

Long Term Plan 2025 2026

Science Units

	EYFS		Key Stage 1		Key Stage 2			
	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Autumn Term	Explore the natural world around them, making observations and drawing animals and plants. Know some similarities and differences between the natural world around them and contrasting environments.		Seasons Animals Including Humans	Living Things and Their Habitats	Forces and Magnets Animals Including Humans	States of Matter Living Things and their Habitats	Living Things Earth & Space	Living Things and their Habitats Evolution & Inheritance
Spring Term	Understand important processes and changes in the natural world around them, including the seasons and changing states of matter.		The Human Body Materials	Animals Including Humans	Rocks	Animals including Humans Sound	Materials	Animals Including Humans Light
Summer Term			Plants	Plants Materials	Light Plants	Electricity	Forces Animals Including Humans	Electricity

Knowledge is Power...

EYFS	Autumn I	Autumn II	Spring I	Spring II	Summer I	Summer II
Understanding the World	- Understand features of their community.	- Talk about features of different seasons. - Explore what does and does not float. - Talk about what they see on their way to school and discuss how others may see different things. - Explore floating and sinking linked to boats. - Compare inside/outside. - Talk about wheels/features of some modes of transport (small world, box model).	- Understand the process of freezing and melting and discuss locations where things may be frozen. - Compare materials used for different costumes and purposes. - Name the animals featured in key texts. - Understand that we live on a planet and that beyond our planet is 'space'. - Name some animals from key texts. - Compare materials from the Three Little Pigs.	- Talk about how they have changed from being a baby. - Talk about people being older/younger than them. - Understand children/adults.	- Compare clothing from around the world and understand why some clothing is practical for different countries. - Name different animals and compare features. - Compare animals from around the world and discuss why they live in particular areas. - Name some animals that live in England. - Understand the weather and the meaning of hot and cold. - Describe what they can taste in different foods from around the world.	- Name and compare grown and baby animals. - Describe how they have grown/how humans grow from a baby to an adult. - Name some key features of plants and how they help plants grown. - Name some key plants growing around out school. - Describe how to care for plants and how to plant seeds. - Life cycle of a frog - The seasons over the school year – what has changes and stayed the same. - How to grow a beanstalk. - Name some adult and baby animals - Name some plants found in key texts. - Notice habitats of different animals around them – nests, logs, shells. - Life cycle of a butterfly. - How to grow a sunflower

						- Name some baby animals. - Describe plants in their environment. - Recognise that some things grown on trees. - How to grow a sunflower
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Year 1	Autumn I	Autumn II	Spring I	Spring II	Summer I	Summer II
Science Strand	Seasons  biology	Animals, including humans  biology	Animals, including humans - The human body  biology	Materials  chemistry	Plants  biology	
Learning Objectives	Lesson 1: I know the names of the different seasons and their order. Lesson 2: I know the differences between the seasons. Lesson 3: I know the changes in weather in Autumn. Lesson 4:	Lesson 1: I know how to identify and name a variety of common mammals. Lesson 2: I know how to identify and name a variety of common birds. Lesson 3: I know how to identify and name a variety of common fish.	Lesson 1: I know the names of the main parts of the human body. Lesson 2: I know how to draw and label the main parts of the human body and know what they do. Lesson 3: I know which parts of the body are associated with	Lesson 1: I know how to name and sort different materials. Lesson 2: I know the properties of different things made from wood, plastic, glass and metal. Lesson 3: I know the properties of rocks.	Lesson 1: I know the different parts of a plant. Lesson 2: I know how to compare different types of plant. Lesson 3: I know the different parts of trees. Lesson 4: I know how to compare the different types of trees. Lesson 5:	

	I know how to collect and record data about the weather in Autumn – temperature. Lesson 5: I know how to collect and record data about the weather in Autumn – rainfall.	Lesson 4: I know how to identify and name a variety of common amphibians and reptiles. Lesson 5: I know how to compare and classify a variety of common animals. Lesson 6: I know how to identify and name animals that are carnivores, herbivores and omnivores.	the sense of sight and sound. Lesson 4: I know which parts of the body are associated with the sense of smell and taste. Lesson 5: I know which parts of the body are associated with the sense of touch. Lesson 6: I know the changes in the weather in Spring (Ongoing comparative and investigative work started in Autumn 1).	Lesson 4: I know the different materials everyday objects are made from. Lesson 5: I know what happens to water when it freezes. Lesson 6: I know which materials will absorb water	I know the difference between deciduous and evergreen trees. Lesson 6: I know the changes in weather in Summer (ongoing comparative and investigative work started in Autumn 1).
Specific Scientific Knowledge (to be learned by the end of the unit)	There are four seasons in one year. The seasons are spring, summer, autumn and winter. In autumn, the hours of daylight start to become shorter and the nights start to become longer. Some trees lose their leaves in autumn. The weather often changes in autumn.	Mammals have fur or hair on their bodies. Some mammals can be kept as pets. Some mammals live in the wild. Birds have beaks, wings and feathers. Some birds can fly. Some birds cannot fly. Some birds can swim. Some birds cannot swim. Amphibians live on land and in water. Amphibians have webbed feet. Frogs, toads and newts are amphibians.	I know the names of the body parts: head, neck, arms, elbows, legs, knees, face, ears, eyes, hair, mouth and teeth. Eyes are used for seeing. Ears are used for hearing. Nose is used for smelling. Hands and fingers are used for touch, but it can be any part of the body to sense touch. We can sense five main types of taste – sweet, sour, salty, savoury and bitter.	Objects are made from different materials. Materials can have different textures. There are different types of rock. Rocks come in different shapes, sizes and textures. Rocks can be used to build things, such as walls or buildings. Objects are made from different materials. Objects can be made from different materials depending on what they are used for.	Plants have many parts. Each plant part has a name. Flowering plants have flowers, stems, roots and leaves. Trees are a type of plant. Trees can be different shapes and sizes. Trees have roots, a trunk, branches and leaves. Some trees have fruit. Deciduous trees lose their leaves in Autumn. Evergreen trees keep their leaves all year round. Wildflowers have not been chosen by humans to grow in their garden. Most wildflowers have not been planted by humans. Garden plants have been chosen by humans to grow in their gardens.

