Science Curriculum Coverage

KS1 -Reception/Year 1						
Cycle 1	**Belonging** *Home Is Where The Heart Is*	**Aspiration** *What Is Greatness?*	**Respect** *What Are Our Roots?*	**Responsibility** *How Are We Looking After Our World For Future Generations?*	**Creativity** *What Dreams Have Shaped The Ideas of our Great Visionaries?*	**Wonder** How does the land shape our times?
Unit	Everyday Materials (Identification)	Everyday Materials (Describe and Group)	Plants	Animals including Humans	Seasonal Changes	Animals including Humans
NC Objectives	Distinguish between an object and the material from which it is made Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock Describe the simple physical properties of a variety of everyday materials	Describe the simple physical properties of a variety of everyday materials Compare and group together a variety of everyday materials on the basis of their simple physical properties	Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees Identify and describe the basic structure of a variety of common flowering plants, including trees	Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals Identify and name a variety of common animals that are carnivores, herbivores and omnivores Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets)	Observe changes across the 4 seasons Observe and describe weather associated with the seasons and how day length varies	Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense
Question	What does it mean to think like a Scientist?	How can we describe everyday materials?	How can we identify plants?	How are animals different?	How does the weather change through the year?	What are our senses and how do we use them?
Vocabulary (Tier 3)	**Material** – the substance something is made from **Object** – a thing that can be seen or touched, made from materials **Property** – a characteristic of a material that helps us describe it **Texture** – how a material feels (e.g., smooth, rough) **Hardness** – how difficult a material is to scratch or change shape	**Property** – a feature that helps us describe a material **Compare** – to look at two or more materials to find similarities and differences **Sort** – to put materials into groups based on shared features **Group** – a collection of materials that share the same property **Opaque** – does not let light through **Transparent** – lets light through so you can see clearly	**Deciduous** – trees that lose their leaves in autumn **Evergreen** – trees that keep their leaves all year round **Flowering plant** – a plant that grows flowers as part of its life cycle **Wild plant** – a plant that grows naturally without being planted by people **Garden plant** – a plant that is intentionally grown and cared for in gardens **Structure** – the parts that make up a plant	**Amphibian** – a cold-blooded animal that lives part of its life in water and part on land **Reptile** – a cold-blooded animal with scaly skin that lays eggs on land **Mammal** – a warm-blooded animal with hair or fur that usually gives birth to live young **Bird** – a warm-blooded animal with feathers, wings and a beak **Fish** – a cold-blooded animal that lives in water and breathes using gills **Carnivore** – an animal that eats other animals	**Season** – one of the four parts of the year with different weather patterns **Temperature** – how warm or cold the air is **Precipitation** – water falling from the sky (rain, snow, sleet, hail) **Forecast** – a prediction of what the weather will be like **Wind speed** – how fast the air is moving **Daylight** – the amount of light during the day from the Sun **Rotation** – the spinning of the Earth that causes day and night	**Head** – the top part of the body that contains the brain, eyes, ears, nose, and mouth **Eye** – the body part used for seeing **Ear** – the body part used for hearing **Nose** – the body part used for smelling **Mouth** – the body part used for tasting and speaking **Hand** – the body part used for touching and holding **Foot** – the body part used for standing and walking

	Absorbency – how well a material soaks up liquid **Transparency** – how much light can pass through a material **Rigidity** – how stiff or unbending a material is **Flexibility** – how easily a material bends without breaking **Durability** – how well a material withstands wear, pressure, or damage	**Translucent** – lets some light through but you cannot see clearly **Waterproof** – does not let water pass through **Magnetic** – attracted to a magnet **Conduct** – allow something (like heat or electricity) to pass through	**Root** – the part of the plant that anchors it and takes in water and nutrients **Stem** – the part that supports the plant and carries water to the leaves **Leaf** – the part of a plant that makes food using sunlight **Petal** – the colourful part of a flower that attracts insects	**Herbivore** – an animal that eats plants **Omnivore** – an animal that eats both plants and animals **Structure** – the body parts that make up an animal (e.g., wings, fins, fur, scales) **Habitat** – the natural environment where an animal lives	**Sunrise** – when the Sun first appears in the morning **Sunset** – when the Sun disappears in the evening **Climate** – the usual pattern of weather in a place over time	**Sense** – a way the body receives information from the environment **Brain** – the organ inside the head that controls the body and senses **Skin** – the body's outer layer that allows us to feel touch, temperature, and pain
Cycle 2	**Trust and Collaboration** *How are we stronger together?*	**Perseverance** *What Matters Most, The Journey or the Destination?*	**Honesty** *How Are There Two Sides To Every Story?*	**Justice** *Who Holds the Power?*	**Kindness** *How Does Kindness Shape Our Future?*	**Wisdom** *What Have We Learned From The Past?*
Unit	Animals including Humans	Everyday Materials (Identification)	Everyday Materials (Describe and Group)	Animals including Humans	Plants	Seasonal Changes
NC Objectives	Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals identify and name a variety of common animals that are carnivores, herbivores and omnivores Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets)	Distinguish between an object and the material from which it is made Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock	Describe the simple physical properties of a variety of everyday materials Compare and group together a variety of everyday materials on the basis of their simple physical properties	Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense	Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees Identify and describe the basic structure of a variety of common flowering plants, including trees	Observe changes across the 4 seasons Observe and describe weather associated with the seasons and how day length varies
Question	How are animals different?	Where can we find everyday materials?	How can we describe everyday materials?	What are our senses and how do we use them?	What parts make up a plant?	How does the weather change through the year?
