Knowledge and Skills Progression Science

Humankind

The Human Body, Staying Safe & Healthy Lifestyle

Strand	Year 1	Year 2	Lower Key Stage 2		Upper Key Stage 2	
Knowledge	The basic body parts are the head, arms, legs, nose, eyes, ears, mouth, hands and feet. The five senses are hearing, sight, smell, taste and touch. Ears are used for hearing, eyes are used to see, the nose is used to smell, the tongue is used to taste and skin gives the sense of touch. It is important to stay safe. Some ways to stay safe include staying safe in strong sunlight (sun cream, sun hat and sunglasses), crossing roads (stop, look and listen), in the kitchen (not touching hot or sharp objects) and with household chemicals (not touching, drinking or eating). Hand washing and good hygiene are important parts of a healthy lifestyle and prevent the spread of germs.	Human offspring go through different stages as they grow to become adults. These include baby, toddler, child, teenager, adult and elderly. Humans need water, food, air and shelter to survive. A healthy lifestyle includes exercise, good personal hygiene, good quality sleep and a balanced diet. Risks associated with an unhealthy lifestyle include obesity, tooth decay and mental health problems.	Humans have a skeleton and muscles for movement, support and protecting organs. Major bones in the human body include the skull, ribs, spine, humerus, ulna, radius, pelvis, femur, tibia and fibula. Major muscle groups in the human body include the biceps, triceps, abdominals, trapezius, gluteals, hamstrings, quadriceps, deltoids, gastrocnemius, latissimus dorsi and pectorals. Light from the Sun is damaging for vision and the skin. Protection from the Sun includes sun cream, sun hats, sunglasses and staying indoors or in the shade. (Year 4 – Urban Pioneers) Humans have to get nutrition from what they eat. It is important to have a balanced diet made up of the main food groups, including proteins, carbohydrates, fruit and vegetables, dairy products and alternatives, and fats and spreads. Humans need to stay hydrated by drinking water.	The digestive system is responsible for digesting food and absorbing nutrients and water. The main parts of the digestive system are the mouth, oesophagus, stomach, small intestines, large intestines and rectum. The mouth starts digestion by chewing food and mixing it with saliva. The oesophagus transports the chewed food to the stomach, where it mixes with stomach acid and gets broken down into smaller pieces. In the small intestine, nutrients from the food are absorbed by the body. In the large intestine, water is absorbed by the body. The remaining undigested waste is stored in the rectum before excretion through the anus. Working with electrical circuits can be dangerous. Precautions include not touching electrical components with wet hands and not putting batteries in mouths.	Humans reproduce sexually, which involves two parents (one female and one male) and produces offspring that are different from the parents. Very hot and very cold materials can burn skin. Heating materials should be done safely. (Year 6 – Alchemy Island) Good personal hygiene (washing, wearing clean clothes and brushing teeth) can prevent disease or illness. Puberty is the period during which adolescents reach sexual maturity and become capable of reproduction. It causes physical and emotional changes. (Year 6 – Allotment)	The circulatory system includes the heart, blood vessels and blood. The heart pumps blood through the blood vessels and around the body. There are three types of blood vessel: arteries, veins and capillaries. They each have a different-sized hole (lumen) and walls. The blood carries gases (oxygen and carbon dioxide), water and nutrients to where they are needed. The red blood cells carry oxygen and carbon dioxide around the body. The blood also contains white blood cells, which protect the body from infection. (Year 5 – Blood Heart) Lasers are intense beams of light and they should never be pointed at people's faces or aircraft. Lifestyle choices can have a positive (exercise and eating healthily) or negative (drugs, smoking and alcohol) impact on the body. (Year 5 – Blood Heart)

Courage **Resilience** **Honesty** **Kindness**

Matthew 7:24 - "Therefore everyone who hears these words of mine and puts them into practice is like a wise man who built his house on the rock"

				Regular teeth brushing, limiting sugary foods and visiting the dentist are important for good oral hygiene.		
Skill	Draw and label the main parts of the human body and say which body part is associated with which sense. Explore the five senses and the body parts associated with them. Describe ways to stay safe in some familiar situations. Explain why hand washing and cleanliness are important.	Describe the stages of human development (baby, toddler, child, teenager, adult and elderly). Describe what humans need to survive. Describe the importance of a healthy lifestyle, including exercise, a balanced diet, good quality sleep and personal hygiene.	Describe how humans need the skeleton and muscles for support, protection and movement. Explain why light from the Sun can be dangerous. (Year 4 – Urban Pioneers) Explain the importance and characteristics of a healthy, balanced diet.	Describe the purpose of the digestive system, its main parts and each of their functions. Explain the precautions needed for working safely with electrical circuits. Describe what damages teeth and how to look after them.	Describe the process of human reproduction. Explain the precautions needed for working safely when heating, burning, cooling and mixing materials. (Year 6 Alchemy Island) Explain why personal hygiene is important during puberty.	Name and describe the purpose of the circulatory system and the functions of the heart, blood vessels and blood. (Year 5 – Blood Heart) Explain the dangers of using lasers and ways to use them safely. Explain the impact of positive and negative lifestyle choices on the body. (Year 5 – Blood Heart)
Cornerstones Unit	Paws, Claws and Whiskers Splendid Skies	Scented Garden	Predator	Burps Bottoms and Bile	Darwin's Delights SRE	Blood Heart Stargazers

Knowledge and Skills Progression Science

Processes

Pattern Seeking, Changes, Earth, Phenomina, Forces & Modelling.