		Reptiles have dry skin. Reptiles have scales on their bodies. Lizards, snakes, crocodiles and turtles are reptiles. Carnivores eat other animals. Many carnivores have sharp teeth and claws. Herbivores eat plants including grass, fruits and vegetables. Some herbivores eat seeds and nuts. Herbivores have flat teeth for chewing plants. Omnivores eat other animals and plants.		When water freezes, it turns to ice. When ice melts, it turns to water.	
Working Scientifically	Use simple measurements and equipment – thermometer and Celsius. Record simple data. Explore the world around them and raise their own simple questions.	Identifying and classifying – classifying animals. Ask people questions and use simple secondary sources to find answers.	Identifying and classifying Use observation	Carry out simple tests. Use observations to suggest answers to questions. Use simple features to compare objects, materials and living things and, with help, decide how to sort and group them (identifying and classifying)	Observe closely using simple equipment. Record and communicate findings in a range of ways. Carry out simple tests. Use simple features to compare objects, materials and living things and, with help, decide how to sort and group them (identifying and classifying)
Vocabulary	Weather (sunny, rainy, windy, snowy etc.) Seasons (winter, summer, spring, autumn) Sun, sunrise, sunset, day length	Head, body, eyes, ears, mouth, teeth, leg, tail, wing, claw, fin, scales, feathers, fur, beak, paws, hooves Omnivore, carnivore, herbivore	touch, see, smell, taste, hear, fingers (skin), eyes, nose, ear and tongue	Object, material, wood, plastic, glass, metal, water, rock, brick, paper, fabric, elastic, foil, card/cardboard, rubber, wool, clay, hard, soft, stretchy, stiff, bendy, floppy, waterproof, absorbent, breaks/tears, rough, smooth, shiny, dull, opaque, transparent	Leaf, flower, blossom, petal, fruit, berry, root, seed, trunk, branch, stem, bark, stalk, bud

Year 2	Autumn I	Autumn II	Spring I	Spring II	Summer I	Summer II
Science Strand	Living things and their habitats  biology		Animals Including Humans  biology		Plants  biology	Materials  chemistry
Learning Objectives	Lesson 1: I know what living things need to stay alive and healthy. Lesson 2: I know how to compare the differences between things that are living, dead and things that have never been alive. Lesson 3: I know what habitats are in my local area and what living things can be found in them. Lesson 4: I know how to identify and name a variety of plants and animals in their habitats (Polar/Desert). Lesson 5: I know how to identify and name a variety of plants and animals in their habitats (ocean/woodland). Lesson 6:		Lesson 1: I know that most mammals have live offspring which grow into adults. Lesson 2: I know that most reptiles, amphibians, birds and insects lay eggs which grow into adults. Lesson 3: I know that humans have live offspring that grow into adults. Lesson 4: I know how to describe the basic needs of animals for survival. Lesson 5: I know how to describe the basic needs of humans for survival. Lesson 6:		Lesson 1: I know how to describe and classify different types of plants. Lesson 2: I know how to identify the similarities and differences between different plant parts on different types of plants. Lesson 3: I know that plants need water, light and a suitable temperature to grow and stay healthy. Lesson 4: I know how to investigate whether plants grow	Lesson 1: I know how to identify objects made from natural and human-made materials. Lesson 2: I know why it is important to recycle and reuse materials. Lesson 3: I know how to compare and classify materials in different ways. Lesson 4: I know the properties of materials that makes them suitable for a particular use. Lesson 5:

