Science

End of Year Expectations

	Strand	Unit	National Curriculum Objectives	Key Knowledge	Enrichment
Year 6	Biology	Living things and their habitats: Classification	➢ Describe how living things are classified into broad groups accordingto common observable characteristicsand based on similarities and differences, including micro-organisms,plants and animals ➢ Give reasons for classifying plantsand animals based on specific characteristics	➢ There are seven life processes. ➢ There are five kingdoms of life: animals, plants, fungi, monera and protista. ➢ Each kingdom of life can be identified via their cells. ➢ Living things can be classified into different groups according to specific characteristics, similarities and differences. ➢ Groups that living things are divided into can be subdivided, e.g. animals can be further divided into vertebrates and invertebrates.	Dissection Eco Warriors
		Animals including humans: The circulatory system	➢ Identify and name the main parts ofthe 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 waytheir bodies function ➢ Describe the ways in which nutrientsand water are transported within animals, including humans	➢ When we breathe in, we take oxygen into our lungs. The oxygen is absorbed into the blood in our lungs through tiny blood vessels. Once in the blood, it is taken to the heart to be pumped around the body. ➢ Respiration happens in the body and the oxygen is used up leaving carbon dioxide in its place. This carbon dioxide is transported back into the blood and back to the heart where it is sent to the lungs to be oxygenated again. ➢ Blood with no oxygen (deoxygenated blood) enters the right atrium. It then passes through a valve into the right ventricle. The blood is then pumped to the lungs to be oxygenated. It then travels back to the heart and enters the left atrium. It then passes through a valve into the left ventricle. It then passes through the aorta to oxygenate the rest of the body. ➢ Blood is made up of four components: red blood cells, white blood cells, plasma and platelets. ➢ Red blood cells carry oxygen around the body and carbon dioxide out of the body. ➢ White blood cells protect the body by killing harmful bacteria and viruses. ➢ Plasma carries hormones, nutrients and proteins around the body which we need to survive. ➢ Platelets play a major role in blood clotting by plugging holes in injured blood vessels and stopping bleeding. ➢ Lifestyle is an important factor in keeping our bodies healthy. ➢ Humans should eat a balanced diet comprised of fruit and vegetables, carbohydrates, dairy, protein, oils and spreads and foods that are high in fat/sugar. ➢ Some drugs can help us to feel better when we are unwell, but some drugs have detrimental effects on our bodies, e.g.	

				cigarettes contain tobacco which causes damage to the lungs whilst paracetamol can provide pain relief. ➢ Exercise helps to maintain healthy physical and mental health. It releases healthy hormones and helps to keep vital organs working well.	
		Evolution, Inheritance and fossils	➢ Recognise that living things have changed over time and that fossils provide information about living thingsthat inhabited the Earth millions of years ago ➢ Recognise that living things produceoffspring of the same kind, but normally offspring vary and are notidentical to their parents ➢ Identify how animals and plants areadapted to suit their environment indifferent ways and that adaptation may lead to evolution	➢ Living things have changed over time (and give examples of this). ➢ Fossils provide information about living things that inhabited the Earth millions of years ago. ➢ Living things produce offspring. Characteristics are passed on from parents to their offspring. ➢ Animals and plants are adapted in different ways to suit their environment and that adaptation may lead to evolution. ➢ Variation in offspring over time can make animals more or less able to survive in particular environments.	
	Physics	Light: How light travels	➢ Recognise that light appears to travel instraight lines ➢ Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect lightinto the eye ➢ Explain that we see things because lighttravels 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 havethe same shape as the objects that cast them	➢ Light travels in straight lines. ➢ Shadows are formed when light is blocked by an opaque object and therefore will always be the same shape as the object that casts them. ➢ Shadows change in size depending on the distance from a light source. ➢ Light changes direction when it is reflected. The direction it travels in from a light source is called the incident ray. The direction it travels in when reflected is called the reflected ray. This is called the law of reflection. ➢ We see objects because light travels from a light source in a straight line to the object and is then reflected into our eyes. ➢ Light enters our eyes through the pupil and is reflected onto the retina which changes the light to nerve signals and sends them to the brain. This is how we see images. ➢ All objects reflect light, but some do this more than others. ➢ Objects appear bent in water due to light being refracted. This is also why we see rainbows as light from the sun is being refracted by the raindrops and dispersed to show the visible colour spectrum: red, orange, yellow, green, blue, indigo, violet.	
		Electricity: Circuits and their symbols	➢ Associate the brightness of a lamp or the volume of a buzzer with the numberand voltage of cells used in the circuit	➢ A circuit must be complete in order for components such as bulbs and buzzers to function. ➢ The higher the voltage of a cell, or the number of cells used in a circuit, the brighter a bulb will be and the louder a buzzer will be.	