Vocabulary (Tier 3)	**Amphibian** – a cold-blooded animal that lives part of its life	**Material** – the substance something is made from	**Property** – a feature that helps us describe a material	**Head** – the top part of the body that contains the brain, eyes, ears, nose, and mouth	**Deciduous** – trees that lose their leaves in autumn	**Season** – one of the four parts of the year with different weather patterns

	in water and part on land **Reptile** – a cold-blooded animal with scaly skin that lays eggs on land **Mammal** – a warm-blooded animal with hair or fur that usually gives birth to live young **Bird** – a warm-blooded animal with feathers, wings and a beak **Fish** – a cold-blooded animal that lives in water and breathes using gills **Carnivore** – an animal that eats other animals **Herbivore** – an animal that eats plants **Omnivore** – an animal that eats both plants and animals **Structure** – the body parts that make up an animal (e.g., wings, fins, fur, scales) **Habitat** – the natural environment where an animal lives	**Object** – a thing that can be seen or touched, made from materials **Property** – a characteristic of a material that helps us describe it **Texture** – how a material feels (e.g., smooth, rough) **Hardness** – how difficult a material is to scratch or change shape **Absorbency** – how well a material soaks up liquid **Transparency** – how much light can pass through a material **Rigidity** – how stiff or unbending a material is **Flexibility** – how easily a material bends without breaking **Durability** – how well a material withstands wear, pressure, or damage	**Compare** – to look at two or more materials to find similarities and differences **Sort** – to put materials into groups based on shared features **Group** – a collection of materials that share the same property **Opaque** – does not let light through **Transparent** – lets light through so you can see clearly **Translucent** – lets some light through but you cannot see clearly **Waterproof** – does not let water pass through **Magnetic** – attracted to a magnet **Conduct** – allow something (like heat or electricity) to pass through	**Eye** – the body part used for seeing **Ear** – the body part used for hearing **Nose** – the body part used for smelling **Mouth** – the body part used for tasting and speaking **Hand** – the body part used for touching and holding **Foot** – the body part used for standing and walking **Sense** – a way the body receives information from the environment **Brain** – the organ inside the head that controls the body and senses **Skin** – the body's outer layer that allows us to feel touch, temperature, and pain	**Evergreen** – trees that keep their leaves all year round **Flowering plant** – a plant that grows flowers as part of its life cycle **Wild plant** – a plant that grows naturally without being planted by people **Garden plant** – a plant that is intentionally grown and cared for in gardens **Structure** – the parts that make up a plant **Root** – the part of the plant that anchors it and takes in water and nutrients **Stem** – the part that supports the plant and carries water to the leaves **Leaf** – the part of a plant that makes food using sunlight **Petal** – the colourful part of a flower that attracts insects	**Temperature** – how warm or cold the air is **Precipitation** – water falling from the sky (rain, snow, sleet, hail) **Forecast** – a prediction of what the weather will be like **Wind speed** – how fast the air is moving **Daylight** – the amount of light during the day from the Sun **Rotation** – the spinning of the Earth that causes day and night **Sunrise** – when the Sun first appears in the morning **Sunset** – when the Sun disappears in the evening **Climate** – the usual pattern of weather in a place over time

LOWER KS2 – YEAR 2/3/4

Cycle 1	**Belonging** *Home Is Where The Heart Is*	**Aspiration** *What Is Greatness?*	**Respect** *What Are Our Roots?*	**Responsibility** *How Are We Looking After Our World For Future Generations?*	**Creativity** *What Dreams Have Shaped The Ideas of our Great Visionaries?*	**Wonder** How does the land shape our times?