	I know how to identify and name a variety of plants and animals in a microhabitat. Lesson 7: I know how animals and plants in a habitat depend on each other. Lesson 8: I know how to describe how animals obtain their food from plants and other animals using a food chain.	I know how to describe the importance of exercise for humans. Lesson 7: I know how to describe the importance of a healthy diet for humans. Lesson 8: I know how to describe the importance of hygiene for humans.	healthier in the light or in the dark. Lesson 5: I know seeds and bulbs grow into mature plants. I know different plants have different looking bulbs and seeds. Lesson 6: I know how to observe and describe the growth of seeds and bulbs into plants.	I know why different materials can be used for the same thing. Lesson 6: I know how the shapes of solid objects can be changed by squashing, bending, twisting and stretching.
Specific Scientific Knowledge (to be learned by the end of the unit)	A habitat is where a plant or animal lives. A habitat provides everything a plant or animal needs to survive. All animals and plants have a habitat. There are different habitats in my local area. A microhabitat is a very small habitat. Insects, snails, worms and spiders all live and survive in microhabitats. An animal's habitat provides the food it needs to survive. A food chain shows how different living things rely on each other. A food chain normally starts with plants. Some animals eat other living things for energy. Animals, plants and humans are living things. Living things need certain things to survive, such as water, food, shelter and air. Living things can die. When something is dead, it was once living. Some things were never alive, such as rocks, water or toys.	Most mammals give birth to live young. These are their offspring. Reptiles, amphibians and birds and most insects lay eggs. These are their offspring. The offspring of many animals have a different name to the adult. Humans are mammals. Humans give birth to live young. Humans follow these stages of the life cycle – baby, child, teenager and adult. The body changes and grows throughout the life cycle. A mammal is an animal with fur or hair on its body, which gives birth to live young and feeds its young on milk. Different mammals have different life cycles. Most mammals grow up quicker than humans and become adults sooner. All animals need air, water, food and shelter to survive. Exercise improves physical health. Exercise improves mental health. Exercising daily makes your heart stronger.	A plant is a living thing. There are many different types of plants. Many plants have flowers or fruit. Parts of some plants can be eaten. Trees have roots, a trunk, branches and leaves. Many trees have blossom or fruit. Flowering plants have roots, a stem, leaves and petals. Plants need water to grow and stay healthy. Plants need light to grow and stay healthy. If plants do not have water and light, they may become weak and not grow properly.	Objects can be made from different materials. Some materials are natural, such as sand, wood and wool. Some are human-made such as plastic and cardboard. Some materials are recyclable and can be used again. Paper and cardboard are made from wood. Wood, paper and cardboard come from trees. There are different strengths of wood, paper and cardboard. Wood, paper and cardboard can be recycled and used again. Glass is hard and brittle. Plastic can be flexible or hard.

		A healthy diet includes fruit, vegetables and other healthy food. An unhealthy diet is a diet that is high in fat, sugar or salt. It is important to eat the right amounts of different types of food. Germ s can make you unwell. Germ s are spread easily by unwashed hands. You should wash your hands, sneeze into a tissue and have regular baths or showers.	Many plants grow from bulbs or seeds. Bulbs and seeds come in different shapes and sizes. Seeds can be found inside the fruit or on the outside of the fruit. Bulbs store food for plants to use when they grow again.	Some plastic can be recycled. All glass is recyclable. Some objects can be made from different materials. Some materials are suitable for an object. Some materials are unsuitable for an object.
Working Scientifically <i>I know how to...</i>	Carry out simple tasks, record findings, record simple data, use specific language, practical activities, decide how to sort and group (identify and classify), Explore the world around them and raise their own simple questions. Carry out simple tasks, record findings, record simple data, use specific language, practical activities.	Observe closely using simple equipment, with help, observe changes over time, Experience different types of science enquiries, including practical activities, use their observations and ideas to suggest answers to questions. Begin to recognise different ways in which they might answer scientific questions, with guidance, they should begin to notice patterns and relationships, observe closely using simple equipment, with help, they should record and communicate their findings in a range of ways and begin to use simple scientific language.	Observe closely using simple equipment, with help, observe changes over time, Experience different types of science enquiries, including practical activities, use their observations and ideas to suggest answers to questions. Explore the world around them and raise their own simple questions. Record + gather simple data	Use simple features to compare objects, materials and living things and, with help, decide how to sort and group them (identifying and classifying) Explore the world around them and raise their own simple questions Experience different types of science enquiries, including practical activities Record + gather simple data
Vocabulary	Living, dead, never been alive, suited, suitable, basic needs, food, food chain, shelter, move, feed Names of local habitats e.g. pond, woodland etc. Names of micro-habitats e.g. under logs, in bushes etc.	Offspring, reproduction, growth, child, young/old stages (examples - chick/hen, baby/child/adult, caterpillar/butterfly), exercise, heartbeat, breathing, hygiene, germ s, disease, food types (examples – meat, fish, vegetables, bread, rice, pasta)	As for Year 1 plus light, shade, sun, warm, cool, water, grow, healthy	Names of materials – wood, metal, plastic, glass, brick, rock, paper, cardboard Properties of materials – as for Year 1 plus opaque, transparent and translucent, reflective, non-reflective, flexible, rigid Shape, push/pushing, pull/pulling, twist/twisting, squash/squashing, bend/bending, stretch/stretching