			➢ Compare and give reasons for variationsin 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	➢ Electrical current can be controlled by the use of a switch. When the switch is on, the electrical current can flow. When it is off, the electrical current cannot flow through the circuit. ➢ There are different symbols that are used when drawing electrical circuits which represent the different components.	
Year 5	Biology	Living things and their habitats: Lifecycles and reproductions	➢ Know the life cycle of different living things, e.g. Mammal, amphibian, insectbird. ➢ Know the differences between ➢ different life cycles. ➢ Know the process of reproduction inplants. ➢ Know the process of reproduction inanimals.	➢ The mixing of male and female materials results in fertilisation which results in seeds being formed and distributed. The seeds then grow into a new plant. ➢ Non flowering plants reproduce asexually (liverworts, moss, fern, potatoes) e.g, moss produces tiny spores which land and grow into new a new moss plant. E.g Potato plants produce tubers on its roots (this is the potato). Each tuber grows buds and the bud grows to form a new potato plant. ➢ The lifecycle of an insect; egg, larvae, pupae, adult. ➢ Metamorphasis is a biological process by which an animal physically develops after birth or hatching. ➢ takes place. If happens in the lifecycle of some insects and amphibians. ➢ There are 3 types of mammals; Placentals, Monotremes, Masupials. ➢ Most mammals are placentals their young grow inside the womb and are born fully developed. ➢ Some mammals are Monotremes, their hatch their young from eggs. ➢ Some mammals are Marsupials, their young are born incompletely developed and need to be carried and fed in a pouch. ➢ The lifecycle of a mammal (the most common-placentals); embryo, young, adult. ➢ The lifecycle of a bird; egg, embryo, hatchling, chick, adult. ➢ The lifecycle of an amphibian; egg, newly hatched lavae, maturing lavae, adult.	Space Centre Sleepover Eco Warriors
		Animals including humans: Growth and development	➢Describe the changes as humans develop to old age.	➢ There are different stages of growth and development in humans including: embryo/foetus, baby/toddler, childhood, adolescence, adulthood, old age. ➢ Puberty occurs due to hormones being released from the pituitary gland. Females release oestrogen and progesterone. Males release testosterone. ➢ During puberty the body changes. The changes are different for female and males. ➢ Females changes include; oily skin, grow breasts, grow pubic hair, and hair under the armpits and on the legs, menstruation. ➢ Male changes include; oily skin, increase in facial, chest and pubic hair, scrotum, testes and penis develop.	

				➢ Senses become dulled as you get older. ➢ Death after old age is part of the human lifecycle. ➢ The stages of decomposition are; fresh, bloat, active decay, advanced decay, dry remains. ➢ Animals have different gestation periods and life spans. A gestation period is the period of time between pregnancy and birth. ➢ Throughout the gestation period, the length and mass of a baby changes.	
	Chemistry	Properties and changes of materials: Reversible and irreversible changes	➢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 torecover a substance from a solution ➢Use knowledge of solids, liquids and gases todecide how mixtures might be separated, including through filtering, sieving and evaporating ➢Give reasons, based on evidence from comparative and fair tests, for the particularuses of everyday materials, including metals, wood and plastic ➢Demonstrate that dissolving, mixing andchanges 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 andthe action of acid on bicarbonate of soda	➢ A material is any substance used to make something. ➢ There are natural and man-made materials. ➢ Materials can be sorted depending on their properties eg based on conductivity or response to magnets. ➢ Some materials will dissolve in liquid to form a solution (solute + solvent = solution). ➢ Not all substances dissolve. ➢ Substances which do dissolve are called soluble. Substances that don't are called insoluble. ➢ A solution can be separated to recover a substance. Eg evaporating. ➢ A mixture is a combination of 2 or more materials. It is possible to separate a mixture to get the original materials back again.eg through filtering, sieving and evaporating, dissolving. ➢ Melting and dissolving are different processes. ➢ Reversible means you can change a material and then change it back again. Irreversible means that when you change a material by eg burning or rusting you cannot change them back. ➢ Dissolving, mixing and changes of state are reversible changes. ➢ Some changes result in the formation of new materials and this kind of change is not usually reversable (eg burning and the action of acid on bicarb of soda). ➢ Chemists make new materials with new properties for a range of purposes. ➢ Materials are suitable for different purposes.	
	Physics	Earth and Space	➢ Describe the movement of the Earth, and other planets, relative to the Sun inthe solar system ➢ Describe the movement of the Moonrelative to the Earth ➢ Describe the Sun, Earth and Moon asapproximately spherical bodies ➢ Describe the idea of the Earth's rotation to explain day and night	➢ The sun is a star at the centre if our solar system. The sun has 8 planets; Mercury, Venus, Earth, mars, Jupiter, Saturn, Uranus, Neptune. ➢ Pluto was reclassified as a dwarf planet in 2006. ➢ There are 4 rules for classifying a planet 1. Must be roughly spherical 2. Must not be orbiting another planet (not a satellite) 3. Must orbit the sun 4. Must be the dominant body in its orbit. ➢ The sun and the moon are also approximately spherical bodies. ➢ Early models of the universe were Geocentric (the Earth was at the centre, and everything revolved around it).	

