**CYCLE: A**

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| **SUBJECT:**  **Science** | **Autumn** | **Spring** | **Summer** |
| **KS1** | Unit Name:  **Everyday materials (Y1)**   * fragile – easily broken or damaged * waterproof – keeps water out * hard – solid or firm, not easily broken * soft – easy to mould, cut, fold or change shape. * rough – having an uneven surface. * smooth – having an even surface.   Key Skills   * 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.   **Plants (Y1)**   * flower – the seed bearing part of a plant that is usually surrounded by brightly coloured petals. * plant – a living organism. * tree – a woody plant. deciduous – a tree that loses its leaves annually * evergreen – a tree the does not lose its leaves.   Key Skills  • 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.   * Explain the differences between a flower and a tree. | Unit Name:  **Everyday materials (Y2)**   * material – the substance used to make something. * flexible – easily bent without breaking. * rigid – difficult to bend. * bend – to make a curved shape. * stretch – to make longer. * twist – to turn an object in opposite. directions so that parts of the object are turned away from each other.   Key skills   * identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, 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. | Unit Name:  **Plants (Y2)**   * seed – a small part of a plant that can grow another plant. * bulb – a fleshy base of a plant that can grow another plant. * roots – the part of the plant that attaches into the ground for support and nutrient collection. * stem – the main stalk of a plant. * leaf – part of a plant that is typically flat and hangs o­ the stem.   Key Skills   * observe and describe how seeds and bulbs grow into mature plants * investigate and describe how plants need water, light and a suitable temperature to grow and stay healthy.   **Seasonal changes** |
| **LKS2** | Unit Name:  **Sound**   * vibrate/vibrations - forward and backward movement of an object (usually rapidly). * volume - how loud or quiet a sound is. * pitch - how high or low a sound is. * pinna - the outer portion of the ear (ear flap). * cochlea - the sound reception part of the inner ear. * ear drum - the membrane which collects sound from the pinna and passes it to the inner ear.   Key skills   * 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. | Unit Name:  **States of matter**   * gas - a state of matter that has no defined shape or volume * liquid - a state of matter that flows freely but keeps the same volume * precipitation - when water falls from the clouds in the sky * solid - a state of matter that is firm and stable * condensation - when water vapour cools and turns back into water * evaporation - when water is heated and turns into water vapour   Key skills  • 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.  **Animals including humans (Y3)**   * vertebrate – an animal with a backbone (spine) * invertebrate - an animal without a backbone (spine) * diet – the food that an animal eats * nutrition – food or nourishment * skeleton – the framework of bones that supports the body of an animal * muscles – a bundle of tissue in the body of an animal that can contract enabling movement   Key skills   * 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. | Unit Name:  **Livings things and their habitats**   * adaptation – the way in which an organism is particularly suited to its environment * environment – the conditions (both living and non-living) that surround an organism * classify – to arrange a group of people or things in classes or categories according to shared qualities or characteristics * vertebrate – an animal that has a backbone * invertebrate – an animal without a backbone * exoskeleton – a rigid external covering for the body in some invertebrate animals   Key skills   * recognise that living things can be grouped in a variety of ways * explore and use classification keys to help group, identify and name a 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.   **Animals including humans (Y4)**   * Predator – an animal that hunts, kills and eats other animals for food * Prey – a term used to describe organisms that predators kill for food * Producer – a plant in a food chain * Herbivore – animals that only eat plants * Carnivore – animals that only eat other animals * Digestion – the process of breaking down food into simple chemicals for the body to absorb   Key skills   * 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 |
| **UKS2** | Unit Name:  **Animals including humans (Y5)**   * conception/fertilisation – when the egg and the sperm meet to begin the development of a foetus. * egg – the female sex cell * foetus – a baby that is still developing in the womb * puberty – a time in the human life cycle when the body goes through changes to become an adult * sperm – the male sex cell * womb – an organ in which the foetus grows and develops   Key skills   * describe the changes as humans develop to old age. | Unit Name:  **Evolution and Inheritance**   * Adaptation - When a plant or animal has changed in some way, usually over a long period of time, to be better suited to the environment in which they live. * Environment - the conditions that surround an organism. * Evolution - the process by which diff­erent kinds of living organisms are believed to have developed from earlier forms during the history of the Earth. * Gene - A unit of heredity which is transferred from a parent to o­ffspring and is held to determine some of the o­ffspring. * Natural selection - When the fittest, most adapted organisms survive and multiply whilst the least adapted die out. * Inheritance - the reception of genetic qualities by transmission from parent to offspring. * Organism - an individual animal, plant or single-celled life form. * Species - a group of similar organisms that are able to reproduce.   Key skills   * 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.   **Animals including humans (Y6)**   * heart – a muscle that pumps blood around the body * lungs – spongy air filled organs that provide oxygen to the blood * blood – a liquid that carries oxygen, water and nutrients around the body * veins – carry deoxygenated blood to the heart * arteries – carry oxygenated blood away from the heart * heart rate – the number of times our heart beats per minute   Key skills   * 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. | Unit Name:  **Light**   * opaque – opaque materials do not let any light pass through them. They block the light. * translucent – translucent materials let some light through, but scatter the light in all directions so that they cannot see clearly through them * transparent – transparent materials let light pass through them in straight lines so that you can see clearly through them * scattering – when light is returned from a surface * absorption – when light strikes a surface and is retained within it. * refraction – the “bending” of light when it passes from one transparent material to another.   Key skills   * 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   **Electricity**   * renewable energy – energy from a source that is not depleted when used, such as wind or solar power * non-renewable energy – energy from a source that is depleted when used, such as coal, gas and oil. * appliance – a device or piece of equipment that has been made to perform a specific task * current – the rate of flow of electricity measured in amps * pylon – a tower used for keeping electrical wires above the ground * portable – can be easily carried around   Key Skills   * 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. |