Strand	Year 1	Year 2	Lower Key Stage 2		Upper Key Stage 2	
Knowledge	There are four seasons: spring, summer, autumn and winter. Certain events and weather patterns happen in different seasons. Day length (the number of daylight hours) is longer in the summer months and shorter in the winter months. Different types of weather include sunshine, rain, hail, wind, snow, fog, lightning, storm and cloud. The weather can change daily and some weather types are more common in certain seasons, such as snow in winter. A shadow is formed when light from a light source, such as the Sun, is blocked by an opaque object, but not by transparent objects.	The UK has typical weather in each of the seasons. For example, winter is cold and sometimes frosty, whereas summer is warm and sometimes sunny. Some objects and materials can be changed by squashing, bending, twisting, stretching, heating, cooling, mixing and being left to decay. The Earth is spherical and is covered in water and land. When it is daytime in one location, it is night time on the other side of the world. When an instrument is played by plucking, striking or blowing, the air around or inside it vibrates. These vibrations travel as a sound wave to the ear.	Shadows change shape and size when the light source moves. For example, when the light source is high above the object, the shadow is short and when the light source is low down, the object's shadow is long. Fossils form over millions of years and are the remains of a once-living organism, preserved as rock. Scientists can use fossils to find out what life on Earth was like in prehistoric times. Fossils form when a living thing dies in a watery environment. The body gets covered by mud and sand and the soft tissues rot away. Over time, the ground hardens to form sedimentary rock and the skeletal or shell remains turn to rock.	Pitch is how high or low a sound is. Parts of an instrument that are shorter, tighter or thinner produce high-pitched sounds. Parts of an instrument that are longer, looser or fatter produce low-pitched sounds. Volume is how loud or quiet a sound is. The harder an instrument is hit, plucked or blown, the stronger the vibrations and the louder the sound. Heating or cooling materials can bring about a change of state. This change of state can be reversible or irreversible. The temperature at which materials change state varies depending on the material. Water changes state from solid (ice) ⇌ liquid (water) at 0°C and from liquid (water) ⇌	As Earth orbits the Sun, it also spins on its axis. It takes Earth a day (24 hours) to complete a full spin. During the day, the Sun appears to move through the sky. However, this is due to the Earth rotating and not the Sun moving. Earth rotates to the east or, if viewed from above the North Pole, it rotates anti-clockwise, which means the Sun rises in the east and sets in the west. As Earth rotates, different parts of it face the Sun, which brings what we call daytime. The part facing away is in shadow, which is night time. Reversible changes include heating, cooling, melting, dissolving and evaporating. Irreversible changes include burning, rusting, decaying and chemical reactions.	A shadow appears when an object blocks the passage of light. Apart from some distortion or fuzziness at the edges, shadows are the same shape as the object. The distortion or fuzziness depends on the position or type of light source. Light travels in straight lines. Light sources give out light. They can be natural or artificial. When light hits an object, it is absorbed, scattered, reflected or a combination of all three. Light from a source or reflected light enter the eye. Vertebrates, such as mammals, birds and reptiles, have a cornea and lens that refracts light that enters the eye and focuses it on the nerve tissue at the back of

	Simple equipment can be used for measuring weather, such as measuring temperature with a thermometer; identifying wind direction and force with a windsock or measuring rainfall with a rain gauge. Electrical circuits can light lamps or sound a buzzer. A switch turns an electrical circuit off and on.	Models can have moving parts that use levers, sliders, wheels and axles.	Soils are made from tiny pieces of eroded rock, air and organic matter. There are a variety of naturally occurring soils, including clay, sand and silt. Different areas have different soil types. Dark is the absence of light and we need light to be able to see. A shadow is formed when light from a light source, such as the Sun, is blocked by an object. Opaque objects cast dark shadows. Translucent objects cast pale shadows. Transparent objects cast very pale shadows. An object will not move unless a pushing or pulling force is applied. Some forces require direct contact, whereas other forces can act at a distance, such as magnetic force.	gas (water vapour) at 100°C. The process of changing from a solid to liquid is called melting. The reverse process of changing from a liquid to a solid is called freezing. The process of changing from a liquid to a gas is called evaporation. The reverse process of changing from a gas to a liquid is called condensation. The water cycle has four stages: evaporation, condensation, precipitation and collection. Water in lakes, rivers and streams is warmed by the Sun, causing the water to evaporate and rise into the air as water vapour. As the water vapour rises, it cools and condenses to form water droplets in clouds. The clouds become full of water until the water falls back to the ground as precipitation (rain, hail, snow and ice). The fallen water collects back in lakes, rivers and streams. Evaporation and condensation are caused by temperature changes. When an instrument is played, the air around or inside it vibrates. These vibrations travel as a sound wave. Sound waves travel	The Solar System is made up of the Sun and everything that orbits around it. There are eight planets in our Solar System: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune. Earth orbits around the Sun and a year (365.25 days) is the length of time it takes for Earth to complete a full orbit. The Moon orbits Earth, completing a full orbit every month (27.3 days). The Sun, Earth, Moon and the planets in our solar system are roughly spherical. All planets are spherical because their mass is so large that they have their own force of gravity. This force of gravity pulls all of a planet's material towards its centre, which compresses it into the most compact shape – a sphere. Gravity is a force of attraction. Anything with a mass can exert a gravitational pull on another object. The Earth's large mass exerts a gravitational pull on all objects on Earth, making dropped objects fall to the ground. Mechanisms, such as levers, pulleys and gears, give us a	the eye, which is called the retina. Once light reaches the retina, it is transmitted to the brain via the optic nerve. 'White' light is a term used to describe visible, ordinary daylight. White light can be split into a spectrum of colours (rainbow) by droplets of water or prisms. Voltage is measured in volts (V). The bigger the voltage, the more electrons are pushed through the circuit. The more voltage flowing through a lamp, buzzer or motor, the brighter the lamp, the louder the buzzer and the faster the motor. Electrical symbols represent electrical components such as a switch, buzzer or lamp. Electricity is a form of energy that makes things work. Circuit components include cells, buzzers, switches, wires, lamps and motors. A collection of components connected by wires in a loop is called a series circuit.

				through a medium, such as air or water, to the ear. A series circuit is a simple loop with only one path for the electricity to flow. A series circuit must be a complete loop to work and have a source of power from a battery or cell. Electrical components include cells, wires, lamps, motors, switches and buzzers. Switches open and close a circuit and provide control.	mechanical advantage. A mechanical advantage is a measurement of how much a simple machine multiplies the force that we put in. The bigger the mechanical advantage, the less force we need to apply.	
Skill	Observe changes across the four seasons. Observe and describe how day length changes across the year. Observe and describe different types of weather. Explain in simple terms how shadows are formed. Investigate weather using toys, models or simple equipment. Describe, following exploration, what simple electrical circuits can do.	Describe typical UK seasonal weather patterns. Describe how some objects and materials can be changes and how these changes can be desirable or undesirable. Describe the features of Earth using words and pictures. Explain in simple terms how sounds are made. Sort and group objects that float and sink. Make models with moving parts. Begin to notice patterns and relationships in their data and explain what they have done	Find patterns in the way shadows change during the day. Describe simply how fossils are formed, using words, pictures or a model. Investigate soils from the local environment. Describe the differences between dark and light and how we need light to be able to see. Explain, using words or diagrams, how shadows are formed when a light source is blocked by an opaque object. Explain that an object will not move unless a push or pull force is applied, describing	Compare and find patterns in the pitch of a sound, using a range of equipment such as musical instruments. Compare and find patterns in the volume of a sound, using a range of equipment such as musical instruments. Observe and explain that some materials change state when they are heated or cooled and measure or research the temperature in degrees Celsius at which materials change state. Describe the water cycle using words or diagrams and explain the part played by evaporation and condensation.	Use the idea of Earth's rotation to explain day and night, and the Sun's apparent movement across the sky. Identify, demonstrate and compare reversible and irreversible changes. Describe or model the movement of the planets in our Solar System, including Earth, relative to the Sun. Describe or model the movement of the Moon relative to the Earth. Describe the Sun, Earth and Moon as approximately spherical bodies and use this knowledge to understand the	Explain, using words, diagrams or a model, why shadows have the same shape as the objects that cast them and how shadows can be changed. Describe some significant changes that have happened on Earth and the evidence, such as fossils, that support this. Identify that light travels in straight lines. Explain that, due to how light travels, we can see things because they give out or reflect light into the eye.