			and theapparent movement of the sun across thesky.	➢ Copernicus in 1543 put forward the Heliocentric model (the sun is the centre if the universe and all the planets orbit the sun). ➢ The Earth rotates on its axis which takes 24 hours. ➢ The Earth orbits the sun which takes 365.25 days. ➢ A moon is a celestial body that orbits a planet (Earth has 1 moon. Jupiter has 4 large moon). ➢ The Moon rotates in its axis every 27 days. ➢ The moon orbits the Earth every 27 to 28 days. ➢ The sun does not move. ➢ Earth's rotation causes day and night due to light only being on 1 half of the planet. This causes the apparent movement of the sun across the sky. ➢ The moon has phases depending on its point of orbit. The moon appears different from the perspective of Earth.	
		Forces: Friction and Gravity	➢ Explain that unsupported objects fall towards the Earth because of the forceof gravity acting between the Earth andthe falling object and the impact of gravity on our lives. ➢ Identify the effects of air resistance,water resistance and friction, which act between moving surfaces. ➢ Recognise that some mechanisms, including levers, pulleys and gears, allow asmaller force to have a greater effect.	➢ Unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object. ➢ Air resistance is a type of friction caused when an object pushes against the air particles. ➢ Streamlining is the design of something to reduce the flow of air resistance and water resistance over it which increases its speed and ease of movement. ➢ Air resistance causes unsupported objects with a larger surface area to fall at a slower rate and vice versa. ➢ Water resistance is the type of friction caused when an object pushes against water particles. ➢ Water particles are thicker than air particles so objects find it harder to fall through water. ➢ Streamlining enables an object to travel through water with less water resistance. ➢ Friction is a force which acts between two surfaces or objects that are moving, or trying to move, across each other. ➢ Friction always acts in the opposite direction to the moving object and always slows a moving object down. ➢ Air resistance and water resistance are types of friction. ➢ Some mechanisms, such as levers, pulleys and gears, allow a smaller force to have a greater effect.	
Year 4	Biology	Living things and their habitats: Classification and environmental change	➢ Recognise that living things can begrouped in a variety of ways ➢ Explore and use classification keys tohelp group, identify and name a varietyof living things in their local and widerenvironment ➢ Recognise that environments can change and that this can	➢ A habitat is a natural environment or home or a plant or animal. ➢ A microhabitat is a very small habitat ➢ Habitats might include; seashore, woodland, ocean and rainforest. ➢ Different habitats have different conditions; this determines what plants or animals will live there. ➢ Living things can be grouped in a variety of ways (this to be explored).	Earthworm Hunt Teeth Sculptures Digestion Recreation Creating Instruments Eco Club