**CYCLE: B**

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| **SUBJECT:**  **Science** | **Autumn** | **Spring** | **Summer** |
| **KS1** | Unit Name:  **Animals including humans (Y1)**   * animal – a living thing * mammal – a type of animal that has hair on its body and drinks milk * bird – a type of animal with feathers, wings and a beak * fish – a type of animal with scales, fins and lives in water * reptile – a type of animal with scales that lives on land * amphibian – a type of animal that is born in water but then develops lungs and lives on land   Key skills   * identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. * Describe and compare the structure of a variety of common animals including fish, amphibians, reptiles, birds and mammals. * Identify, name, draw and label the basic parts of the human body and say which part of the body associates with which sense. | Unit Name:  **Living things and their habitats**   * conditions – the state of something * adapted – how something is adjusted * food chain – a series of living things that feed from each other * alive – something that is living * dead – something that was living but is not anymore * living – something that is alive * habitat – the place in which a living thing lives .   Key skills   * 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 micro-habitats * 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. | Unit Name:  **Animals including humans (Y2)**   * basic needs – the things humans need to survive * diet – the food we eat * exercise – moving our bodies * hygiene - keeping clean * illness – when we do not feel well/ feel sick/ have a disease * medicine – something we might take to feel better * survive – to live   Key skills   * 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. |
| **LKS2** | Unit Name:  **Rocks**   * rock – a solid material that makes up the surface of the Earth * soil – a black or dark brown material on the upper layer of the Earth where plants grow * fossil – the remains of a prehistoric animal embedded in rock * appearance – what something looks like * igneous rock – rock formed through the cooling and solidification of magma or lava * sedimentary rock – rock formed from sediments that have settled at the bottom of a lake, sea or ocean and have been compressed together over millions of years * metamorphic rock – rock formed from other rocks that are changed because of heat or pressure   Key skills   * compare and group together different types of rock based on 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.  **Electricity**   * components – the parts of a circuit * conductor – allows electricity to flow through it * electrical – something that uses electricity to work * insulator – doesn’t allow electricity to flow through it * mains power – electricity provided by power stations * battery – a small item used to power small appliances   Key skills   * 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 * 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 | Unit Name:  **Forces**   * force – a push, pull, twist or turn caused when two objects interact with each other * magnet – an object or device that attracts iron or another magnetic material * contact – touching * non-contact – not touching * attract – pull towards * repel – push away * magnetic– attracted to a magnet * non-magnetic – not attracted to a magnet   Key skills   * Compare how things move on different surfaces. * Notice that some forces need contact between two 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 a variety of everyday materials together based on whether they are attracted to a magnet and identify some magnetic materials. * Describe magnets as having two poles. * Predict whether two magnets will attract or repel each other, depending on which poles are facing. | Unit Name:  **Plants**   * nutrients – something that provides nourishment to a living thing * pollination – the transfer of pollen to allow fertilisation * formation – to create * dispersal – to distribute or spread over a wide area   Key skills   * 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.   **Light**   * light source - something that emits light * dark - the absence of light * reflect - a surface (or body) that throws back light without absorbing it * shadow - an area where direct light from a light source cannot reach due to obstruction by an object * luminous - giving off light, bright or shining. * Light source – an object that produces light.   Key skills   * 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 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 a solid object * find patterns in the way that the size of shadows change |
| **UKS2** | Unit Name:  **Forces**   * friction – the force that acts upon one surface when it moves against another. * gravity – a pull force that acts at a distance. * resistance – an opposing or slowing force. * drag – the frictional force experienced by an object moving through a fluid or air. * streamlined – a shape which minimises the profile presented by an object in order to minimise the resistance it encounters when moving through a liquid or gas. * upthrust or buoyancy – the upward force exerted on a body by a fluid that surrounds it, equal and opposite to the weight of the water displaced. * newton (N) – the unit used to measure force.   Key Skills   * explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling objects * 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.   **Living things and their habitats (Y5)**   * reproduction – the combining of genetic material from two individuals to produce new life * pollen – granule that delivers the male genetic material to the female seed * stamen – the male part of the flower, comprising of the anther and filament * pistil – the female part of the flower consisting of the stigma, style and ovary   Key skills   * describe the differences in the life cycles of a mammal, an amphibian, a reptile, an insect and a bird * describe the life process of reproduction in some plants and animals. | Unit Name:  **Earth and Space**   * orbit – the rotation that one body in space takes around another when under gravitational influence * axis – an imaginary line going through a central body that most bodies in space rotate around * planet – a non-luminous body that orbits a star * solar system – the name given to the Sun and all the bodies orbiting around it   Key skills   * 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. | Unit Name:  **Materials**   * soluble - a substance that will dissolve in water * insoluble - a substance that will not dissolve in water * boiling - the process by which molecules of a liquid change to vapour (much faster change than evaporation) * condensing - the change of vapour into a liquid evaporation - change from a liquid to a vapour freezing - the change of a liquid to a solid * reversible change - a physical change that we can undo * irreversible change - a physical change that we cannot undo   Key skills   * Compare and group everyday materials based on 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 we might separate mixtures, 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 the bicarbonate of soda.   **Living things and their habitats (Y6)**   * vertebrate – an animal that has a backbone * invertebrate – an animal without a backbone * exoskeleton – a rigid external covering for the body in some invertebrate animals * vascular – plants that use roots and stems to take in water and nutrients * non-vascular – plants that do not use roots and stems to take in water and nutrients * taxonomy – the scientific process of grouping or classifying living organisms   Key Skills   * describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals * give reasons for classifying plants and animals based on specific characteristics |