Unit	Animals including Humans (Y2)	Animals including humans (Y4)	Light (Y3)	Rocks (Y3)	States of Matter (Y4)	Plants (Y2)
Question	What does it mean to be a Scientist?	How does our digestive system work?	How do systematic observations help us to understand the nature of light?	How does a scientific approach underpin our understanding of the past, and preserve our future?	How does the water cycle work?	How do plants grow?

NC Objectives	Notice that animals, including humans, have offspring which grow into adults Find out about and describe the basic needs of animals, including humans, for survival (water, food and air) Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene	Describe the simple functions of the basic parts of the digestive system in humans Identify the different types of teeth in humans and their simple functions Construct and interpret a variety of food chains, identifying producers, predators and prey	Recognise that they need light in order to see things and that dark is the absence of light Notice that light is reflected from surfaces Recognise that light from the sun can be dangerous and that there are ways to protect their eyes Recognise that shadows are formed when the light from a light source is blocked by an opaque object Find patterns in the way that the size of shadows change	Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties Describe in simple terms how fossils are formed when things that have lived are trapped within rock Recognise that soils are made from rocks and organic matter	Compare and group materials together, according to whether they are solids, liquids or gases 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) identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature	Observe and describe how seeds and bulbs grow into mature plants Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy
Vocabulary (Tier 3)	**Offspring** – the young of an animal or human **Adult** – a fully grown animal or human **Growth** – the process of becoming bigger or more mature **Nutrition** – the food and drink that animals and humans need to stay healthy **Hydration** – the process of taking in water to stay healthy **Air** – the gas we breathe in to survive **Exercise** – physical activity that keeps the body healthy and strong **Hygiene** – practices that keep the body clean and prevent illness **Diet** – the type and amount of food eaten regularly	**Digestive system** – the organs that break down food into nutrients the body can use **Mouth** – where food enters, is chewed, and mixed with saliva **Saliva** – the liquid in the mouth that begins to break down food **Esophagus** – the tube that carries food from the mouth to the stomach **Stomach** – the organ where food is mixed with acids and enzymes to break it down **Small intestine** – where most nutrients from food are absorbed **Incisor** – a tooth used for cutting food **Canine** – a tooth used for tearing food **Molar** – a tooth used for grinding food **Food chain** – a sequence showing how energy passes from	**Light** – the form of energy that lets us see things **Dark** – the absence of light **Reflection** – when light bounces off a surface **Surface** – the outside layer of an object that light can reflect from **Sunlight** – the light coming from the Sun **Opaque** – a material that does not let light pass through **Transparent** – a material that lets light pass through clearly **Translucent** – a material that lets some light through but not clearly **Shadow** – a dark shape formed when an object blocks light **Light source** – something that makes its own light (like a lamp or the Sun)	**Rock** – a naturally occurring solid material made from minerals **Mineral** – a naturally occurring substance that rocks are made from **Appearance** – how something looks, including colour, pattern, and texture **Property** – a characteristic used to describe or compare materials **Texture** – how the surface of a rock feels (e.g., smooth, rough) **Hardness** – how resistant a rock is to scratching or breaking **Fossil** – the preserved remains or imprint of a plant or animal from the past **Formation** – the process by which rocks or fossils are created **Soil** – the top layer of the Earth made from rock, minerals, and organic matter **Organic matter** – material that comes from living	**Solid** – a state of matter with a fixed shape and volume **Liquid** – a state of matter that takes the shape of its container but has a fixed volume **Gas** – a state of matter that spreads out to fill any space available **State change** – when a material changes from solid to liquid, liquid to gas, or vice versa **Melting** – the process of a solid turning into a liquid **Freezing** – the process of a liquid turning into a solid **Evaporation** – when a liquid turns into a gas **Condensation** – when a gas turns into a liquid **Temperature** – how hot or cold something is, measured in degrees Celsius (°C)	**Seed** – the part of a plant that can grow into a new plant **Bulb** – an underground part of a plant that can grow into a new plant **Germination** – the process of a seed starting to grow **Shoot** – the part of a plant that grows upwards towards the light **Root** – the part of a plant that grows downwards and absorbs water and nutrients **Stem** – the part of a plant that supports it and transports water and nutrients **Leaf** – the part of a plant that makes food using sunlight **Water** – essential for a plant's growth and survival **Light** – needed for photosynthesis so the plant can make food **Temperature** – the warmth of the environment,

	Survival – the ability to stay alive by meeting basic needs	producers to consumers, including predators and prey		things, such as plants and animals		which affects how well a plant grows
Cycle 2	**Trust and Collaboration** *How are we stronger together?*	**Perseverance** *What Matters Most, The Journey or the Destination?*	**Honesty** *How Are There Two Sides To Every Story?*	**Justice** *Who Holds the Power?*	**Kindness** *How Does Kindness Shape Our Future?*	**Wisdom** *What Have We Learned From The Past?*
Question	How are animals suited to their habitats?	Why is what we eat important?	What is sound?	How do forces cause movement?	How do plants survive?	How can we stay healthy?