			sometimespose dangers to living things	➢ Living things can be identified and classified using keys. ➢ Animal inc humans need the right types and amounts of nutrition to live a healthy life. They cannot make their own food so get nutrition from what they eat. ➢ There are 7 life processes; Movement, respiration, sensitivity, growth, reproduction, excretion, nutrition. ➢ Environments can change. These changes can be natural or caused by humans. Changes may have positive and negative effects. Natural changes may be caused by earthquakes, storms, floods, wildfires. Human made changes include deforestation, pollution, urbanisation. ➢ Animals can become endangered or even extinct when their environment changes.	Young Detectives Club
		Animals including humans: Food chains and the digestive system	➢ Describe the simple functions of the basic parts of the digestive system in humans ➢ Identify the different types of teethin humans and their simple functions ➢ Construct and interpret a variety of food chains, identifying producers, predators and prey	➢ Humans have a digestive system which includes; the oesophagus which is a muscular tube with moves the food from mouth to stomach, stomach which is an organ which breaks down food using stomach acid and churning, the small intestine which absorbs nutrients, the large intestine which absorbs water from remaining waste food and where stools are formed, the rectum stores stools before they leave the body through the anus. ➢ Humans have teeth with different functions including; canines to tear and rip, incisors to bite and cut, molars to grind and premolars to hold ad crush. Some people have wisdom teeth but they have no function now. ➢ Teeth needs to be cared for to prevent decay. Limiting sugar intake, brushing twice a day and regular visits to the dentist can help keep teeth healthy. ➢ A food chain is a series of living things that depend on each other for food. Food chains include; a producer/plant, a primary consumer (prey), a secondary consumer (predator/prey), tertiary consumer (predator). ➢ Animals eat different things/have different diets. ➢ Animals that only eat meat are called carnivores. ➢ Animals that only eat plants are called herbivores. ➢ Animals that eat both plants and meat are called omnivores.	
	Chemistry	States of matter: Solids, liquids and gases	➢ 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	➢ There are 3 states of matter; solid, liquid and gas. ➢ The particles of a solid are close together and cannot move. They can only vibrate. Solids keep their shape unless a force is applied to them. They can be hard, soft or even squishy. Solids take up the same amount of space no matter what has happened to them. ➢ The particles of a liquid are close together but can move around each other easily. Liquids take the shape of their container. They can change shape but do not change the amount of space they take up. They can flow or be poured.	

			evaporation and condensation in the water cycle and associate the rate of evaporation with temperature	➢ The particles of a gas are spread out and can move around quickly in all directions. Gases can spread out completely and fill the container or room they are in. They do not have a fixed shape but they do have a mass. ➢ When water or other liquids reach a certain temperature, they change state into a solid or a gas. The temperature that these changes happen at are called the boiling, melting or freezing point. ➢ Evaporation occurs when water turns to water vapour. ➢ The water cycle is when water from a source is evaporated by the sun's heat, turning it to water vapour. The water vapour rises, then cools down to form water droplets in clouds (condensation). When the droplets get too heavy they fall back to earth as rain, sleet, hail or snow (precipitation).	
	Physics	Sound	➢ Identify how sounds are made, associating some of them with something vibrating ➢ Recognise that vibrations from soundstravel 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 vibrationsthat produced it ➢ Recognise that sounds get fainter as thedistance from the sound source increases	➢ We hear sounds with our ears. The eardrum vibrates as a result of sound waves. ➢ The ear is made of the outer, middle and inner ear. The middle ear is where the eardrum is found. ➢ The eardrum is the part of the ear which is a thin, tough layer of tissue that is stretched out like a drum skin. It separates the outer and inner ear. ➢ The further away from the sound we are, the fainter it will sound. ➢ Sound is made when through vibration. Eg when a drum is hit, the drum vibrates and the air particles around the drum vibrate. This vibration is then passed from one air particle to another until the vibration reaches your ear. This is called a sound wave. ➢ Pitch is the measure of how high or ow sound is. Eg a whistle being blown created a high-pitched sound. A rumble of thunder creates a low pithed sound. ➢ The faster the vibrations, the higher the pitch. The slower the vibrations the lower the pitch.	
		Electricity: Circuits, conductors and insulators	➢ Identify common appliances that run onelectricity ➢ Construct a simple series electrical circuit, identifying and naming its basicparts, including cells, wires, bulbs, switches and buzzers ➢ Identify whether or not a lamp will light in a simple series circuit, based onwhether 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	➢ Electricity can be natural or man-made. Lightening and static electricity are examples of natural sources. ➢ Coil, oil and natural gases are fossil fuels which, when burnt, produce heat which can be used to generate electricity. ➢ Electricity can also be generated from wind power used to turn windmills and hydroelectric power from water used in dams. The Sun's rays can be converted into electricity by solar panels. ➢ Nuclear energy is created when atoms are split. This creates heat which can be used to generate electricity. Geothermal energy is heat from the Earth that is converted into electricity. ➢ Many everyday appliances rely on electricity for them to work. Some appliances need to be plugged into a socket	