Year 3	Autumn I	Autumn II	Spring I	Spring II	Summer I	Summer II
Science Strand	Forces & Magnets  physics	Animals Including Humans  biology	Rocks  chemistry		Light  physics	Plants  biology
Learning Objectives	Lesson 1: I know some examples of contact forces. Lesson 2: I know how things move on different surfaces and can compare them. Lesson 3: I know how magnetic force works. Lesson 4: I know which materials are attracted to magnets and which are not. Lesson 5: I know how to investigate and predict the way magnets attract or repel because of their poles.	Lesson 1: I know why animals, including humans, need nutrition and how they get it. Lesson 2: I know the main food groups and what foods contain them. Lesson 3: I know what a balanced diet is and why it is important. Lesson 4: I know how to identify and can name bones in the human body. Lesson 5: I know the function of different bones in a skeleton. Lesson 6: I know how bones, joints and muscles work together	Lesson 1: I know how to identify different types of rocks. Lesson 2: I know how to group and classify different rocks based on appearance and physical properties. Lesson 3: I know how to test rocks and recognise reactions. Lesson 4: I know how rocks are used and how they change over time. Lesson 5: I know the properties of different types of soil. Lesson 6: I know the importance of soil for sustainability. Lesson 7: I know what fossils are and why they are useful to scientists. Lesson 8: I know how fossils are formed.		Lesson 1: I know different light sources are and why we need them. Lesson 2: I know the difference between natural and artificial light sources. Lesson 3: I know how reflected light helps us see. Lesson 4: I know how to protect our eyes from the sun and why we need to do so. Lesson 5: I know how shadows are formed and recognise what makes their size change. Lesson 6: I know the difference between opaque, transparent and translucent objects.	Lesson 1: I know the different parts of flowering plants and their functions. Lesson 2/3: I know the requirements of a plant for life and growth, and how they change from plant to plant. Lesson 4: I know how water is transported within plants. Lesson 5: I know the life cycle of flowering plants.

		to support, protect and move.			
Specific Scientific Knowledge (to be learned by the end of the unit)	Forces are pushes or pulls. A contact force is a push or a pull that affects objects which are touching. Friction is a contact force that is caused by one object being pushed across the surface of another. Friction can stop or slow down a moving object. Smooth surfaces, such as ice, wood, and plastic, have lower levels of friction. Rough surfaces, such as concrete, sand and carpet, have higher levels of friction. A magnetic force is a non-contact force. Some materials are magnetic and some are not. Plastic is not a magnetic material. Wood is not a magnetic material. Paper is not a magnetic material. Some metals are magnetic materials. Magnets are objects that can attract some other metals.	Humans need the correct types and amount of food. Humans get their nutrition from what they eat. Food can be sorted into five food groups – fruit and vegetables, carbohydrates, proteins, dairy products and alternatives and fats and sugars. Carnivores are animals that eat other animals. Herbivores are animals that eat plants. Omnivores are animals that eat other animals and plants. The human skeleton is made up of lots of different bones. An adult human typically has 206 bones that make up the skeleton. The skull, spine (backbone), ribcage, pelvis and femur are bones within the skeleton. Mammals, birds, fish, amphibians and reptiles have a skeleton. Animal skeletons are made up of lots of different bones.	Rocks can be grouped in different ways. Some rocks have grains. Some rocks have crystals. Some rocks have layers. Some rocks are light and some are heavy. Some rocks are hard. Some rocks react with acid. Some rocks are brittle. Some rocks float and some sink. Rocks are used as building materials. Rocks have different textures and appearances. Rocks change over time. Organic matter is the remains of dead plants and animals. Soils are made from rocks, organic matter and water. There are different types of soil including sandy, chalk, clay and peat soil. These soils have different properties. Many living things need soil to survive. Soils can act as a habitat for many small animals. Soils provide nutrients for plants. Soils can also prevent flooding, as they absorb water. A fossil is the remains or trace of a living thing that lived a long time ago. Both animals and plants can become fossils. Older fossils are found deeper underground. Fossils are usually formed from the shells or bones of living things. Animal footprints and tracks can also form fossils.	Humans and other animals need light to see. Natural light sources are objects in nature that give out light, such as the Sun. Artificial light sources are made by humans. Opaque materials do not let light rays pass through. Translucent materials allow some light to pass through but do not form clear, defined shadows. Transparent materials allow light to pass through. Shadows are formed when the light from a light source is blocked by an object.	Plants are made up of different parts, which have different functions. The roots absorb water from the soil and hold the plant in place. The stem carries water to different parts of the plant. The leaves absorb sunlight to make food for the plant. The flowers help the plant to reproduce and create new life. The roots absorb water from the soil. The stem carries water to different parts of a plant. There are small tubes inside the stem that transport the water to different parts of a plant, such as to the leaves and flowers. The stamen is the male parts of a plant. The stamen produces pollen. The pistil is the female parts of a plant. The pistil receives the pollen in the fertilisation process.