Unit	Living Things and their Habitats (Y2) - Rainforest	Animals including humans (Y3)	Sound (Y4)	Forces and Magnets (Y3)	Plants (Y3)	Animals including Humans (Y2)
NC Objectives	Explore and compare the differences between things that are living, dead, and things that have never been alive 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 Identify and name a variety of plants and animals in their habitats, including microhabitats Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food	Identify that animals, 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 Identify that humans and some other animals have skeletons and muscles for support, protection and movement	Identify how sounds are made, associating some of them with something vibrating Recognise that vibrations from sounds travel through a medium to the ear find patterns between the pitch of a sound and features of the object that produced it Find patterns between the volume of a sound and the strength of the vibrations that produced it Recognise that sounds get fainter as the distance from the sound source increases	Compare how things move on different surfaces notice that some forces need contact between 2 objects, but magnetic forces can act at a distance Observe how magnets attract or repel each other and attract some materials and not others Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials Describe magnets as having 2 poles Predict whether 2 magnets will attract or repel each other, depending on which poles are facing	Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers Explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant Investigate the way in which water is transported within plants Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal	Notice that animals, including humans, have offspring which grow into adults Find out about and describe the basic needs of animals, including humans, for survival (water, food and air) Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene
Question	What habitats exist in the rainforest?	Why is what we eat important?	What is sound and how do we hear it?	How do objects move and what is magnetism?	What do plants need to survive?	How can we build a strong, healthy body?

Vocabulary (Tier 3)	organism – any living thing, such as a plant, animal, or microbe. habitat – the natural environment where an organism lives. microhabitat – a very small, specific part of a habitat (e.g., under a log). nutrition – the process of obtaining food to grow and survive. food chain – a sequence showing how energy passes from one organism to another. producer – a plant that makes its own food using sunlight. consumer – an animal that eats plants or other animals. predator – an animal that hunts and eats other animals. prey – an animal that is hunted and eaten by a predator. 	**nutrition** – the process of taking in food to stay healthy and grow. **nutrients** – the useful parts of food (like vitamins, minerals, proteins) that the body needs. **carbohydrates** – nutrients that give the body energy (e.g., bread, pasta, rice). **proteins** – nutrients that help the body grow and repair itself (e.g., meat, beans). **skeleton** – the framework of bones that supports and protects the body. **muscles** – tissues that contract and relax to help the body move. **support** – the role of bones and muscles in holding the body upright. **protection** – the way bones shield important organs (e.g., the skull protects the brain). **movement** – the action created when muscles pull on bones. **vertebrate** – an animal with a backbone (including humans).	**vibration** – rapid back-and-forth movement that produces sound. **medium** – the material (air, water, solid) through which sound travels. **sound wave** – the movement of vibrations through a medium. **pitch** – how high or low a sound is. **frequency** – the number of vibrations per second, linked to pitch. **volume** – how loud or quiet a sound is. **amplitude** – the size of vibrations, linked to volume. **sound source** – the object that makes the sound. **echo** – a reflected sound heard after bouncing off a surface. **distance** – how far sound travels, affecting how faint it becomes.	