			in a simpleseries circuit ➢ Recognise some common conductors andinsulators, and associate metals with being good conductors	(mains electricity) and others have a battery to make them work. ➢ Electricity can only flow around a complete circuit that has no gaps. There must be wires connected to both the positive and negative end of the power supply/battery. ➢ Switches can be used to open or close the circuit. When off, a switch 'breaks'the circuit to stop the flow of electrons. When the switch is on, the circuit is complete and the electrons are able to flow around the circuit. ➢ A conductor of electricity is a material that is made up of free electrons which can be made to move in one direction, creating an electric current. Metals are good conductors. ➢ Electrical insulators have no free electrons and so no electric current can be made. Wood, plastic and glass are good insulators.	
Year 3	Biology	Plants: Plant Organs and their functions	➢ Identify and describe the functions ofdifferent 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 inthe life cycle of flowering plants, including pollination, seed formation andseed dispersal	➢ Flowering plants have different parts with different functions including; roots to anchor the plant and absorb water and nutrients from soil, stem/trunk to hold the plant up and carry water and nutrients from soil to leaves, leaves make food for the plant using sunlight and carbon dioxide from the air, flowers make seeds to grow into new plants. Their petals attract pollinators to the plant. ➢ Water moves through the plant from the root, up the stem and into the leaves. Water is then evaporated from the leaves causing more water to be sucked up the stem. ➢ Plants have certain requirements for growth; air, light, water, nutrients from soil, and room to grow. The amounts will vary from plant to plant ➢ Parts of flowers play an important role in the lifecycle of flowering plants including pollination, seed formation and seed dispersal (chn will explore key plant vocabulary). ➢ Flowering plants use seeds to reproduce. ➢ Seeds have different characteristics; this depends on how they are dispersed. ➢ Seeds are dispersed to allow plants to grow in different places.	Palaeontologist Visitor Ammonite sculptures Shadow Puppet Show Eco Club Young Detectives Club
		Animals including humans: Nutrition and the	➢ Identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they getnutrition from what they eat ➢ Identify that humans and some	➢ Animals, unlike plants which can make their own food, need to eat in order to get the nutrients they need. ➢ Food contains a range of different nutrients: carbohydrates (including sugars), protein, vitamins, minerals, ➢ fats, sugars, water and fibre, that are needed by the body to stay healthy.	

		skeletomuscular system	otheranimals have skeletons and muscles for support, protection and movement	➢ A piece of food will often provide a range of nutrients. ➢ Humans and some other animals have skeletons and muscles. These support and protect the body and allow the body to move. ➢ Vertebrates are animals that have a backbone inside their body. ➢ Invertebrates are animals that do not have a backbone. ➢ Muscles are soft tissues in the body that contract and relax to cause movement.	
	Chemistry	Rocks and Soil	➢ Compare and group together different kinds of rocks on the basis of their appearance and simple physicalproperties ➢ Describe in simple terms how fossilsare formed when things that have lived are trapped within rock ➢ Recognise that soils are made fromrocks and organic matter	➢ Fossils are formed when living things are trapped within rock. The animal is covered in sediment leaving just the bone. Over time, erosion may cause the fossil to become visible at the surface. ➢ Palaeontology/palaeontologist is the study of fossils. ➢ There are 3 types of naturally occurring rock; igneous, metamorphic and sedimentary. ➢ Igneous rocks are formed from magma or lava and include obsidian, granite and basalt. ➢ Metamorphic rocks changed from igneous or sedimentary due to extreme heat or pressure and include marble, quartz and slate. ➢ Sedimentary rocks are formed by layers are sediment being pushed together and include chalk, sandstone or limestone. ➢ Soils are made from rocks and organic matter. ➢	
	Physics	Forces: Magnetism	➢ Compare how things move on different ➢ surfaces ➢ Notice that some forces need contactbetween 2 objects, but magnetic forces can act at a distance ➢ Observe how magnets attract or repeleach 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 orrepel each other,	➢ A magnet is an object that produces a magnetic force that pulls certain objects towards it. ➢ A magnetic force can act at a distance. This is called a magnetic field. ➢ Objects that are attracted to a magnet are magnetic this includes objects made from nickel, iron or cobalt. ➢ Magnets have 2 poles. Like poles repel/push away, opposite poles attract/are drawn together. ➢ Forces are pushes or pulls. ➢ Friction is a force that acts between 2 surfaces or objects that are moving or trying to move across each other. ➢ A surface is the top layer of something. ➢ Different surfaces create different amounts of friction. The amount of friction depends on the roughness of the surface and the force between them.	