		and found out using simple scientific language. Use a range of methods (tables, charts, diagrams and Venn diagrams) to gather and record simple data with some accuracy.	forced in action and whether the force requires direct contact or whether the force can act at a distance (magnetic force). Make working models with simple mechanisms or electrical circuits.	Explain how sounds are made and heard using diagrams, models, written models or verbally. Predict and describe whether a circuit will work based on whether or not the circuit has a battery or cell. Construct operational simple series circuits using a range of components and switches for control.	phases of the Moon and eclipses. Explain that objects fall to Earth due to the force of gravity. Describe and demonstrate how simple levers, gears and pulleys assist the movement of objects.	Describe, using scientific language, phenomena associated with refraction of light. Revise the understanding of light, reflection and daylight from previous years. Explain how the brightness of a lamp or volume of a buzzer is affected by the number and voltage of cells used in a circuit. Create circuits using a range of components and record diagrammatically using the recognised symbols for electrical components.
Cornerstones Unit	Splendid Skies		Tribal Tales Urban Pioneers	Playlist	Stargazers	Stargazers Pharaohs

Knowledge and Skills Progression Science

Creativity

Report and Conclude & Gather and Record Data

Strand	Year 1	Year 2	Lower Key Stage 2		Upper Key Stage 2	
Knowledge	The results are information that has been found out from an investigation. Data can be recorded and displayed in different ways, including tables, pictograms and drawings.	The results are information that has been found out from an investigation and can be used to answer a question. Data can be recorded and displayed in different ways, including tables, charts, pictograms and drawings.	Data can be recorded and displayed in different ways, including tables, charts, graphs and labelled diagrams. Data can be used to provide evidence to answer questions.	Results are information, such as data or observations, that have been found out from an investigation. A conclusion is the answer to a question that uses the evidence collected. Data can be recorded and displayed in different ways, including tables, charts, graphs, keys and labelled diagrams.	The results are information, such as measurements or observations, that have been collected during an investigation. A conclusion is an explanation of what has been discovered using evidence collected. Data can be recorded and displayed in different ways, including tables, bar and line charts, classification keys and labelled diagrams.	The results are information, such as measurements or observations, that have been collected during an investigation. A conclusion is an explanation of what has been discovered, using correct, precise terminology and collected evidence. Data can be recorded and displayed in different ways, including tables, bar and line charts, scatter graphs, classification keys and labelled diagrams.
Skill	Talk about what they have done and say, with help, what they think they have found out. With support, gather and record simple data in a range of ways (data tables, diagrams, Venn diagrams).	Begin to notice patterns and relationships in their data and explain what they have done and found out using simple scientific language. Use a range of methods (tables, charts, diagrams and Venn diagrams) to gather and record simple data with some accuracy.	Gather and record findings in a variety of ways (diagrams, tables, charts and graphs) with increasing accuracy.	Use scientific vocabulary to report and answer questions about their findings based on evidence collected, draw simple conclusions and identify next steps, improvements and further questions. Gather, record, classify and present observations and measurements in a variety of ways (pictorial representations, timelines, diagrams, keys, tables, charts and graphs).	Use relevant scientific vocabulary to report on their findings, answer questions and justify their conclusions based on evidence collected, identify improvements, further questions and predictions. Gather and record data and results of increasing complexity, selecting from a range of methods (scientific diagrams, labels, classification	Report on and validate their findings, answer questions and justify their methods, opinions and conclusions, and use their results to suggest improvements to their methodology, separate facts from opinions, pose further questions and make predictions for what they might observe. Choose an appropriate approach to recording accurate results, including

					keys, tables, graphs and models).	scientific diagrams, labels, timelines, classification keys, tables, models and graphs (bar, line and scatter), linking to mathematical knowledge.
Cornerstones Unit	Splendid Skies Enchanted Woodland	Wiggle and Crawl Towers, Tunnels and Turrets	Mighty Metals Predator Tremors	Burps. Bottoms and Bile Blue Abyss	Pharaohs Stargazers Alchemy Island Scream Machine	Frozen Kingdom Darwin's Delights

Knowledge and Skills Progression Science

Investigation

Questioning, Measurement, Investigation & Observation

Strand	Year 1	Year 2	Lower Key Stage 2		Upper Key Stage 2	
Knowledge	Question words include what, why, how, when, who and which. Simple equipment is used to take measurements and observations. Examples include metre sticks, measuring tapes, egg timers and hand lenses. Simple tests can be carried out by following a set of instructions. Objects, materials and living things can be looked at and compared.	Questions can help us find out about the world. Simple equipment is used to take measurements and observations. Examples include timers, hand lenses, metre sticks and trundle wheels. Tests can be carried out by following a set of instructions. A prediction is a guess at what might happen in an investigation. Objects, materials and living things can be looked at, compared and grouped according to their features.	Equipment is used to take measurements in standard units. Examples include data loggers plus sensors, timers (seconds, minutes and hours), thermometers (°C) and metre sticks (millimetres, centimetres and metres). Taking repeat readings can increase the accuracy of the measurement. Tests can be set up and carried out by following or planning a set of instructions. A prediction is a best guess for what might happen in an investigation based on some prior knowledge. An observation involves looking closely at objects, materials and living things, which can be compared and grouped according to their features.	Questions can help us find out about the world and can be answered using scientific enquiry. Equipment is used to take measurements in standard units. Examples include data loggers plus sensors, timers (seconds, minutes and hours), thermometers (°C), and metre sticks, rulers or trundle wheels (millimetres, centimetres, metres). Scientific enquiries can be set up and carried out by following or planning a method. A prediction is a statement about what might happen in an investigation, based on some prior knowledge or understanding. A fair test is one in which only one variable is changed and all others remain constant.	Specialised equipment is used to take measurements in standard units. Examples include data loggers plus sensors, such as light (lux), sound (dB) and temperature (°C); timers (seconds, minutes and hours); thermometers (°C), and measuring tapes (millimetres, centimetres, metres). A method is a set of clear instructions for how to carry out a scientific investigation. A prediction is a statement about what might happen in an investigation based on some prior knowledge or understanding. An observation involves looking closely at objects, materials and living things. Accurate observations can be made repeatedly or at regular intervals to identify changes over time.	Questions can help us find out about the world and can be answered using a range of scientific enquiries, including fair tests, research and observation. Specialised equipment is used to take accurate measurements in standard units. Examples include data loggers plus sensors, such as light (lux), sound (dB) and temperature (°C); timers (seconds, minutes and hours); thermometers (°C) and measuring tapes (millimetres, centimetres, metres). A method is a set of clear instructions for how to carry out a scientific investigation, including what equipment to use and observations to make. A variable is something that can be changed during a fair test. A prediction is a statement about what might happen in an investigation based on some prior knowledge or understanding.