**force** – a push or pull that changes how something moves. **friction** – the force that slows movement when two surfaces rub together. **magnet** – an object that can attract certain materials like iron. **magnetic field** – the invisible area around a magnet where it can pull or push. **attract** – when a magnet pulls objects or other magnets towards it. **repel** – when a magnet pushes objects or other magnets away. **pole** – the ends of a magnet, called north and south. **contact force** – a force that needs two objects to touch (like pushing or pulling). **non-contact force** – a force that acts without touching, like magnetism. **magnetic material** – a substance (like iron, nickel, cobalt) that magnets can attract.	**roots** – the part of a plant that anchors it and absorbs water and nutrients from the soil. **stem/trunk** – the structure that supports the plant and transports water and nutrients. **leaves** – plant parts that make food through photosynthesis. **flowers** – reproductive structures that produce seeds. **photosynthesis** – the process by which plants use sunlight to make food. **nutrients** – substances from the soil that help plants grow. **xylem** – tubes inside the plant that carry water from the roots to the leaves. **pollination** – the transfer of pollen from one flower to another, leading to seed formation. **seed dispersal** – the spreading of seeds away from the parent plant. **life cycle** – the stages a plant goes through from seed to adult plant and back to seed.	**offspring** – the young of an animal or human (e.g., puppies are dog offspring). **adult** – the fully grown stage of an animal or human. **survival** – staying alive by meeting basic needs. **nutrition** – the food needed for growth, energy, and health. **exercise** – physical activity that keeps the body strong and healthy. **hygiene** – keeping clean to stay healthy and prevent illness. **growth** – the process of getting bigger and developing over time. **life cycle** – the stages an animal or human goes through from birth to adulthood. **respiration** – the process of breathing in air to get oxygen. **balanced diet** – eating the right amounts of different types of food.
Cycle 3	**Belonging** *Home Is Where The Heart Is*	**Aspiration** *What Is Greatness?*	**Respect** *What Are Our Roots?*	**Responsibility** *How Are We Looking After Our World For Future Generations?*	**Creativity** *What Dreams Have Shaped The Ideas of our Great Visionaries?*	**Wonder** *How does the land shape our lives?*
Unit	Uses of Everyday Materials (Y2)	States of Matter (Y4)	Animals including humans (Y3)	Electricity (Y4)	Living Things and their Habitats (Y2)	Living things and their habitats (Y4) – Coastal
NC Objectives	Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock,	Compare and group materials together, according to whether they are solids, liquids or gases	Identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get	Identify common appliances that run on electricity construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers	Explore and compare the differences between things that are living, dead, and things that have never been alive	Recognise that living things can be grouped in a variety of ways Explore and use classification keys to help group, identify and name a

	paper and cardboard for particular uses Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching	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) identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature	nutrition from what they eat Identify that humans and some other animals have skeletons and muscles for support, protection and movement	Identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit Recognise some common conductors and insulators, and associate metals with being good conductors	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 Identify and name a variety of plants and animals in their habitats, including microhabitats Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food	variety of living things in their local and wider environment Recognise that environments can change and that this can sometimes pose dangers to living things
Question	How can we think like a scientist when exploring everyday materials in our locality?	How does the water cycle work?	Why is what we eat important?	How can we harness and use the electrical energy safely?	Why are animals suited to their habitats?	How can we be responsible for coastal habitats?