			depending on which polesare facing		
		Light: Shadows, reflection and dangers	➢ Recognise that they need light in orderto see things and that dark is the absence of light ➢ Notice that light is reflected fromsurfaces ➢ Recognise that light from the sun can be dangerous and that there are ways toprotect their eyes ➢ Recognise that shadows are formedwhen the light from a light source is blocked by an opaque object ➢ find patterns in the way that the size of ➢ shadows change	➢ The eye is made of a pupil and a retina. The pupil, the black part of the eye, controls the amount of light entering the eye. The retina is a layer at the back of the eye. It takes the light the eye received and sends messages to the brain. If too much light enters the eye, the retina may be damaged. ➢ Sunglasses can be worn to protect the eye. ➢ We must never look at the sun as this can damage our eyes. ➢ We need light to see things. Dark is the absence of light. ➢ Light is reflected from surfaces. ➢ Shadows are formed when light from a light source is blocked by an opaque object. ➢ Shadows change depending on the position of the light source.	Eco Warriors
Year 2	Biology	Plants: Growth and Development	➢ Observe and describe how seeds and bulbs grow into mature plants ➢ Find out and describe how plants needwater, light and a suitable temperatureto grow and stay healthy.	➢ Flowering plants use seeds to reproduce. ➢ Seeds have different characteristics; this depends on how they are dispersed. ➢ Seeds are dispersed to allow plants to grow in different places. ➢ Seeds and bulbs need water to grow but most do not need light. Bulbs have a store of food inside them. ➢ Germination is the process of a plant growing from seed to plant. ➢ Plants need water, light and a suitable temperature to grow.	Twycross Zoo Caterpillars in Class Growing Plants Western Park Trip Nature Detectives
		Living things and their habitats: Adaptations and Ecosystems	➢ Explore and compare the differencesbetween 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 ofanimals and plants, and how they depend on each other ➢ Identify and name a variety of plantsand animals in their habitats, includingmicrohabitats ➢ Describe how animals obtain their foodfrom plants and other animals, using the idea of a simple food chain,	➢ A habitat is a natural environment or home or a plant or animal. ➢ A microhabitat is a very small habitat ➢ Habitats might include; seashore, woodland, ocean and rainforest. ➢ Different habitats have different conditions; this determines what plants or animals will live there. ➢ A food chain is a series of living things that depend on each other for food. ➢ Different habitats will have different food chains.	

			and identify and name different sources of food.		
		Animals including Humans: Life processes and healthy bodies	➢ Notice that animals, including humans, have offspring which growinto adults ➢ Find out about and describe the basic needs of animals, including humans, for survival (water, food andair) ➢ Describe the importance for humansof exercise, eating the right amountsof different types of food, and hygiene.	➢ Animals reproduce to create offspring which grow into adults, developing through the stages of their life cycle. ➢ The life cycle of an animal describes its birth, development from an infant to an adult, how it reproduces to create offspring and dies. ➢ Although each species has its own unique life cycle, there are broad similarities between the life cycles of different animal groups. ➢ All animals need certain basics to survive: air, water, food and shelter. ➢ A balanced diet provides us with the nutrition. ➢ We need food for energy, to help us grow. ➢ Exercise is important for both our physical and mental health.	
	Chemistry	Everyday Materials: Uses	➢ Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboardfor particular uses ➢ Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting andstretching	➢ Different materials are suitable for different purposes. ➢ Different materials have different properties. ➢ Materials including wood, brick, stone and metal are usually used for 'harder wearing' areas or objects eg walls. ➢ Reasons for why certain materials are used for particular objects and in certain circumstances. ➢ How to conduct a test to determine the best material for a particular purpose	
Year 1	Biology	Plants: Names and structure	➢ Identify and name a variety ofcommon wild and garden plants,including deciduous and evergreentrees ➢ Identify and describe the basic structure of a variety of commonflowering plants, including trees.	➢ Common plants and flowers have different names (chn will name plants within the local environment) ➢ Trees can be classified as deciduous or evergreen. ➢ Deciduous trees lose their leaves in autumn and into winter. The leaves grow back in spring. The leaves are larger than deciduous leave are flat. ➢ Evergreen trees keep their leaves all year round. The leave are thick and waxy. ➢ Plants have different parts including; roots, stem, leaves, flower/petals ➢ Plants grow from seeds to fully grown plants ➢ Plants grow in stages ➢	Western Park Trip Growing Plants Gardening Club
		Animals including Humans: Classification	➢ Identify and name a variety ofcommon animals including fish, amphibians, reptiles, birds and mammals ➢ Identify and name a variety of	➢ The human body is made of different parts which have different jobs. The ears, eyes, nose, hands and tongue have special jobs. They are the body parts associated with the senses. ➢ Humans have 5 senses; sight, hearing, smell, touch and taste.	