						Accurate observations can be made repeatedly or at regular intervals to identify changes over time, identify processes and make comparisons.
Skill	Ask simple scientific questions. With support, use simple equipment to measure and make observations. With support, follow instructions to perform simple tests and begin to talk about what they might do or what might happen. Observe objects, materials, living things and changes over time, sorting and grouping them based on their features.	Ask and answer scientific questions about the world around them. Use simple equipment to measure and make observations. Follow a set of instructions to perform a range of simple tests, making simple predictions for what might happen and suggesting ways to answer their questions. Observe objects, materials living things and changes over time, sorting and grouping them based on their features and explaining their reasoning.	Take measurements in standard units, using a range of equipment. Set up and carry out some simple, comparative and fair tests, making predictions for what might happen. Make increasingly careful observations, identifying similarities, differences and changed and making simple connections.	Ask relevant scientific questions, independently about the word around them and begin to identify how they can answer them. Take accurate measurements in standard units, using a range of equipment. Begin to independently plan, set up and carry out a range of comparative and fair tests, making predictions and following a method accurately. Begin to choose which observations to make and for how long and make systematic, careful observations and comparisons, identifying changes and connections.	Take increasingly accurate measurements in standard units, using a range of chosen equipment. Plan and carry out a range of enquiries, writing methods, identifying variables and making predictions based on prior knowledge and understanding. Within a group, decide which observations to make, when and for how long, and make systematic and careful observations using them to make comparisons, identify changes, classify and make links between cause and effect.	Ask and answer deeper and broader scientific questions about the local and wider world that build on and extend their own and others' experiences and knowledge. Take accurate, precise and repeated measurements in standard units, using a range of chosen equipment. Plan and carry out a range of enquiries, including writing methods, identifying and controlling variables, deciding on equipment and data to collect and making predictions based on prior knowledge and understanding. Independently decide which observations to make, when and for how long and make systematic and careful observations, using them to make comparisons, identify changes, classify and make links between cause and effect.

Cornerstones Unit						

Knowledge and Skills Progression Science

Materials

Identification and Classification & Properties and Uses

Strand	Year 1	Year 2	Lower Key Stage 2		Upper Key Stage 2	
Knowledge	A material is what an object is made from. Everyday materials include wood, plastic, glass, metal, water, rock, brick, paper and fabric. Materials have different properties, such as hard or soft; stretchy or stiff; rough or smooth; opaque or transparent; bendy or rigid; waterproof or not waterproof.	Some foods, such as ice and chocolate, melt when heated, but then harden (solidify or freeze) when cooled. A material's physical properties make it suitable for particular purposes, such as glass for windows and brick for building walls. Many materials are used for more than one purpose, such as metal for cutlery and cars.	Light can be reflected from different surfaces. Some surfaces are poor reflectors, such as some fabrics, while other surfaces are good reflectors, such as mirrors. There are three different rock types: sedimentary, igneous and metamorphic. Sedimentary rocks form from mud, sand and particles that have been squashed together over a long time to form rock. Examples include sandstone and limestone. Igneous rocks are made from cooled magma or lava. They usually contain visible crystals. Examples include pumice and granite. Metamorphic rocks are formed when existing rocks are heated by the magma under the Earth's crust or squashed by the movement of the Earth's tectonic plates. They are usually very hard. Examples include slate and marble. Some materials have magnetic properties. Magnetic materials are	Materials can be grouped according to whether they are solids, liquids or gases. Solids stay in one place and can be held. Some solids can be squashed, bent, twisted and stretched. Examples of solids include wood, metal, plastic and clay. Liquids move around (flow) easily and are difficult to hold. Liquids take the shape of the container in which they are held. Examples of liquids include water, juice and milk. Gases spread out to fill the available space and cannot be held. Examples of gases include oxygen, helium and carbon dioxide. Air is a mixture of gases. Electrical conductors allow electricity to flow through them, whereas insulators do not. Common electrical conductors are metals. Common insulators include wood, glass, plastic and rubber.	Materials can be grouped according to their basic physical properties. Properties include hardness, solubility, transparency, conductivity (electrical and thermal) and magnetism. Some materials (solutes) will dissolve in liquid (solvents) to form a solution. The solute can be recovered by evaporating off the solvent by heating. Some mixtures can be separated by filtering, sieving and evaporating. Sieving can be used to separate large solids from liquids and some solids from other solids. Filtering can be used to separate small solids from liquids. Evaporating can be used to separate dissolved solids from liquids. A material's properties dictate what it can be used for. For example, cooking pans are made from metal, which is a good thermal conductor, allowing heat to quickly	Heat energy is transferred in three different ways: conduction, convection and radiation. A material that allows heat energy to travel through it is a thermal conductor. Poor thermal conductors are known as thermal insulators. Insulation is important for the survival of many animals. Blubber is a layer of fat that acts as an insulator under the skin of some animals, such as walruses and whales. It is an adaptation that is essential for their survival. Animals with fur, such as polar bears and Arctic foxes, trap a layer of air close to their skin to insulate them from the cold. Mirrors and lenses are used in a range of everyday objects (telescopes, periscopes, cards and on roads). The human eye has a lens that bends and focuses light on the back of the eye (retina) so that we can see.

