing, twisting, bending, stretching, conductor, suitability, flexible, rigid.</p>	<p>Habitat, micro-habitat (stones, leaf litter, path), shelter, warmth, ocean, rainforests, desert, polar region, woodland, seashore, living, not-living, alive, food chain, energy, predator, prey, life processes, carnivores, herbivores, omnivores.</p>	<p>Seeds, bulbs, water, light, temperature, growth, healthy.</p>
Progression	<ul style="list-style-type: none"> • To know that animals, including humans, have offspring which grow into adults. • To know, explore and understand the life cycle of a human and animal. • To know how animals reproduce. • Find out about and describe the basic needs of animals, including humans, for survival (water, food and air). • To describe the importance for humans of exercise and eating the right amounts of different types of food. • To know the basic food groups. • To know the effects that fatty foods can have on our 	<ul style="list-style-type: none"> • To compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. • To identify the properties of materials that make them suitable or unsuitable for particular purposes. 	<ul style="list-style-type: none"> • To explore and compare the differences between things that are living, dead, and things that have never been alive. • To know that living things move, grow, consume nutrients and reproduce. • To know the terms habitat and micro-habitat. • To know how a habitat provides for the basic needs of animals and plants. • To describe how animals obtain their food from plants and other animals. • To know how a simple food chain works. • To identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other. • To know that all animals have certain characteristics that are essential for keeping them alive and healthy. • To identify and name a variety of plants and animals in their habitats, including microhabitats. • To describe how animals obtain their food from 	<ul style="list-style-type: none"> • To observe and describe how seeds and bulbs grow into mature plants. • To find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. • To know what seeds, need to germinate and grow. • To observe and record how a plant changes over time.

3		bodies. <ul style="list-style-type: none"> To know the impact of exercise on the heart and body. To describe the importance for humans of hygiene. To know the reasons for keeping clean and staying healthy. 	<ul style="list-style-type: none"> To find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. To know that applying forces to objects can change their shape, by squeezing, stretching, bending and twisting. 	plants and other animals, using the idea of a simple food chain, and identify and name different sources of food. <ul style="list-style-type: none"> To explain what carnivores, herbivores and omnivores are. 			
	Unit/outcome:	Light: (½ term) How does light travel? Seeing, reflection, and shadows.	Rocks: (½ term) What are the physical properties of rocks, soil and fossils? Compare and group rocks, soil and fossils.	Forces: (½ term) How does friction effect movement? Friction.	Plants: (½ term) What is the life cycle of a flowering plant? Flowering plants, requirements for growth, transportation, life cycle of plants.	Magnets: (½ term) How do magnets work? Magnetic forces, actions of magnets, non/magnetic materials.	Biology: Animals, including humans: (½ term) Are bones important? Nutrition, skeletons and muscles.
	Key enquiry questions:	<u>How does light travel?</u>	<u>What are the physical properties of rocks, soil and fossils?</u>	<u>How does friction effect movement?</u>	<u>What is the life cycle of a flowering plant?</u>	<u>How do magnets work?</u>	<u>Are bones important?</u>

	<p>United Nations Sustainable Goals</p>		 <p>5 GENDER EQUALITY</p> <p>Women feel valued and empowered to do whatever they have a passion to do.</p>	 <p>15 LIFE ON LAND</p> <p>There is a need to protect plant and animal life on land.</p>	 <p>12 RESPONSIBLE CONSUMPTION AND PRODUCTION</p> <p>Effective use of recycled materials in order to reduce waste.</p> <p>Understand the importance of reduce, reuse, recycle.</p>	 <p>1 NO POVERTY</p> <p>What it means to be healthy.</p>
	<p>Sticky knowledge</p>	<p>To know that light is reflected from a surface.</p> <p>To know that light</p>	<p>To name and identify properties of the three types of rocks: igneous, sedimentary and</p>	<p>To know how things move on different surfaces.</p>	<p>To know the name and function of plants: roots, stem/trunk, leaves and flowers.</p> <p>To know what plants need for life</p>	<p>To know magnets as having two poles (called north and south).</p>