			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)	➢ The tongue helps us to taste. It has taste buds in different areas that taste different things. ➢ Humans can taste things that are; sweet, salty, sour, bitter. ➢ Our hands and fingers help us to touch. Different objects feel different. Animals live in different places. this is called a habitat. ➢ Animals have different names. ➢ Animals can be classified as fish, amphibians, reptiles, birds and mammals. Each group of animals have different characteristics. ➢ Animals eat different things/have different diets. ➢ Animals that only eat meat are called carnivores. ➢ Animals that only eat plants are called herbivores. ➢ Animals that eat both plants and meat are called omnivores. ➢	
		What can our bodies do? Animals including humans: The Human Body and Senses	➢ Identify, name, draw and label the basic parts of the human body and saywhich part of the body is associated with each sense	➢ The human body is made of different parts which have different jobs. The ears, eyes, nose, hands and tongue have special jobs. They are the body parts associated with the senses. ➢ Humans have 5 senses; sight, hearing, smell, touch and taste. ➢ The tongue helps us to taste. It has taste buds in different areas that taste different things. ➢ Humans can taste things that are; sweet, salty, sour, bitter. ➢ Our hands and fingers help us to touch. Different objects feel different.	
	Chemistry	Everyday Materials: Physical Properties	➢ 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 physicalproperties of a variety of everyday materials ➢ Compare and group together a variety of everyday materials on the basis of their simple physical properties.	➢ Animals reproduce to create offspring which grow into adults, developing through the stages of their life cycle. ➢ The life cycle of an animal describes its birth, development from an infant to an adult, how it reproduces to create offspring and dies. ➢ Although each species has its own unique life cycle, there are broad similarities between the life cycles of different animal groups. ➢ All animals need certain basics to survive: air, water, food and shelter. ➢ A balanced diet provides us with the nutrition. ➢ We need food for energy, to help us grow.	

				➢ Exercise is important for both our physical and mental health.	
	Physics	Seasonal Change	➢ Observe changes across the four seasons ➢ Observe and describe weather associatedwith the seasons and how day length varies.	➢ The weather is Spring includes rain, cloud, sun and is cold moving into warm. ➢ We tend to wear long sleeved tops, jackets and trousers/tights in the Spring. We may need to carry an umbrella. ➢ The weather in Summer is warm to hot with lots of sun. We wear short sleeves and lighter clothes. We may need sunglasses and sun cream. ➢ We spend more time doing outdoor type activities in the Summer. ➢ The weather in Autumn becomes colder. We wear jackets, longer sleeves and coats. ➢ The leaves on some trees change colour in Autumn. ➢ The weather in winter is cold and it may snow. We wear heavier clothes including hats and scarves. ➢ Trees lose their leaves in winter. ➢ In the summer the days are longer. In the winter the days are shorter.	
EYFS				➢ To start to understand cause and effect and that some actions have the same consequence when performed repeatedly. ➢ To observe and talk about change over time ➢ To spot patterns ➢ To find out about the world around us ➢ To know that plants can grow from seeds and what plants need togrow well ➢ To know how to take care of ourselves and what to do to keep our ➢ bodies healthy ➢ To know that different materials have different properties. ➢ To know that objects float or sink and to make predictions aboutwhich objects will float and which will sink ➢ To know about similarities and differences in relation to places,objects, materials and	Western Park Trip Stonehurst Farm Trip Minibeast Hunt Ice Block Challenge Construction Challenge Investigation Area Gardening Club

				living things. ➢ Be able to talk about the features of their own immediate ➢ environment and how environments might vary from one another. ➢ Make observations of animals and plants and explain why somethings occur, and talk about changes.	