	<i>All magnets have two poles – a north pole and a south pole.</i> <i>The opposite poles on two magnets will attract each other.</i> <i>The same poles on two magnets will repel each other.</i>	<i>Muscles are attached to bones.</i> <i>Muscles can only pull on bones and cannot push.</i> <i>Muscles work in pairs by contracting and relaxing.</i> <i>Bones, muscles and joints work together to allow movement.</i>			
Working Scientifically	<i>Begin to look for naturally occurring patterns and relationships and decide what data to collect to identify them.</i> <i>Collect and record data from their own observations and measurements in a variety of ways: notes, bar charts and tables, standard units, drawings, labelled diagrams, keys and help to make decisions about how to analyse this data.</i> <i>With support, they should identify new questions arising from the data, making predictions for new values within or beyond the data they have collected and finding ways of improving what they have already done.</i> <i>With help, pupils should look for changes, patterns, similarities and differences in their data in order to</i>	<i>Make careful observations – look for similarities and differences</i>	<i>Recognise when and how secondary sources might help them to answer questions that cannot be answered through practical investigations.</i> <i>Report on findings from enquiries</i>	<i>Start to make their own decisions about the most appropriate type of scientific enquiry they might use to answer questions. Set up simple practical enquiries, comparative and fair tests</i> <i>Recognise when a simple fair test is necessary and help to decide how to set it up.</i>	<i>Make systematic and careful observations. Help to make decisions about what observations to make, how long to make them for and the type of simple equipment that might be used. Take accurate measurements using standard units learn how to use a range of (new) equipment, such as data loggers / thermometers appropriately.</i>

	draw simple conclusions and answer questions.				
Vocabulary	Force, push, pull, twist, contact force, non-contact force, magnetic force, magnet, strength, bar magnet, ring magnet, button magnet, horseshoe magnet, attract, repel, magnetic material, metal, iron, steel, poles, north pole, south pole	Nutrition, nutrients, carbohydrates, sugars, protein, vitamins, minerals, fibre, fat, water, skeleton, bones, muscles, support, protect, move, skull, ribs, spine, muscles, joints	Rock, stone, pebble, boulder, grain, crystals, layers, hard, soft, texture, absorb water, soil, fossil, marble, chalk, granite, sandstone, slate, soil, peat, sandy/chalk/clay soil	Light, light source, dark, absence of light, transparent, translucent, opaque, shiny, matt, surface, shadow, reflect, mirror, sunlight, dangerous	Photosynthesis, pollen, insect/wind pollination, seed formation, seed dispersal (wind dispersal, animal dispersal, water dispersal)

Year 4	Autumn I	Autumn II	Spring I	Spring II	Summer I	Summer II
Science Strand	States of matter  chemistry	Living Things and their habitats  biology	Animals including humans  biology	Sound  physics	Electricity  physics	
Learning Objectives	Lesson 1: I know the properties of solids, liquids and gases. Lesson 2: I know how to compare and group materials together.	Lesson 1/2: I know a variety of ways to group living things. Lesson 3: I know how to use classification keys to	Lesson 1: I know how to compare the teeth of carnivores and herbivores and know why they are different. Lesson 2:	Lesson 1: I know that sounds are made when something is vibrating. Lesson 2: I know that vibrations from sounds travel	*children should be given appropriate precautions for working safely with electricity. Lesson 1: I know common household appliances that run on electricity. Lesson 2:	

	Lesson 3: I know how to compare and group materials with unusual properties together. Lesson 4: I know how some materials change state when heated or cooled. Lesson 5: I know how to observe and record materials changing state. Lesson 6: I know the part played by evaporation and condensation in the water cycle.	group and identify living things (animals) Lesson 4: I know how to use classification keys to group and identify living things (plants). Lesson 5: I know that environments can change in negative ways because of human impact. Lesson 6: I know that environments can change in positive ways because of human impact.	I know the different types of teeth in humans and their functions. Lesson 3: I know how to look after my teeth and why it is important to do so. Lesson 4: I know the effects of different food and drink on my teeth. Lesson 5: I know how to describe the functions of the basic digestive system in humans. Lesson 6: I know how to identify producers, predators and prey in food chains.	through a medium to the ear. Lesson 3: I know the parts of the ear and their functions. Lesson 4: I know the relationship between volume and the strength of the vibrations that produced it. Lesson 5: I know the relationship between pitch and the features of the object that produced it. Lesson 6: I know how the distance from the sound source affects the volume of the sound.	I know how to draw simple series circuits and can label the basic parts. Lesson 3: I know how to build simple series circuits and can identify the basic parts. Lesson 4: I know whether a circuit will light a lamp. Lesson 5: I know the role of a switch in a circuit. Lesson 6: I know common conductors and insulators. I know metals are good conductors. Lesson 7: I know different factors which may affect conductivity.
Specific Scientific Knowledge (to be learned by the end of the unit)	Solids have a fixed shape and volume. A solid material will keep its shape if it is transferred from one container to another. Liquids have no fixed shape and will take on the shape of the container they are transferred into. The	Animals with a spine are called vertebrates. All mammals, birds, fish, amphibians and reptiles are vertebrates. Each vertebrate group has different physical features. Animals with a spine are called vertebrates. Animals without a spine are called invertebrates.	Carnivores have long, sharp teeth to help them with ripping and tearing through meat. Herbivores have large, flat teeth to grind and chew through grasses and plants. Omnivores have a combination of sharp and flat teeth, allowing	A vibration is a quick back-and-forth movement. Sounds are made when objects vibrate. The vibrations travel from the object to our ears. Sounds can be heard when these vibrations reach our ears.	Many appliances use electricity and must be plugged into a socket for the electricity to pass through the circuit. Other appliances may need batteries to power the energy around a circuit. Some appliances use electricity to heat things up (cooker hobs) and cool things down (fridges and freezers). Electricity can be extremely harmful. Liquids and wet hands should be kept away from electrical appliances and circuits. A circuit must have a closed path so that electrical energy can pass through.