		<p>from the sun can be dangerous and that there are ways to protect their eyes.</p> <p>To know that shadows are formed when light from the light source is blocked by an opaque object.</p> <p>To know what might cause a shadow to change.</p> <p>To know that the size of a shadow changes dependant on where the light source is.</p>	<p>metamorphic.</p> <p>To know how and why rocks change over time and why this happens.</p> <p>To know how fossils are formed.</p> <p>To know how soil is made and what it is made from.</p>	<p>To know how friction impacts on movement.</p> <p>To know a force can be thought of as a push or a pull.</p>	<p>and growth (air, light, water, nutrients from soil, and room to grow) and how this varies from plant to plant.</p> <p>To know how and why water is transported within plants.</p> <p>To know how flowers reproduce and disperse their seeds.</p> <p>To know the part the flower plays in the life cycle of the plant (including pollination, seed formation and seed dispersal).</p>	<p>To know why and how magnets attract or repel.</p> <p>To know that magnetic forces can act at a distance.</p> <p>To know how to compare and group together a variety of everyday magnetic and non-magnetic materials.</p> <p>To know how to predict whether two magnets will attract or repel each other, depending on which poles are facing.</p>	<p>To know we get nutrients from the food we eat.</p> <p>To know that animals have a skeleton.</p> <p>To know the job of the skeleton.</p> <p>To know that muscles help animals move.</p>
	Language	<p>Light, dark, shadows, mirror, shiny, smooth, rough, surfaces, reflective, transparent, translucent, opaque.</p>	<p>Physical properties igneous, sedimentary and metamorphic rock, granite, limestone, sandstone, marble, slate, fossils, soil, weathering, crust, mantle, outer core, inner core, chalk,</p>	<p>Force, contact, friction, push, pull.</p>	<p>Air, light, water, nutrients, soil, reproduction, transportation, dispersal, pollination, flower.</p>	<p>Magnetic force, force, contact, attract, repel, friction, poles.</p>	<p>Movement, muscles, bones, skull, skeleton, nutrition, fat, sugar, carbohydrate, protein, vitamins, minerals, dairy produce, meat, fruit, vegetables, diet.</p>

			fragment, erosion, natural, man-made, heat, pressure, sediment, resin, minerals, amber, mould, magma, geologist, petrologist, compost, recycle, reuse, micro-organisms, organic matter, particles, sand, silt, palaeontology.				
	Progression	<ul style="list-style-type: none"> • To recognise that they need light in order to see things and that dark is the absence of light. • To know how light behaves. • To know that objects can be opaque, translucent or transparent. • To know that light is reflected from a surface. • To recognise that light from 	<ul style="list-style-type: none"> • To know that rocks have different properties depending on how they are formed. • To compare and group together different kinds of rocks on the basis of their appearance and simple physical properties. • To know that there are three types of rocks: igneous, sedimentary and 	<ul style="list-style-type: none"> • To compare how things move on different surfaces. • To know objects move differently on rough and smooth surfaces. • To know objects resist movement more on rough surfaces because there is higher 	<ul style="list-style-type: none"> • To observe and describe how seeds and bulbs grow into mature plants. • To find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. • To know what seeds, need to germinate and grow. • To observe and record how a plant changes over time. 	<ul style="list-style-type: none"> • To describe magnets as having two poles (called north and south). • To observe how magnets attract or repel each other and attract some materials and not others. • To notice that some forces need contact between two objects, but magnetic forces can act at a distance. • To compare and group 	<ul style="list-style-type: none"> • To identify that animal, 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. • To know that humans and some animals have skeletons and muscles for support, protection and movement. • To know that skeletons provide support for muscles and protect the body. • To know the