			attracted to magnets. All magnetic materials are metals but not all metals are magnetic. Iron is a magnetic metal.		transfer from the hob to the contents of the pan.	
Skill	Identify and name what an object is made from, including wood, plastic, glass, metal, water and rock. Investigate and describe the simple physical properties of some everyday materials, such as hard or soft; stretchy or stiff; rough or smooth; opaque or transparent; bendy or rigid and waterproof or not waterproof.	Observe what happens when a range of everyday materials, including foods, are heated and cooled, sorting and grouping them based on their observations. Compare the suitability of a range of everyday materials for particular uses, including wood, metal, plastic, glass, brick, rock, paper and cardboard.	Group and sort materials as being reflective or non-reflective. Compare and group rocks based on their appearance, properties or uses. Compare and group materials based on their magnetic properties.	Group and sort materials into solids, liquids or gases. Describe materials as electrical conductors or insulators.	Compare and group everyday materials by their properties, including hardness, solubility, transparency, conductivity (electrical and thermal) and magnetism. Explain, following observation, that some substances (solutes) will dissolve in liquid (solvents) to form a solution and the solute can be recovered by evaporating off the solvent. Separate mixtures by filtering, sieving and evaporating. Describe, using evidence from comparative or fair tests, why a material has been chosen for a specific use, including metals, wood and glass.	Investigate and identify good thermal insulators, describing their common features. Describe, using diagrams, how light behaves when reflected off a mirror (plane, convex or concave) and when passing through a lens (concave or convex).
Cornerstones Unit						

Knowledge and Skills Progression Science

Nature

Identification and Classification, Parts and Functions, Nutrition & Survival

Strand	Year 1	Year 2	Lower Key Stage 2		Upper Key Stage 2	
Knowledge	Plants are living things. Common plants include the daisy, daffodil and grass. Trees are large, woody plants and are either evergreen or deciduous. Trees that lose their leaves in the autumn are called deciduous trees. Examples include oak, beech and rowan. Trees that shed old leaves and grow new leaves all year round are called evergreen trees. Examples include holly and pine. Animals are living things. Animals can be sorted and grouped into six main groups: fish, amphibians, reptiles, birds, invertebrates and mammals. The basic plant parts include root, stem, leaf, flower, petal, fruit, seed and bulb. Trees have a woody stem called a trunk. Different animal groups have some common body parts, such as eyes and a mouth,	A habitat is a place where a living thing lives. A microhabitat is a very small habitat. Animals have offspring that grow into adults. Different animals have different stages of growth or life cycles. Plants need water, light and a suitable temperature to grow and stay healthy. Without any one of these things, they will die. Food chains show how living things depend on one another for food. All food chains start with a plant, followed by animals that either eat the plant or other animals. Animals need water, food, air and shelter to survive. Their habitat must provide all these things.	Some animals have skeletons for support, movement and protection. Endoskeletons are those found inside some animals, such as humans, cats and horses. Exoskeletons are those found on the outside of some animals, such as beetles and flies. Some animals have no skeleton, such as slugs and jellyfish. The plant's roots anchor the plant in the ground and transport water and minerals from the ground to the plant. The stem (or trunk) support the plant above the ground. The leaves collect energy from the Sun and make food for the plant. Flowers make seeds to produce new plants. Water is transported in plants from the roots, through the stem and to the leaves, through tiny tubes called xylem. Animals cannot make their own food and need to get nutrition from the food they eat. Carnivores get their nutrition from eating other	Scientists classify living things according to shared characteristics. Animals can be divided into six main groups: mammals, reptiles, amphibians, birds, fish and invertebrates. These groups can be further subdivided. Classification keys are scientific tools that aid the identification of living things. There are four different types of teeth: incisors, canines, premolars and molars. Incisors are used for cutting. Canines are used for tearing. Premolars and molars are used for grinding and chewing. Carnivores, herbivores and omnivores have characteristic types of teeth. Herbivores have many large molars for grinding plant material. Carnivores have large canines for killing their prey and tearing meat. Food chains show what animals eat within a habitat and how energy is passed on over time. All food chains start with a producer, which is	Flowering plants reproduce sexually. The flower is essential for sexual reproduction. Other plants reproduce asexually. Bulbs, corms and rhizomes are some parts used in asexual reproduction in plants. Parts of a flower include the stamen, filament, anther, pollen, carpel, stigma, style, ovary, ovule and sepal. Pollination is when the male part of a plant (pollen) is carried, by wind, insects or other animals, to the female part of the plant (carpel). The pollen travels to the ovary, where it fertilises the ovules (eggs). Seeds are then produced, which disperse far away from the parent plant and grow new plants. Population changes in a habitat can have significant consequences for food chains and webs. Reproduction is the process of producing offspring and is	Classification keys help us identify living things based on their physical characteristics. Scientists classify living organisms into broad groups according to their characteristics. Vertebrates are an example of a classification group. There are a number of ranks, or levels, within the biological classification system. The first rank is called a kingdom, the second a phylum, then class, order, family, genus and species. Animals that sexually reproduce generate new offspring of the same kind by combining the genetic material of two individuals. Each offspring inherits two of every gene, one from the female parent and one from the male parent. Animals and plants can be bred to produce offspring with specific and desired characteristics. This is called selective breeding. Examples

	and some different body parts, such as fins or wings. Carnivores eat other animals (meat), herbivores eat plants and omnivores eat other animals and plants. Living things need to be cared for in order for them to survive. They need water, food, warmth and shelter.		animals. Herbivores get their nutrition from plants. Omnivores get their nutrition from eating a combination of both plants and other animals. Plants need air, light, water, minerals from the soil and room to grow, in order to survive. Different plants have different needs depending on their habitat. Examples include cacti, which need less water than is typical, and ferns, which can grow in lower light levels.	typically a green plant. The producer is eaten by a primary consumer (prey), which is eaten by a secondary consumer (prey), which is eaten by a tertiary consumer. All food chains end with a top or apex predator. Changes within a food chain, such as an abundance or lack of one food type, have an impact on the entire food chain. An adaptation helps an animal or plant survive in its habitat. If living things are unable to adapt to changes within their habitat, they are at risk of becoming extinct.	essential for the continued survival of a species. There are two types of reproduction: sexual and asexual. Sexual reproduction involves two parents (one female and one male) and produces offspring that are different from the parents. Asexual reproduction involves one parent and produces offspring that is identical to the parent.	include cows that produce large quantities of milk or crops that are disease-resistant. The role of the circulatory system is to transport oxygen, water and nutrients around the body. They are transported in blood and delivered to where they are needed. An adaptation is a physical or behavioural trait that allows a living thing to survive and fill an ecological niche. Adaptations evolve by natural selection. Favourable traits help an organism survive and pass on their genes to subsequent generations.
Skill	Identify, compare, group and sort a variety of common wild and garden plants, including deciduous and evergreen trees, based on observable features. Identify, compare, group and sort a variety of common animals, including fish, amphibians, reptiles, birds, invertebrates and mammals, based on observable features.	Identify and name a variety of plants and animals in a range of habitats and microhabitats. Revise the Identification of a variety of common animals, including fish, amphibians, reptiles, birds, invertebrates and mammals, based on observable features. Describe the basic life cycles of some familiar animals (egg, caterpillar, pupa, butterfly; egg, chick, chicken; spawn, tadpole, froglet, frog).	Describe how animals are grouped and what they need to survive. Identify and group animals that have no skeleton, an internal skeleton (endoskeleton) and an external skeleton (exoskeleton). Compare and contrast the diets of different animals. Describe the requirements of plants for life and growth (air, light, water, nutrients and	Compare, sort and group living things from a range of environments, in a variety of ways, based on observable features and behaviour. Construct and interpret a variety of food chains and webs to show interdependence and how energy is passed on over time. Explain how adaptations help living things to survive in their habitat.	Group and sort plants by how they reproduce. Describe, using their knowledge of food chains and webs, what could happen if a habitat had a living thing removed or introduced. Describe the life process of reproduction in some plants and animals.	Use and construct classification systems to identify animals and plants from a range of habitats. Classify living things, including microorganisms, animals and plants, into groups according to common observable characteristics and based on similarities and differences. Explain that the circulatory system in animals transports oxygen, water and nutrients around the body.