	volume will remain the same. Gases have no fixed shape and no fixed volume. They will spread out and fill any available space. Some solids, such as sand, salt, flour and rice, can be poured but they are still classified as solid materials. Liquids maintain the same volume when transferred to different containers. Some liquids, like water, flow easily while other liquids, such as treacle, do not flow as easily. Some materials can change state between a solid, a liquid and a gas. Water can be a solid (ice), a liquid (water) or a gas (water vapour). When heat is applied to ice, the ice melts and turns to water. When water is heated it turns into a gas. To change water vapour (gas) back to water (liquid) it needs to be cooled down as it returns to its liquid state.	Insects and spiders are invertebrates. Slugs and snails are soft-bodied invertebrates. Non-flowering plants include mosses and ferns. Flowering plants can produce flowers and fruit. Deciduous trees lose their leaves in autumn. Evergreen trees keep their leaves all year round. Classification keys can be used to classify plants. Closed questions are used in classification keys.	them to tear through meat and grind plants. Humans have four different types of teeth – incisors, canines, premolars and molars. The incisors are used for biting into food. The canine teeth are sharp and pointed to help with ripping and tearing. The premolars are teeth between the canines and molars. They are used for guiding food towards the molars at the back of the mouth. The molars are the large teeth at the back of the jaw. They are used for grinding and chewing food. Human teeth have layers which include enamel, pulp and roots. Enamel protects the sensitive parts of the tooth underneath. The human mouth is full of different germs which feed on sugar in the mouth and can cause plaque to build up. If plaque is not removed from the teeth, it can	Sound vibrations travel through the air. The outer ear funnels the vibrations into the ear canal. The vibrations move down the ear canal. The vibrations are passed to the ear drum. The vibrations from the ear drum are passed along the ear bones and into the cochlea. Signals are then sent to the brain, where they are processed and interpreted as sounds we understand. Sound volume is measured in decibels (dB). A decibel is a measure of the loudness of sounds. A decibel meter can be used to measure the loudness of sounds. If humans are exposed to loud sounds too often, their hearing can be damaged. The louder the sound, the bigger the vibration. The quieter the sound, the smaller the vibration.	Circuits can include bulbs, wires, switches, buzzers and cells connected in one loop. If a circuit does not have a source of energy, such as a cell or battery, then electricity cannot flow around it. A bulb will not light in a circuit if it is not in a complete loop with the cell. A bulb will not light in a circuit if a switch is open. A conductor is a material which allows energy to pass through it. An insulator does not allow energy to pass through it. Some materials can be used to connect a gap in a circuit, others cannot.
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	To change water to ice, it needs to be frozen. Nearly three-quarters of planet Earth is covered in water. Water is in constant movement through a process called the water cycle. As the water moves it is in different states of matter. Evaporation is one stage of the water cycle. Evaporation is when a liquid changes state to a gas. Condensation is when a gas changes state to a liquid.		cause the enamel layer to rot away, exposing the sensitive layers underneath. We can look after our teeth by brushing them twice a day, reducing our sugar intake and visiting the dentist regularly. Digestion is the breaking down of larger pieces of food into smaller pieces so the body can use it for energy. The digestion process begins when food is bitten by the teeth. Saliva turns smaller pieces of food into a more liquid substance so it travels smoothly down the oesophagus to the stomach. The stomach churns the food, and adds acid to break it down further before the partially digested food passes to the small intestine. The small intestine absorbs nutrients from the food and passes the remaining food to the large intestine.		
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			The large intestine absorbs water from the remaining food, and then passes the remaining waste to the rectum. A food chain shows an order of living things, to show how energy is transferred when one living thing eats another. Food chains begin with a producer. The arrows in a food chain show the energy transfer from one food source to another.		
Working Scientifically	Making observations; making predictions; planning a comparative and fair test; recording results	Making observation; naturally occurring patterns/relationships; identifying and classifying;	Making observations; making predictions; planning a comparative and fair test; recording results; changes over time,	Making observations; making predictions; planning a comparative and fair test; recording results	Making observations; making predictions; planning a comparative and fair test; recording results Making observations; making predictions; planning a comparative and fair test; recording results
Vocabulary	Solid, liquid, gas, state change, melting, freezing, melting point, boiling point, evaporation, temperature, water cycle	Classification, classification keys, environment, habitat, human impact, positive, negative, migrate, hibernate	Digestive system, digestion, mouth, teeth, saliva, oesophagus, stomach, small intestine, nutrients, large intestine, rectum, anus, teeth, incisor, canine, molar, premolars, herbivore, carnivore, omnivore, producer, predator, prey, food chain	Sound, source, vibrate, vibration, travel, pitch (high, low), volume, faint, loud, insulation	Electricity, electrical appliance/device, mains, plug, electrical circuit, complete circuit, component, cell, battery, positive, negative, connect/connections, bulb, switch, buzzer, motor, conductor, insulator, metal, non-metal, symbol Open/closed, complete loop