Vocabulary (Tier 3)	**material** – the substance something is made from (e.g., wood, metal, plastic). **property** – a feature of a material, such as hard, soft, strong, or flexible. **suitability** – how well a material works for a particular use. **solid** – a state of matter where materials keep their shape unless changed. **flexible** – able to bend without breaking. **rigid** – stiff and not easily bent. **transparent** – allows light to pass through (like glass).	**solid** – a state of matter that keeps its shape (e.g., ice, wood). **liquid** – a state of matter that flows and takes the shape of its container (e.g., water). **gas** – a state of matter that spreads out to fill all available space (e.g., air). **state of matter** – the form a substance takes: solid, liquid, or gas. **melting** – the change from solid to liquid when heated. **freezing** – the change from liquid to solid when cooled. **evaporation** – when a liquid changes into a gas, often sped up by heat. **condensation** – when a gas changes back	**nutrition** – the process of taking in food to stay healthy and grow. **nutrients** – the useful parts of food (like vitamins, minerals, proteins) that the body needs. **carbohydrates** – nutrients that give the body energy (e.g., bread, pasta, rice). **proteins** – nutrients that help the body grow and repair itself (e.g., meat, beans). **skeleton** – the framework of bones that supports and protects the body. **muscles** – tissues that contract and relax to help the body move. **support** – the role of bones and muscles in holding the body upright.	**appliance** – a device that uses electricity to work (e.g., toaster, television). **circuit** – a path that electricity flows through. **series circuit** – a circuit where components are connected one after another in a single loop. **cell/battery** – a source of electrical energy that powers the circuit. **conductor** – a material that allows electricity to flow through it (e.g., metals). **insulator** – a material that does not allow electricity to flow through it (e.g., plastic, rubber). **switch** – a device that opens or closes a circuit to control the flow of electricity. **bulb/lamp** – a component that lights up	**organism** – any living thing, such as a plant, animal, or microbe. **habitat** – the natural environment where an organism lives. **microhabitat** – a very small, specific part of a habitat (e.g., under a log). **producer** – a plant that makes its own food using sunlight. **consumer** – an animal that eats plants or other animals. **food chain** – a sequence showing how energy passes from one organism to another. **predator** – an animal that hunts and eats other animals. **prey** – an animal that is hunted and eaten by a predator.	**classification** – the process of sorting living things into groups based on shared features. **classification key** – a tool with questions that helps identify and group living things. **species** – a group of living things that share characteristics and can reproduce. **characteristics** – features or traits used to identify and group organisms. **environment** – the surroundings where a plant or animal lives. **habitat** – the specific place where an organism lives and finds its needs. **adaptation** – a feature that helps a living thing survive in its environment.

	opaque – does not let light through (like wood or metal). **durable** – strong and long-lasting. **manipulation** – changing the shape of a material by squashing, bending, twisting, or stretching.	into a liquid, often when cooled. **temperature** – how hot or cold something is, measured in degrees Celsius (°C). **water cycle** – the continuous movement of water through evaporation, condensation, and precipitation.	**protection** – the way bones shield important organs (e.g., the skull protects the brain). **movement** – the action created when muscles pull on bones. **vertebrate** – an animal with a backbone (including humans).	when electricity flows through the circuit. **buzzer** – a component that makes a sound when electricity flows through the circuit. **complete loop** – a closed path that allows electricity to flow continuously.	**dependence** – the way living things rely on each other for survival (e.g., food, shelter). **nutrition** – the process of obtaining food to grow and survive.	**biodiversity** – the variety of different living things in an environment. **ecosystem** – a community of living things interacting with each other and their environment. **threat** – a danger or risk to living things, often caused by environmental change.
Upper Key Stage 2 Year 5/6						
Cycle 1	**Belonging** *Home Is Where The Heart Is*	**Aspiration** *What Is Greatness?*	**Respect** *What Are Our Roots?*	**Responsibility** *How Are We Looking After Our World For Future Generations***?**	**Creativity** *What Dreams Have Shaped The Ideas of our Great Visionaries?*	**Wonder** How does the land shape our times?
Unit	Forces (Y5)	Electricity (Y6)	Light (Y6)	Living Things and their habitats (Y5)	Earth and Space (Y5)	Animals Including humans (Y5)
NC Objectives	Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object identify the effects of air resistance, water resistance and friction, that act between moving surfaces Recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect	Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit 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 Use recognised symbols when representing a simple circuit in a diagram	Recognise that light appears to travel in straight lines Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye 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 Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them	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	Describe the movement of the Earth and other planets relative to the sun in the solar system describe the movement of the moon relative to the Earth Describe the sun, Earth and moon as approximately spherical bodies Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky	Describe the changes as humans develop to old age

Question	How can we capture the science of forces?	How does electricity flow through a circuit and what happens if we change components?	How does light behave and how can its effects be measured?	What are the life cycles of different types of species?	How has greatness underpinned our knowledge of the Universe and planet?	How do humans develop as they age?