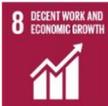
		<p>the sun can be dangerous and that there are ways to protect their eyes.</p> <ul style="list-style-type: none"> • To recognise that shadows are formed when light from the light source is blocked by an opaque object. • To know what might cause a shadow to change. • To know that the size of a shadow changes dependant on where the light source is. • To find patterns in the way that the size of shadows change. 	<p>metamorphic.</p> <ul style="list-style-type: none"> • To know the properties of igneous, metamorphic and sedimentary rocks. • To observe rocks, including those used in buildings and gravestones, and explore how and why they might have changed over time. • To describe in simple terms how fossils are formed when things that have lived are trapped within rock. • To know that fossils can help us learn about things that lived long ago. • To know and recognize that soils are made from rocks 	<p>friction as the object moves.</p> <ul style="list-style-type: none"> • To know a force can be thought of as a push or a pull. 		<p>together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials.</p> <ul style="list-style-type: none"> • To predict whether two magnets will attract or repel each other, depending on which poles are facing. 	<p>function of the human skeleton.</p> <ul style="list-style-type: none"> • To know that muscles work in pairs. • To know what vertebrate and invertebrate means. • To know that a nutritious diet can be achieved in a variety of ways.
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4			and organic matter.			
	Unit/outcome:	<p>States of matter: (½ term)</p> <p>What are the properties of solids, liquids and gases?</p> <p>Solids, liquids or gases, changes of state. Evaporation and condensation in the water cycle.</p>	<p>Animals, including humans: (½ term)</p> <p>How does the digestive system work?</p> <p>Digestive system and teeth.</p>	<p>Sound: (1 term)</p> <p>How does sound travel?</p> <p>How sounds are made, the ear, find patterns between the pitch, volume of a sound and the strength of the vibrations that produced it, how sound reduces as its sources get further away.</p>	<p>Electricity: (½ term)</p> <p>What is electricity?</p> <p>Basic circuit components, electrical appliances, conductors and insulators.</p>	<p>Living things and their habitats: (1/2 term)</p> <p>How can we use grouping to categorise animals?</p> <p>Classification, changes in environment and dangers this poses including the impact of climate change.</p>
	Key enquiry questions:	<u>What are the properties of solids, liquids and gases?</u>	<u>How does the digestive system work?</u>	<u>How does sound travel?</u>	<u>What is electricity?</u>	<u>How can we use groupings to categorise animals?</u>
	United Nations Sustainable Goals		 <p>Understand a variety of ways to improve their own and other people's well-being.</p>	 <p>Equal opportunities for all.</p>		 <p>There is a need to protect plant and animal life on land.</p>
Sticky knowledge	<p>To know how to compare and group materials.</p> <p>To know how some materials can change their state.</p> <p>To know that some changes are irreversible.</p>	<p>To know how the digestion system works.</p> <p>To know why the digestive system is important.</p> <p>To know the three types of human teeth and that each one has different functions.</p>	<p>To know that sound is generated and travels.</p> <p>To know how sounds can be changed.</p> <p>To know which materials provide the best insulations against sound.</p>	<p>To know and name appliances that run on electricity.</p> <p>To know sources of electrical energy.</p> <p>To know how to draw simple circuit diagrams.</p>	<p>To know how to group living things in a variety of ways.</p> <p>To know how to use a classification key.</p> <p>To know that changes to the environment can affect living things.</p>	

	To know and explain the water cycle.	To know how to construct and interpret a variety of food chains.		To know how a circuit works. To know and name some common conductors and insulators.	To know the impact of humans on environments.
Language	Solid, liquid, gas, evaporation, condensation, bond, particles, temperature, freezing, heating, cooling, Celsius, water cycle, melting, reversible change, precipitation, transpiration, surface run-off, groundwater.	Mouth, tongue, teeth, incisors, canines, pre-molars, molars, oesophagus, stomach, small intestine, large intestine, digestive system, food chain, energy, producer, predator, prey, primary consumer, secondary consumer.	Vibration, volume, pitch, medium, insulation.	Cells, wires, bulbs, switches, battery, buzzers, circuit, series, conductors, insulators, components, brighter, dimmer.	Fish, amphibians, reptiles, birds, mammals, herbivore, carnivore, omnivore, invertebrates, slug, snail, worms, spiders, insects, vertebrates, group, classify, environment, habitats.
Progression	<ul style="list-style-type: none"> • To compare and group materials together, according to whether they are solids, liquids or gases. • 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). • To know that some changes are 	<ul style="list-style-type: none"> • To know and be able to explain the digestive system. • To describe the simple functions of the basic parts of the digestive system in humans. • To construct and interpret a variety of food chains, identifying producers, predators and prey. • To know what a primary and secondary consumer are. • To identify the different types of teeth in humans and their simple function. • To know that a human has three types of teeth, incisors, canines and molars and that these each 	<ul style="list-style-type: none"> • To identify how sounds are made, associating some of them with something vibrating. • To know that sound is generated when an object vibrates. • To explore and identify the way musical instruments use vibration to make sound. • To recognise that vibrations from sounds travel through a medium to the ear. • To find patterns between the pitch of a sound and features of the object that produced it. • To know how sounds can be changed in a variety of ways for example, through pitch 	<ul style="list-style-type: none"> • To identify common appliances that run on electricity. • To identify how to work safely with electricity. • To know cells, batteries and the mains are all sources of electrical energy. • To construct a simple series electrical circuit, 	<ul style="list-style-type: none"> • To recognise that living things can be grouped in a variety of ways. • To know that animals can be grouped based on their physical characteristics. • To explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment. • To know that a classification key