	Group and sort a variety of common animals based on the foods they eat. Describe how to care for plants and animals, including pets.	Interpret and construct simple food chains to describe how living things depend on each other as a source of food. Explain how animals, including humans, need water, food, air and shelter to survive.	room to grow) and how they vary from plant to plant.			Identify how animals and plants are adapted to suit their environment, such as giraffes having long necks for feeding, and that adaptations may lead to evolution.
Cornerstones Unit						

Knowledge and Skills Progression Science

Place and Space

Habitats

Strand	Year 1	Year 2	Lower Key Stage 2		Upper Key Stage 2	
Knowledge	The local environment is a habitat for living things and can change during the seasons.	Local habitats include parks, woodland and gardens. Habitats beyond the locality include beaches, rainforests, deserts, oceans and mountains. All living things live in a habitat to which they are suited and it must provide everything they need to survive.	Environments are constantly changing due to natural influences, such as seasons, extreme weather, population changes and availability of food. Living things must adapt to these changes in order to survive.	Humans can affect habitats in negative ways, such as littering, pollution and land development, or positive ways, such as garden ponds, bird boxes and wildflower areas.	Farming in the UK can be divided into three main types: arable (growing crops), pastoral (raising livestock), mixed (arable and pastoral). Intensive farming in the past has resulted in the loss of habitats.	Living things are classified into groups, according to common observable characteristics and based on similarities and differences.
Skill	Observe the local environment throughout the year and ask and answer questions about living things and seasonal change.	Describe a range of local habitats and habitats beyond their locality (beaches, rainforests, deserts, oceans and mountains) and what all habitats provide for the things that live there.	Describe how environments can change due to natural influences and how living things need to be able to adapt to these changes.	Describe how environments can change due to human and natural influences and the impact this can have on living things.	Research and describe different farming practices in the UK and how these can have positive and negative effects on natural habitats.	Research unfamiliar animals and plants from a range of habitats, deciding upon and explaining where they belong in the classification system.
Cornerstones Unit						

Knowledge and Skills Progression Science

Comparison

Physical Things & Phenomena

Strand	Year 1	Year 2	Lower Key Stage 2		Upper Key Stage 2	
Knowledge	Materials can be grouped according to their properties. Shadows are normally the same shape as the object that cast them. Shadows change during the day as the Sun appears to change position in the sky. Shadows occur where light is blocked by an opaque object.	Living things are those that are alive. Dead things are those that were once living but are no longer. Some things have never been alive. Volume is how loud or quiet a sound is. Pitch is how high or low a sound is.	Magnets have two poles (north and south). Opposite poles (north and south) attract each other, while like poles (north and north, or south and south) repel each other. Friction is a force between two surfaces as they move over each other. Friction slows down a moving object. Smooth surfaces usually generate less friction than rough surfaces.	Electricity is a type of energy. It is used to power many everyday items, such as kettles, computers and televisions. Electricity can also come from batteries. Batteries eventually run out of power and need to be recycled or recharged. Batteries power devices that can be carried around, such as mobile phones and torches. Sounds are louder closer to the sound source and fainter as the distance from the sound source increases.	A life cycle is the series of changes in the life of a living thing and includes these basic stages: birth, growth, reproduction and death. Mammals' life cycles include the stages: embryo, juvenile, adolescent and adult. Amphibians' life cycles include the stages: egg, larva (tadpole), adolescent and adult. Some insects' (butterflies, beetles and bees) life cycles include the stages: egg, larva, pupa and adult. Birds' life cycles include the stages: egg, baby, adolescent and adult. Friction, air resistance and water resistance are forces that oppose motion and slow down moving objects. These forces can be useful, such as bike brakes and parachutes, but sometimes we need to minimise their effects, such as streamlining boats and planes to move through water or air more easily and using lubricants and ball bearings between two surfaces to reduce friction.	Environmental factors can affect the distribution of living things within a habitat. These factors include light (intensity and duration), weather, altitude, soil type and humans, such as when we mow or trample grass. Materials can be grouped according to their properties. A circuit needs a power source, such as a battery or cell, with wires connected to both the positive and negative terminals. An electric current is the flow of electric charge around a circuit. The electric current flows from the cell through all the components and back to the cell. When a switch is open, it creates a gap and the current cannot travel around the circuit. When a switch is closed, it completes the circuit and

						allows a current to flow all the way around it.
Skill	Compare and group materials in a variety of ways, such as based on their physical properties; being natural or human-made and being recyclable or non-recyclable. Compare shadows made by different objects and materials.	Compare and group things that are living, dead or have never been alive. Compare the volume and pitch of sounds made by instruments, their voices or other objects.	Investigate and compare a range of magnets (bar, horseshoe and floating) and explain that magnets have two poles (north and south) and that opposite poles attract each other, while like poles repel each other. Compare how objects move over surfaces made from different materials.	Compare common household equipment and appliances that are and are not powered by electricity. Compare how the volume of a sound changes at different distances from the source.	Compare the life cycles of animals, including a mammal, an amphibian, an insect and a bird. Compare and describe, using a range of toys, models and natural objects, the effects of water resistance, air resistance and friction.	Compare the living things in two contrasting areas of a habitat (top vs bottom of a hill, full sun vs shade, exposed location vs sheltered location or well-trodden path vs unused area). Compare and give reasons for variations in how components in electrical circuits function (brightness of lamps; volume of buzzers and function of on or off switches).
Cornerstones Unit						