Vocabulary (Tier 3)	**gravity** – the force that pulls objects towards the Earth. **air resistance** – a force that slows moving objects as they move through air. **water resistance** – a force that slows objects moving through water. **friction** – a force that slows movement when two surfaces rub together. **force** – a push or pull that changes how something moves. **mechanism** – a system of parts that work together to make movement easier. **lever** – a simple machine that uses a bar and pivot to move or lift objects. **pulley** – a simple machine that uses wheels and ropes to lift or move loads. **gear** – a wheel with teeth that interlock with another gear to transfer movement. **effort** – the amount of force applied to make something move.	**voltage** – the measure of electrical energy provided by a cell or battery. **current** – the flow of electricity around a circuit. **component** – a part of a circuit, such as a bulb, buzzer, or switch. **cell** – a single unit that provides electrical energy. **battery** – two or more cells joined together to provide more energy. **resistance** – the opposition to the flow of electricity, which can reduce brightness or loudness. **symbol** – a standard drawing used to represent circuit parts in diagrams. **series circuit** – a circuit where components are connected one after another in a single loop. **complete circuit** – a closed path that allows electricity to flow continuously. **energy transfer** – the movement of energy from the battery through wires to components.	• **light source** – an object that produces light (e.g., the Sun, a lamp). • **reflection** – when light bounces off a surface. • **refraction** – when light bends as it passes through different materials (e.g., water, glass). • **straight line** – the path light travels unless it is reflected or refracted. • **shadow** – a dark shape formed when an object blocks light. • **opaque** – a material that does not let light through. • **transparent** – a material that allows light to pass through clearly. • **translucent** – a material that lets some light through but scatters it. • **intensity** – the brightness or strength of light. • **angle of incidence** – the angle at which	• **life cycle** – the stages an organism goes through from birth to adulthood and reproduction. • **mammal** – a warm-blooded animal that gives birth to live young and feeds them milk. • **amphibian** – a cold-blooded animal that usually begins life in water with gills and later develops lungs (e.g., frog). • **insect** – an animal with six legs and three body parts, often undergoing metamorphosis (e.g., butterfly). • **bird** – a warm-blooded animal with feathers that lays eggs. • **metamorphosis** – a major change in body form during an insect's life cycle (e.g., caterpillar to butterfly). • **reproduction** – the process by which living things produce offspring. • **pollination** – the transfer of pollen from one flower to another, leading to seed formation. • **fertilisation** – the joining of male and female cells to	**orbit** – the curved path a planet or moon takes around another body. **rotation** – the spinning of a planet or moon on its axis. **axis** – an imaginary line through the centre of a planet around which it rotates. **revolution** – the movement of a planet around the Sun, or the Moon around the Earth. **solar system** – the Sun and all the planets, moons, and other bodies that move around it. **sphere** – a round, ball-like shape; the Sun, Earth, and Moon are approximately spherical. **day and night** – caused by the Earth's rotation, with one side facing the Sun (day) and the other in shadow (night). **celestial body** – any natural object in space, such as a planet, star, or moon. **apparent movement** – how the Sun seems to move across the sky because of Earth's rotation. **satellite** – an object that orbits a planet; the Moon is Earth's natural satellite.	**development** – the process of growing and changing throughout life. **adolescence** – the stage between childhood and adulthood when the body changes (puberty). **puberty** – the time when a child's body matures and becomes capable of reproduction. **adulthood** – the stage of life when a person is fully grown and independent. **maturity** – the state of being fully developed physically and emotionally. **ageing** – the natural process of getting older. **life expectancy** – the average length of time a person is expected to live. **reproduction** – the biological process by which humans produce offspring. **growth** – the increase in size and physical development of the body. **decline** – the gradual reduction in physical strength and health in old age.

			light hits a surface.	begin the development of a new organism. • **seed dispersal** – the spreading of seeds away from the parent plant to grow in new places.		
Cycle 2	**Trust and Collaboration** *How are we stronger together?*	**Perseverance** *What Matters Most, The Journey or the Destination?*	**Honesty** *How Are There Two Sides To Every Story?*	**Justice** *Who Holds the Power?*	**Kindness** *How Does Kindness Shape Our Future?*	**Wisdom** *What Have We Learned From The Past?*
Unit	Properties and changes of materials (Y5)	Properties and changes of materials (Y5)	Evolution and Heritage (Y6)	Forces (Y5)	Living things and their habitats (Y6)	Animals including humans (Y6)
NC Objectives	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 Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating	Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic Demonstrate that dissolving, mixing and changes of state are reversible changes 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	Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution	Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object Identify the effects of air resistance, water resistance and friction, that act between moving surfaces Recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect	Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals Give reasons for classifying plants and animals based on specific characteristics	Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function Describe the ways in which nutrients and water are transported within animals, including humans
Question	What are the properties of materials and how do they change?	What are the properties of materials and how do they change?	How did Darwin propose his theory of Evolution through Inheritance,	How can we capture the science of forces?	How can unseen and ever present worlds be both harmful and beneficial to us?	How do our bodies work?