		<p>irreversible.</p> <ul style="list-style-type: none"> • To identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature. • To know that, as temperature increases, solids can change into liquids. • To know that, with a further increase of temperature, the liquid changes into gas. • To know when solids turn into liquids, this is called melting and that the reverse process is called freezing. • To know when liquids turn into gasses, this is called evaporation and that the reverse process is called condensation. • To know that the melting point of water is 0 degrees Celsius and that the boiling point is 100 	<p>perform different functions.</p>	<p>and volume.</p> <ul style="list-style-type: none"> • To find patterns between the volume of a sound and the strength of the vibrations that produced it. • To know which materials provide the best insulation against sound. • To recognise that sounds get fainter as the distance from the sound source increases. • To know that the volume of a sound is quieter if the listener is further away from the object. 	<p>identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers.</p> <ul style="list-style-type: none"> • To know how to draw simple circuit diagrams. • To know that electrical current can flow if there is a complete circuit. • To know that when electrical current is needed to make a circuit work. • To know that wires allow electrical current to flow around a circuit. • To identify whether or not a lamp will light in a simple series circuit, based on whether or 	<p>uses questions to sort and identify different living things.</p> <ul style="list-style-type: none"> • To recognise that environments can change and that this can sometimes pose dangers to living things. • To know that changes to the environment can make it more difficult for living things to survive and reproduce. • To know the impact of humans on environments.
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		<p>degrees Celsius.</p> <ul style="list-style-type: none">• To know that water flows around our world in a continuous process called the water cycle.			<p>not the lamp is part of a complete loop with a battery.</p> <ul style="list-style-type: none">• To know that a switch functions by completing or breaking a complete circuit.• To recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit.• To recognise some common conductors and insulators, and associate metals with being good conductors.• To draw and explain a circuit with symbols.	
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5	Unit/outcome:	<p>Earth and space: (½ term)</p> <p>How have our ideas about space changed over time?</p> <p>Earth, planets, day/night.</p>	<p>Forces: (½ term)</p> <p>Why are forces important?</p> <p>Gravity, air resistance, water resistance and friction, that act between moving surfaces, levers and pulleys.</p>	<p>Properties of changing materials: (1 term)</p> <p>What are the properties of different materials and how can they change?</p> <p>Grouping materials by properties, solids, liquids and gases, changes of state.</p>	<p>Living things and their habitats: (9 sessions)</p> <p>Are all life cycles the same?</p> <p>Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. Describe the life process of reproduction in some plants and animals.</p>	<p>Animals including humans: (3 sessions)</p> <p>How do humans develop to old age?</p> <p>The development of humans to old age.</p>
	Key enquiry questions:	<u>How have our ideas about space changed over time?</u>	<u>Why are forces important?</u>	<u>What are the properties of different materials and how can they change?</u>	<u>Are all life cycles the same?</u>	<u>How do humans develop to old age?</u>
	United Nations Sustainable Goals	 <p>Women feel valued and empowered to do whatever they have a passion to do</p>	 <p>Ensure access to affordable, reliable, sustainable and modern energy for all</p>  <p>Promote sustained, inclusive and sustainable economic growth, full and productive employment, and decent work for all</p>	 <p>The importance of ensuring water is clean for everyone and the impact unclean water has on a person's health.</p>  <p>Protect water, air and soil from pollution.</p> 		