Knowledge and Skills Progression Science

Change

Living Things

Strand	Year 1	Year 2	Lower Key Stage 2		Upper Key Stage 2	
Knowledge	All living things (plants and animals) change over time as they grow and mature.	Plants grow from seeds and bulbs. Seeds and bulbs need water and warmth to start growing (germinate). As the plant grows bigger, it develops leaves and flowers.	Flowers are important in the life cycle of flowering plants. The processes of a plant's life cycle include germination, flower production, pollination, seed formation and seed dispersal. Insects and the wind can transfer pollen from one plant to another (pollination). Animals, wind, water and explosions can disperse seeds away from the parent plant (seed dispersal).	Habitats change over time, either due to natural or human influences. Natural influences include extreme or unseasonable weather. Human influences include habitat destruction or pollution. These changes can pose a risk to animals and plants that live in the habitat.	Humans go through characteristic stages as they develop towards old age. Puberty is the transition between childhood and adulthood. As humans age, many of the body's systems gradually decline, leading to the changes seen in older people. The gestation period is the time between conception and birth. In general mammals with a smaller mass have a shorter gestation period than mammals with a larger mass. Humans are mammals and have a mammalian life cycle.	
Skill	Describe, following observation, how plants and animals change over time.	Observe and describe how seeds and bulbs change over time as they grow into mature plants.	Draw and label the life cycle of a flowering plant.	Explain how unfamiliar habitats, such as a mountain or ocean, can change over time and what influences these changes.	Describe the changes as humans develop from birth to old age.	
Cornerstones Unit						

Knowledge and Skills Progression WORKING SCIENTIFICALLY

Strand	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Skills and Knowledge	• Ask questions such as: - Why are flowers different colours? - Why do some animals eat meat and others do not? • Set up a test to see which materials keeps things warmest, know if the test has been successful and can say what has been learned • Explain to someone what has been learned from an investigation they have been involved with and draw conclusions from the answers to the questions asked • Measures (within Year 1 mathematical limits) to help find out more about	• Ask questions such as: - Why do some trees lose their leaves in Autumn and others do not? - - How long are roots of tall trees? - Why do some animals have underground habitats? • Use equipment such as thermometers and rain gauges to help observe changes to local environment as the year progresses • Use microscopes to find out more about small creatures and plants • Know how to set up a fair test and do so when finding out about how seeds grow best • Classify or group things according to a given criteria, e.g.	• Ask questions such as: - Why does the moon appear as different shapes in the night sky? - Why do shadows change during the day? - Where does a fossil come from? • Observe at what time of day a shadow is likely to be at its longest and shortest • Observe which type of plants grow in different places e.g. bluebells in woodland, roses in domestic gardens, etc. • Use research to find out how reflection can help us see things that are around the corner • Use research to find out what the main differences are between sedimentary and igneous rocks	• Ask questions such as: • Why are steam and ice the same thing? o Why is the liver important in the digestive systems? • What do we mean by 'pitch' when it comes to sound? • Use research to find out how much time it takes to digest most of our food • Use research to find out which materials make effective conductors and insulators of electricity • Carry out tests to see, for example, which of two instruments make the highest or lowest sounds and to see if a glass of ice weighs the same as a glass of water • Set up a fair test with more than one variable e.g. using different materials to cut out sound • Explain to others why a test that has been set up is a fair one e.g. discover how fast ice melts in different temperatures	• Set up an investigation when it is appropriate e.g. finding out which materials dissolve or not • Set up a fair test when needed e.g. which surfaces create most friction? • Set up an enquiry-based investigation: e.g. find out what adults / children can do now that they couldn't when a baby • Know what the variables are in a given enquiry and can isolate each one when investigating e.g. finding out how effective parachutes are when made with different materials • Use all measurements as set out in Year 5 mathematics (measurement), including capacity and mass • Use other scientific instruments as needed e.g. thermometer, rain gauge, spring scales (for measuring Newtons) • Able to record data and present them in a range of ways including diagrams,	• Know which type of investigation is needed to suit particular scientific enquiry e.g. looking at the relationship between pulse and exercise • Set up a fair test when needed e.g. does light travel in straight lines? • Know how to set up an enquiry based investigation e.g. what is the relationship between oxygen and blood? • Know what the variables are in a given enquiry and can isolate each one when investigating • Justify which variable has been isolated in scientific investigation • Use all measurements as set out in Year 6 mathematics (measurement), including capacity,

	the investigations undertaken ○	deciduous and coniferous trees • Draw conclusions from fair tests and explain what has been found out • Use measures (within Year 2 mathematical limits) to help find out more about the investigations they are • engaged with	• Test to see which type of soil is most suitable when growing two similar plants • Test to see if their right hand is as efficient as their left hand • Set up a fair test with different variables e.g. the best conditions for a plant to grow • Explain to a partner why a test is a fair one e.g. lifting weights with right and left hand, etc. • Measure carefully (taking account of mathematical knowledge up to Year 3) and add to scientific learning • Use a thermometer to measure temperature and know there are two main scales used to measure temperature • Gather and record information using a chart, matrix or tally chart, depending on what is most sensible • Group information according to common factors e.g. plants that grow in woodlands or plants that grow in gardens • Use bar charts and other statistical tables (in line with Year 3	• Measure carefully (taking account of mathematical knowledge up to Year 4) and add to scientific learning • Use a data logger to check on the time it takes ice to melt to water in different temperatures • Use a thermometer to measure temperature and know there are two main scales used to measure temperature • Gather and record information using a chart, matrix or tally chart, depending on what is most sensible • Group information according to common factors e.g. Materials that make good conductors or insulators • Use bar charts and other statistical tables (in line with Year 4 mathematics statistics) to record findings • Present findings using written explanations and include diagrams, when needed • Write up findings using a planning, doing and evaluating process • Make sense of findings and draw conclusions which helps them understand more about the scientific information that has been learned	labels, classification keys, tables, scatter graphs and bar and line graphs • Make predictions based on information gleaned from investigations • Create new investigations which take account of what has been learned previously • Able to present information related to scientific enquiries in a range of ways including using IT such as power point and iMovie • Use diagrams, as and when necessary, to support writing • Is evaluative when explaining findings from scientific enquiry • Clear about what has been found out from recent enquiry and can relate this to other enquiries, where appropriate • Their explanations set out clearly why something has happened and its possible impact on other things • Able to give an example of something focused on when supporting a scientific theory e.g. how much easier it is to lift a heavy object using pulleys • Keep an on-going record of new scientific words that they have come across for the first time	mass, ratio and proportion • Able to record data and present them in a range of ways including diagrams, labels, classification keys, tables, scatter graphs and bar and line graphs • Make accurate predictions based on information gleaned from their investigations and create new investigations as a result • Able to present information related to scientific enquiries in a range of ways including using IT such as power-point, animator and iMovie • Use a range of written methods to report findings, including focusing on the planning, doing and evaluating phases • Clear about what has been found out from their enquiry and can relate this to others in class • Explanations set out clearly why something has happened and its possible impact on other things • Aware of the need to support conclusions with evidence