Year 5	Autumn I	Autumn II	Spring I	Spring II	Summer I	Summer II
Science Strand	Living things and their habitats  biology	Earth & Space  physics	Materials  chemistry		Forces  physics	Animals including humans  biology
Learning Objectives	Lesson 1: I know how to describe the differences in the life cycles of an amphibian and a reptile. Lesson 2: I know how to describe the differences in the life cycles of an insect and a bird. Lesson 3: I know how to compare aspects of the lifecycle of mammals. Lesson 4: I know how to describe the process of reproduction in some plants and animals. Lesson 5: I know who David Attenborough is and why he is important	Lesson 1: I know the planets and objects that make up the Solar System. Lesson 2: I know how to describe the movement of the Earth, and other planets, relative to the Sun. Lesson 3: I know how to describe the movement of the Moon relative to Earth. Lesson 4: I know how to explain day and night and the apparent movement of the sun across the sky. Lesson 5: I know how the understanding of the solar system has changed	Lesson 1: I know how to compare and group together everyday materials based on their properties Lesson 2 and 3: I know how to compare and group together everyday materials based on their properties – planning and investigating thermal conductivity and insulation. Lesson 4: I know the reasons for the use of different everyday materials in different everyday objects. Lesson 5: I know that dissolving, mixing and changes of state are reversible changes. Lesson 6: I know that some changes are irreversible, and form new materials. Lesson 7 and 8: I know how to separate mixtures through filtering, sieving or evaporating – planning and investigating how to clean dirty water.	Lesson 1: I know why unsupported objects fall towards the Earth Lesson 2: I know how scientists such as Isaac Newton developed the theory of gravitation Lesson 3: I know the effects of air resistance (investigation) Lesson 4: I know the effects of water resistance (investigation) Lesson 5: I know the effects of friction (investigation) Lesson 6: I know that levers and pulleys allow a smaller	(This area of science links closely with the PSHE strand being taught at the same time) Lesson 1 and 2: I know the different stages of maturity of a human, and Lesson 3: I know how quickly a human grows when it is a baby Lesson 4: I know the changes associated with puberty and what causes them	

		over time to what we know of today (WS). Lesson 6: I know that objects fall to earth because of the force of gravity acting between Earth and the object (from Forces but connected to our learning now)	Lesson 9: I know	force to have a greater effect.	
Specific Scientific Knowledge (to be learned by the end of the unit)	I know Plants and animals reproduce when they are adults I know Most animals reproduce sexually I know Animals have offspring that grow into adults. I know Some offspring go through different changes and stages of growth in their lifecycles.	I know Objects like planets, moons and stars spin. I know Smaller mass objects like planets orbit large mass objects like stars. I know Stars produce vast amounts of heat and light. I know All other objects are lumps of rock, metal or ice and can be seen because they reflect the light of stars.	I know When two or more substances are mixed and remain present the mixture can be separated. I know Some changes can be reversed and some can't. I know Materials change state by heating and cooling.	I know Air resistance and water resistance are forces against motion caused by objects having to move air and water out of their way. I know Friction is a force against motion caused by two surfaces rubbing against each other. I know Some objects require large forces to make them move; gears, pulley and levers can reduce the force needed to make things move	•I know Different animals mature at different rates and live to different ages. •I know Puberty is something which prepares our bodies for being adults, and reproduction •I know Hormones control these changes; which can be physical and/or emotional. •I know Some organisms reproduce sexually where offspring inherit information from both parents. •I know Some organisms reproduce asexually
Working Scientifically	Observation; using appropriate secondary sources; predicting from data; causal relationships; identify and classify	Observation; Changes over time; making predictions	Observation; Changes over time; recording data; making predictions; identify and classify setting up comparative and fair tests; recording data; using measuring equipment	Comparative and fair tests; recording data; identify evidence to support or refute ideas	Making predictions; planning a comparative and fair test; using language/illustrations to communicate a scientific idea