			 <p>Conserve and sustainably use the oceans, seas and marine resources for sustainable development</p>	<p>Reduce and prevent pollution. Protect ecosystems. Take action to restore healthy and productive oceans.</p>		
	Sticky knowledge	<p>To know how the Earth and other planets orbit the sun.</p> <p>To know and explain how the moon orbits the Earth.</p> <p>To know that the sun, Earth and moon are approximately spherical bodies.</p> <p>To know that the Earth spins on its axis.</p>	<p>To know and explain the force of gravity.</p> <p>To know a force is measured in a unit called Newtons.</p> <p>To know the amount of matter in an object is its mass.</p> <p>To know how forces and mass make things move faster or slower.</p> <p>To know the effects of air resistance, water resistance and friction.</p> <p>To know how gears, levers and pulleys work.</p>	<p>To know that some materials dissolve in liquid to form a solution.</p> <p>To know how to recover a substance from a solution.</p> <p>To know and explain reversible and irreversible changes.</p>	<p>To know that living things are classified into broad groups.</p> <p>To know how to and give reasons for classifying plants and animals based on specific characteristics.</p> <p>To know and describe the differences between life cycles.</p> <p>To know how some plants and animals reproduce.</p>	<p>To know the changes as humans develop to old age.</p>
	Language	<p>Earth, sun, moon, axis, rotation, day, night, phases of the moon, star, sphere, planet, dwarf planet, Mercury, Venus, Mars, Jupiter, Saturn, Uranus and Neptune.</p>	<p>Gravity, force, pull, Newton, weight, mass, friction, air resistance, turbine, streamlined, water resistance, adaptation, gears, machines, low gear, high gear, levers, mangonel, pivot.</p>	<p>Hardness, solubility, solution, transparency, conductivity, filter, evaporation, sieve, melting, dissolving, mixing, burning, irreversible.</p>	<p>Classification, vertebrates, invertebrates, micro-organisms, amphibians, reptiles, mammals, insects.</p>	<p>Egg, sperm, fetus, baby, toddler, child, teenager, adult, old age, development, growth, human, infancy, childhood,</p>

						adulthood, adolescence, prenatal, puberty, changes, breasts, pubic hair, hips, facial hair, body hair, genitals, muscular development, menstruation.
	<p>Progression</p>	<ul style="list-style-type: none"> • To describe the movement of the Earth and other planets relative to the sun in the solar systems. • To know that the Sun is a star at the centre of our solar system and that it has eight planets. • To know that all planets in our solar system orbit the sun. • To know that the Earth takes 365.25 days to orbit the sun. • To describe the movement of the moon relative to the 	<ul style="list-style-type: none"> • To be able to explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object. • To know unsupported objects are pulled towards the Earth by the force of gravity. • To know a force is measured in a unit called Newtons. • To know and name the scientist who discovered gravity. • To know the amount of matter in an object is its mass. • To know that gravity is a force that acts between all objects. • To know that gravity acts stronger when objects have more mass and are close together. • To explore how forces make things move faster 	<ul style="list-style-type: none"> • To compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets. • To know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution. • To use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating. • To give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic. • To explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda. 	<ul style="list-style-type: none"> • To describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. • To observe and compare the life cycles of plants and animals. • To describe the life process of reproduction in some plants and animals. • To explain the difference between sexual and asexual reproduction. • To compare how animals change over 	<ul style="list-style-type: none"> • To describe the changes as humans, develop to old age. • To know that humans go through stages of development. • To know what happens to their bodies as they go through puberty. • To explore and research the gestational periods of other animals and compare this to humans.

		<p>Earth.</p> <ul style="list-style-type: none"> • To know that a moon orbits a planet. • To describe the sun, Earth and moon as approximately spherical bodies. • To explain the idea of the Earth's rotation for day and night and the apparent movement of the sun across the sky. • To know that the work of scientists and astronauts has informed our current knowledge of space and how it continues to change. • To know that women have had an impact on space travel in the last 20 years. 	<p>or slower.</p> <ul style="list-style-type: none"> • To identify the effects of air resistance, water resistance and friction that act between moving surfaces. • To explore the effects of air resistance on different objects. • To know that gears, levers and pulleys are simple machines that are used to allow a smaller force to have a greater effect. • To recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect. 		time.	
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6	Unit/outcome:	Animals including humans: (1 term) How does the heart drive the circulatory system? Human circulatory system, the functions of the heart, blood vessels and blood, impact of diet, exercise, drugs and lifestyle nutrients and water transportation within animals, including humans.	Light: (½ term) How are light and sight linked? How light travels, shadows, how eyes see.	Electricity: (½ term) What are the different parts of a circuit? Circuit symbols, effects of cells in circuits.	Evolution and inheritance: (½ term) Fossils, living producing offspring, adaptation.	Living things and their habitats: (½ term) Classifying micro-organisms, plants and animals.
	Key enquiry questions:	<u>How does the heart drive the circulatory system?</u>	<u>How are light and sight linked?</u>	<u>What are the different parts of a circuit?</u>	<u>What is evolution?</u>	<u>Why is classification important?</u>
	United Nations Sustainable Goals	 <p>Understand a variety of ways to improve their own and other people's well-being.</p>	 <p>Enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology</p>	 <p>Knowing the importance of encouraging sustainable industry, using clean and environmentally friendly technology.</p>  <p>All nations must work together to help adapt to climate change and its impact, for the benefit of people everywhere.</p>	 <p>There is a need to protect plant and animal life on land.</p>	
	Sticky knowledge	To know and name the main parts of the human circulatory system. To know and describe the functions of the heart, blood vessels and blood.	To know that light travels. To know how and why objects reflect light.	To know how to increase the brightness of a bulb or the volume of a buzzer. To know the recognized symbols in a circuit diagram.	To know and explain how living things change over time. To know that fossils provide information	To know how to classify living things based on similarities and differences. To know how to classify plants and animals