			Adaption and Natural Selection?			
Vocabulary (Tier 3)	**hardness** – how resistant a material is to being scratched or dented. **solubility** – the ability of a substance to dissolve in a liquid. **solution** – a mixture where a substance has dissolved in a liquid. **transparency** – how much light can pass through a material. **conductivity** – how well a material allows electricity or heat to pass through it. **magnetism** – the property of a material that makes it attracted to a magnet. **filtering** – a method of separating solids from liquids using a barrier (like filter paper). **sieving** – a method of separating larger solids from smaller ones using a mesh or sieve. **evaporation** – when a liquid changes into a gas, leaving dissolved substances behind. **mixture** – a combination of two or more substances that can often be separated.	**comparative test** – an experiment where two or more things are compared under the same conditions. **fair test** – an experiment where only one variable is changed and everything else is kept the same. **property** – a characteristic of a material, such as hardness, flexibility, or conductivity. **reversible change** – a change that can be undone, such as melting or dissolving. **irreversible change** – a change that cannot be undone, such as burning. **dissolving** – when a solid mixes into a liquid to form a solution. **mixing** – combining two or more substances without a chemical reaction. **change of state** – when matter changes between solid, liquid, and gas. **chemical reaction** – a process where substances combine to form new materials. **new material** – a substance created during an irreversible change (e.g., ash from burning wood).	**fossil** – the preserved remains or traces of ancient living things found in rocks. **inheritance** – the passing of characteristics from parents to offspring. **variation** – differences between individuals of the same species. **adaptation** – a feature that helps a living thing survive in its environment. **evolution** – the gradual change of living things over long periods of time. **species** – a group of living things that share common features and can reproduce. **natural selection** – the process where organisms better suited to their environment survive and reproduce. **offspring** – the young produced by a parent or parents. **environment** – the surroundings in which an organism lives and to which it must adapt. **extinction** – when a species no longer exists anywhere on Earth.	**gravity** – the force pulling objects towards the centre of the Earth. **air resistance** – a force that slows objects moving through air. **water resistance** – a force that slows objects moving through water. **friction** – a force that slows movement when two surfaces rub together. **force** – a push or pull that changes how something moves. **mechanism** – a system of parts that makes movement or work easier. **lever** – a simple machine using a bar and pivot to move or lift objects. **pulley** – a simple machine using wheels and ropes to lift or move loads. **gear** – a wheel with teeth that interlock with another gear to transfer movement. **effort** – the amount of force applied to make something move.	**classification** – the process of sorting living things into groups based on shared features. **taxonomy** – the scientific system of naming and grouping organisms. **micro-organism** – a tiny living thing that can only be seen with a microscope (e.g., bacteria, yeast). **characteristics** – observable features used to identify and group organisms (e.g., number of legs, leaf shape). **vertebrate** – an animal with a backbone. **invertebrate** – an animal without a backbone. **species** – a group of living things that share common features and can reproduce. **kingdom** – one of the broadest groups in classification (e.g., plants, animals, fungi). **similarities** – features that organisms share, used to group them together.	**circulatory system** – the body system that transports blood, nutrients, and oxygen around the body. **heart** – the organ that pumps blood through the circulatory system. **blood vessels** – tubes that carry blood around the body (arteries, veins, capillaries). **artery** – a blood vessel that carries blood away from the heart. **vein** – a blood vessel that carries blood back to the heart. **capillary** – tiny blood vessels where exchange of oxygen, nutrients, and waste takes place. **plasma** – the liquid part of blood that carries nutrients, hormones, and waste. **oxygen** – a gas carried by red blood cells, needed for respiration. **nutrients** – substances from food (like vitamins, minerals, proteins) transported in the blood to keep the body healthy. **lifestyle** – daily habits (diet, exercise, sleep, drug use) that affect how the body functions.