Vocabulary	Life cycle, reproduce, sexual, sperm, fertilises, egg, live young, metamorphosis, asexual, plantlets, runners, bulbs, cuttings	Earth, Sun, Moon, (Mercury, Jupiter, Saturn, Venus, Mars, Uranus, Neptune), spherical, solar system, rotates, star, orbit, planets	Thermal/electrical insulator/conductor, change of state, mixture, dissolve, solution, soluble, insoluble, filter, sieve, reversible/non-reversible change, burning, rusting, new material	Force, gravity, Earth, air resistance, water resistance, friction, mechanisms, simple machines, levers, pulleys, gears	Puberty – the vocabulary to describe sexual characteristics
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Year 6	Autumn I	Autumn II	Spring I	Spring II	Summer I	Summer II
Science Strand	Living things and their habitat  biology	Evolution and inheritance  biology	Light  physics	Electricity (each objective is given 2 sessions because of the amount of practical work in making and testing the circuits)  physics	Animals including humans (some of these objectives tie in directly to the DARE program Y6 will complete as part of their PSHE/transition)  biology	
Learning Objectives	Lesson 1: I know how to sort and group vertebrates according to their observable features. Lesson 2:	Lesson 1: I know that living things have changed over time and fossils provide information about living things that inhabited the Earth millions of years ago.	Lesson 1: I know that light appears to travel in straight lines Lesson 2: I know that objects are seen because our eyes	<i>*children should be given appropriate precautions for working safely with electricity.</i> Lesson 1 and 2: I know how to represent a simple circuit in a	Lesson 1: I know the name of the main parts of the human circulatory system I know how the heart, blood and blood vessels work. Lesson 2: I know the ways in which nutrients and water are transported within animals and humans.	

	I know how to sort and group invertebrates according to their observable features. Lesson 3: I know how to classify living things using a branching diagram. Lesson 4 and 5: I know how to communicate ideas about living things using appropriate scientific language (WS) I know how living things are classified based on similarities and differences. Lesson 6: I know micro-organisms are living things that are classified into groups based on their similarities and differences	Lesson 2: I know that living things produce offspring of the same kind, but they are not identical to their parents. Lesson 3: I know that which characteristics are inherited and which characteristics are learned. Lesson 4: I know that animals and plants are adapted to suit their environment and that adaption may lead to evolution. Lesson 5: As above Moths camouflage investigation Lesson 6: I know how Charles Darwin developed his ideas on evolution and why they were so important.	see the light they give out or reflect. Lesson 3: I know that light travels from a source to our eyes. Lesson 4: I know that shadows have the same shape as the objects that cast them because light travels in a straight line Lesson 5: I know why shadows might appear to change.	diagram using the correct recognised symbols. Lesson 3 and 4: I know the relationship between the brightness of a lamp with the number and voltage of cells in a circuit Lesson 5 and 6: I know how to compare and give reasons for the variations in how circuit components function.	Lesson 3 : I know the impact of diet, exercise, drugs and lifestyle on the function of our bodies. Lesson 4/5: I know the impact of diet, exercise, drugs and lifestyle on the function of our bodies. - Investigate how different athletes train. - Investigate the short-term effects of exercise on our bodies (connect to PE)
Specific Scientific Knowledge (to be learned by the end of the unit)	I know Animals can be classified as vertebrates or invertebrates I know Vertebrates include: mammals,	I know Variation exists within a population (and between offspring of some plants)	I know Animals see light sources when light travels from the source into their eyes.	I know Batteries are a store of energy. This energy pushes electricity round the circuit. When the battery's energy is	• I know The heart pumps blood around the body. • I know Oxygen is breathed into the lungs where it is absorbed by the blood. • I know Muscles need oxygen to release energy from food to do work. (Oxygen is taken into the blood in

	reptiles, amphibians, birds and fish I know Main types of invertebrate are: insects, spiders, snails and worms I know Plants can be classified as flowering or non-flowering I know micro-organisms are: bacteria, viruses or fungi. Some are harmful, some are harmless and some are helpful.	I know Organisms best suited to their environment are more likely to survive long enough to reproduce. I know Organisms are best adapted to reproduce are more likely to do so. I know Organisms reproduce and offspring have similar characteristic patterns. I know Competition exists for resources and mates.	I know Animals see objects when light is reflected off that object and enters their eyes. I know Light reflects off all objects (unless they are black). Non shiny surfaces scatter the light so we don't see the beam. I know Light travels in straight lines	gone it stops pushing. Voltage measures the 'push.' I know The greater the current flowing through a device the harder it works. I know Current is how much electricity is flowing round a circuit. I know When current flows through wires heat is released. The greater the current, the more heat is released.	the lungs; the heart pumps the blood through blood vessels to the muscles; the muscles take oxygen and nutrients from the blood.)
Working Scientifically	observation over time; creating presentations to communicate ideas; changing ideas over time; using secondary sources to differentiate fact from opinion; classifying	using secondary sources to differentiate fact from opinion; changing ideas over time;	planning and controlling variables in a fair test; recording data	planning and controlling variables in a test; setting up comparative tests; scientific diagrams	planning comparative and fair tests; recording data; observations over time; measuring with precision
Vocabulary	Vertebrates, fish, amphibians, reptiles, birds, mammals, invertebrates, insects, spiders, snails, worms, flowering, non-flowering	Offspring, sexual reproduction, vary, characteristics, suited, adapted, environment, inherited, species, fossils	As for Year 3 - Light, plus straight lines, light rays	Circuit, complete circuit, circuit diagram, circuit symbol, cell, battery, bulb, buzzer, motor, switch, voltage	Heart, pulse, rate, pumps, blood, blood vessels, transported, lungs, oxygen, carbon dioxide, nutrients, water, muscles, cycle, circulatory system, diet, exercise, drugs, lifestyle