			mathematics statistics) to record findings • Know how to use a key to help understand information presented on a chart • Be confident to stand in front of others and explain what has been found out, for example about how the moon changes shape • Present findings using written explanations and include diagrams when needed • Make sense of findings and draw conclusions which help them to understand more about scientific information • Amend predictions according to findings • Be prepared to change ideas as a result of what has been found out during a scientific enquiry	• When making predictions there are plausible reasons as to why they have done so • Able to amend predictions according to findings • Prepared to change ideas as a result of what has been found out during a scientific enquiry	• Able to relate causal relationships when, for example, studying life cycles • Frequently carry out research when investigating a scientific principle or theory	• Keep an on-going record of new scientific words that they have come across for the first time and use these regularly in future scientific write ups • Use diagrams, as and when necessary, to support writing and be confident enough to present findings orally in front of the class • Able to give an example of something they have focused on when supporting a scientific theory e.g. classifying vertebrate and invertebrate creatures or why certain creatures choose their unique habitats • Frequently carry out research when investigating a scientific principle or theory

Scientific Vocabulary			
Science Topic	Year 1 and 2	Year 3 and 4	Year 5 and 6
Work Scientifically	Experience, observe, changes, patterns, grouping, sorting, classifying, compare, identify (name), data, measure, record, equipment, questions, test, investigate, explore, magnifying glass / hand lens, same, different	Develop, enquiry, practical, enquiry, fair test, comparative test, relationships, conclusion, accurate, thermometer, data logger, estimate data, diagram, key, (identifying) table chart, bar chart, results, predictions, explanation, reason, similarity, difference, question, evidence, information, findings, criteria, values, properties, characteristics	Variables, evidence, justify, accuracy, precision, scatter graphs, bar graphs, line graphs, argument (science), causal, relationship
Animals, Including Humans	Names of common animals: fish, amphibians, reptiles, birds, Mammals, carnivores, herbivores, omnivores Human body senses: see, hear, feel, smell, taste Habitat, local environment, pet, wild, animal, insect, mini-beast, food, eat, head, neck, body, arms, legs, ears, eyes, nose, mouth, tongue, hands, feet, fingers, toes, elbows, knees, hair, teeth, grow, healthy, offspring, adults, young, water, air, survive, exercise, hygiene, egg, chick, chicken, caterpillar, pupa, moth, butterfly, tadpole, frog, frog spawn, lamb, sheep, calf, cow, foal, horse	Nutrition, diet, skeleton, muscles, protection, support, movement, bones, skull, shell, digestive system, stomach, small intestine, large intestine, oesophagus, Types of teeth: molar, premolar, incisor, canine saliva	Puberty, gestation period, circulatory system, heart, lungs, blood vessels, blood, lifestyle, disease, water transportation, nutrient transportation, oxygen, air, breathing, exercise, diet, drugs
Plants	Plants, wild plants, garden plants, evergreen trees, deciduous trees, common flowering plants, flowers, vegetables, leaf/leaves, flower, blossom, petal, stem, trunk, branch, root, seed, bulb, bud, growth, grow, habitat, local environment, leaf fall, water, light, temperature, healthy growth, survive, soil, germinate, stages of growth	Functions, nutrients, nutrition, air, transport (water), life cycle, pollination, seed formation, seed dispersal, reproduce, fertiliser	

Living Things and Their Habitats (including Evolution and Inheritance)	Pond, garden, field, park, woodland, sea shore, river, ocean, forest, rainforest, stones, rocks, logs, leaf, litter, habitat, micro-habitat, living, dead, not living, alive, healthy, food, food chain, depend, source of food, shelter, grow, growth, healthy	Environment, non-flowering plants, ferns, mosses, flowering plants, grasses, Vertebrate animals: fish, birds, mammals, amphibians, reptiles Invertebrate animals: snails, worms, slugs, spiders, insects Human impact – litter, deforestation, population increase, nature reserves	Life cycles, reproduction, life processes, sexual and asexual reproduction (plants), root cuttings, classification, microorganisms, organisms, evolution, evolve, adaptation, variation, inherit, inheritance Materials
Materials (including Rocks and Soils)	Everyday materials: wood, paper, plastic, metal, glass, water, rock, brick, stone, fabric material, foil, elastic, dough, rubber, card, cardboard, clay Object: make/made hard/soft shiny/dull stretchy/stiff rough/smooth bendy/not bendy waterproof/not waterproof transparent/opaque absorbent/not absorbent, squash, twist, bend, stretch		Rock, soil, fossil, organic matter, grains, crystals, sedimentary rock, metamorphic rock, igneous rock (including rocks and soils) Properties, hardness, solubility, transparency, electrical conductivity, thermal conductivity, magnetism, dissolve, solution, substance, separating, mixing, filtering, sieving, reversible change, burning, rusting, reactions, irreversible change
States of Matter		Solid, liquid, gas, temperature, heat (heating), cool (cooling), water cycle, evaporation, condensation, melting, freezing,	
Earth and Space (Including Seasons)	Seasons, seasonal change, spring, summer, autumn, winter, weather, sun, sunshine, rain, snow, sleet, ice, frost, fog, cloud, hot, cold, storm, sky, earth, night, day		Solar system planets: Mercury, Venus, earth, Mars, Jupiter, Saturn, Neptune, Uranus Moon, stars, spherical bodies, rotation, orbit, satellite, gravity, light years Electricity
Electricity		Electricity, simple circuit, light bulb, cell, wire, buzzer, switch, motor, battery, series, circuit, conductor, insulator	Voltage, components, symbols, circuit, diagram

Forces		Move, movement, surfaces, forces, push, pull, contact, distance, magnet, bar magnet, ring magnet, horseshoe magnet, attract, repel, poles (of magnets), magnetic, materials	Gravity, air resistance, water resistance, friction, levers, pulleys, gears, springs
Light		Light, dark (absence of light), reflect, shadow, opaque, mirror, reflective, surface	Light sources, periscope
Sound		Sound, vibration, vibrate, pitch, volume, insulation	