	To know the impact of diet, exercise, drugs and lifestyle on the way their bodies function.	To know why shadows have the same shape as the object that cast them.	To know what a series circuit is and explain how it works. To know how a series circuit works.	about living things. To recognise that living things produce offspring of the same kind that are not identical to their parents. To know how animals and plants adapt and evolve.	based on specific characteristics.
Language	Circulatory system, heart, blood, arteries, veins, vessels, oxygenated, deoxygenated, valve, carbon dioxide, nutrients, muscles, exercise, respiration, nutrients, diet, drugs, harmful, beneficial, respiration.	Refraction, reflection, light, spectrum, rainbow, colour, shadow.	Cells, wires, bulbs, switches, buzzers, series, conductors, insulators, amps, volts, cell, symbols, current, voltage.	Fossils, adaptation evolution, characteristics, reproduction, genetics, environment, palaeontologist, advantage, disadvantage, species.	Classification, vertebrates, invertebrates, micro-organisms, amphibians, reptiles, mammals, insects.
Progression	<ul style="list-style-type: none"> • To identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood. • To know that oxygen is pumped around your body through the blood by the heart. • To know the names of the parts of the heart and how blood circulates through it. • To know what makes the heart beat faster. • To know that the lungs are an important part of the circulatory system. 	<ul style="list-style-type: none"> • To recognise that light appears to travel in straight lines. • To know that when light reflects off an object, the angle of incidence is equal to the angle of reflection. • To know that light travels in straight lines • To use the idea that light travels in straight lines to 	<ul style="list-style-type: none"> • To associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit. • To know that voltage is a measure of the power of a cell to produce electricity. • To know how to predict whether components will function in a given circuit, depending on whether or not the circuit is complete; whether or not a switch 	<ul style="list-style-type: none"> • To recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago. • To know that living things change over time and that this is called evolution. • To know that the gradual change of 	<ul style="list-style-type: none"> • 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. • To know that

		<ul style="list-style-type: none"> • To recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function. • To know what damages their body. • To explore the relationship between diet, exercise, drugs, lifestyle and health. • To describe the ways in which nutrients and water are transported within animals including humans. 	<p>explain that objects are seen because they give out or reflect light into the eye.</p> <ul style="list-style-type: none"> • To 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. • To use the idea that light travels in straight lines to explain why shadows have the same shape as the object that cast them. • To know and explain refraction. • To know that white light comprises all the colours of light. 	<p>is in an on or off position; and whether or not there is a cell to provide electrical current to the circuit.</p> <ul style="list-style-type: none"> • 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. • To know that as the number and voltage of cells in a circuit increases the brightness of a bulb or the volume of a buzzer. • To know the recognized symbols for a battery, bulb, motor, buzzer and wire. • To use recognised symbols when representing a simple circuit in a diagram. • To know what a series circuit is and explain how it works. • To know how to construct a simple series circuit using components. 	<p>species over millions of years can be observed by looking at examples of fossils.</p> <ul style="list-style-type: none"> • To recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents. • To know that characteristics are passed from parents to their offspring. • To identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution. 	<p>animals can be categorised into broad groupings and then sub divided.</p> <ul style="list-style-type: none"> • To give reasons for classifying plants and animals based on specific characteristics.