

Science - Golden Threads

At St Mary's our science curriculum is based on our 'Golden Threads' of the disciplines of Biology, Chemistry and Physics and 'Working Scientifically'. We recognise that pupils should be taught to use practical scientific methods, processes and skills through the teaching of the programme of study content and have made these explicit for our children. These golden threads have been adopted across the school to further embed these skills of science.



POS	Autumn 1 Materials / Seasonal Changes	Autumn 2 Materials/ Seasonal Changes	Spring 1 Animals Including Humans (Human Body Parts and Senses) Seasonal Changes	Spring 2 Plants Seasonal Changes	Summer 1 Animals Seasonal Changes	Summer 2 Animals Seasonal Changes
Year 1						
Knowledge	<p><u>Materials</u> Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock.</p> <p>Distinguish between an object and the material from which it is made.</p> <p><u>Seasonal Changes</u> Observe changes across the four seasons.</p> <p>Observe and describe weather associated with the seasons and how day length varies.</p>	<p><u>Materials</u> Describe the simple physical properties of a variety of everyday materials</p> <p>Compare and group together a variety of everyday materials on the basis of their simple physical properties.</p> <p><u>Seasonal Changes</u> Observe changes across the four seasons.</p> <p>Observe and describe weather associated with the seasons and how day length varies.</p>	<p><u>Human Body Parts and Senses</u> Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.</p> <p><u>Seasonal Changes</u> Observe changes across the four seasons.</p> <p>Observe and describe weather associated with the seasons and how day length varies.</p>	<p><u>Plants</u> Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees.</p> <p>Identify and describe the basic structure of a variety of common flowering plants, including trees.</p> <p><u>Seasonal Changes</u> Observe changes across the four seasons.</p> <p>Observe and describe weather associated with the seasons and how day length varies.</p>	<p><u>Animals</u> Identify and name a variety of common animals that are carnivores, herbivores and omnivores</p> <p>Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets)</p> <p><u>Seasonal Changes</u> Observe changes across the four seasons.</p> <p>Observe and describe weather associated with the seasons and how day length varies.</p>	<p><u>Animals</u> Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals.</p> <p>Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets)</p> <p><u>Seasonal Changes</u> Observe changes across the four seasons.</p> <p>Observe and describe weather associated with the seasons and how day length varies.</p>
Skills (Working Scientifically)	<p>Makes relevant observations in familiar contexts.</p> <p>Use drawings and labels to present evidence.</p> <p>With support, recognises the links between cause and effect in simple, familiar situations.</p>	<p>Describes simple observations of an object or objects or of an event and with support makes a simple comparison.</p> <p>Use drawings and labels to present evidence.</p> <p>Begins to choose appropriate equipment to use to make observations and follows simple instructions for using it correctly and safely.</p>	<p>Use drawings and labels to present evidence.</p> <p>Decides which questions can be answered practically and which cannot.</p>	<p>Use drawings and labels to present evidence.</p> <p>With support take some non-standard measurements.</p> <p>Suggests next step, or a sequence of steps, in a plan.</p>	<p>Use drawings and labels to present evidence.</p> <p>With support, uses prepared simple tables and charts, including ICT forms.</p> <p>Recognises the difference between a statement and a question.</p>	<p>Use drawings and labels to present evidence.</p> <p>Makes relevant observations in familiar contexts.</p> <p>Recognises the difference between a statement and a question.</p>

<p>Year 1 POS Vocabulary</p>	<p><u>Materials</u> object, material, wood, plastic, glass, metal, water, rock, brick, paper, fabric, elastic, foil, card/cardboard, rubber, wool, clay, hard, soft, stretchy, stiff, bendy, floppy, waterproof, absorbent, breaks/tears, rough, smooth, shiny, dull, see-through</p> <p><u>Seasonal Changes</u> weather, sunny, rainy, raining, shower, windy, snowy, cloudy, hot, warm, cold, storm, thunder, lightning, hail, sleet, snow, icy, frost, puddles, rainbow, seasons, winter, summer, spring, autumn, Sun, sunrise, sunset, day length</p>	<p><u>Materials</u> object, material, wood, plastic, glass, metal, water, rock, brick, paper, fabric, elastic, foil, card/cardboard, rubber, wool, clay, hard, soft, stretchy, stiff, bendy, floppy, waterproof, absorbent, breaks/tears, rough, smooth, shiny, dull, see-through</p> <p><u>Seasonal Changes</u> weather, sunny, rainy, raining, shower, windy, snowy, cloudy, hot, warm, cold, storm, thunder, lightning, hail, sleet, snow, icy, frost, puddles, rainbow, seasons, winter, summer, spring, autumn, Sun, sunrise, sunset, day length</p>	<p><u>Animals Including Humans (Human Body Parts and Senses)</u> head, body, eyes, ears, mouth, teeth, leg, tail, wing, claw, fin, scales, feathers, fur, beak, paws, hooves, , senses, touch, see, smell, taste, hear, fingers, skin, eyes, nose, ears, tongue</p> <p><u>Seasonal Changes</u> weather, sunny, rainy, raining, shower, windy, snowy, cloudy, hot, warm, cold, storm, thunder, lightning, hail, sleet, snow, icy, frost, puddles, rainbow, seasons, winter, summer, spring, autumn, Sun, sunrise, sunset, day length</p>	<p><u>Plants</u> leaf, flower, blossom, petal, fruit, berry, root, seed, trunk, branch, stem, bark, stalk, bud</p> <p><u>Seasonal Changes</u> weather, sunny, rainy, raining, shower, windy, snowy, cloudy, hot, warm, cold, storm, thunder, lightning, hail, sleet, snow, icy, frost, puddles, rainbow, seasons, winter, summer, spring, autumn, Sun, sunrise, sunset, day length</p>	<p><u>Animals</u> head, body, eyes, ears, mouth, teeth, leg, tail, wing, claw, fin, scales, feathers, fur, beak, paws, hooves</p> <p><u>Seasonal Changes</u> weather, sunny, rainy, raining, shower, windy, snowy, cloudy, hot, warm, cold, storm, thunder, lightning, hail, sleet, snow, icy, frost, puddles, rainbow, seasons, winter, summer, spring, autumn, Sun, sunrise, sunset, day length</p>	<p><u>Animals</u> head, body, eyes, ears, mouth, teeth, leg, tail, wing, claw, fin, scales, feathers, fur, beak, paws, hooves</p> <p><u>Seasonal Changes</u> weather, sunny, rainy, raining, shower, windy, snowy, cloudy, hot, warm, cold, storm, thunder, lightning, hail, sleet, snow, icy, frost, puddles, rainbow, seasons, winter, summer, spring, autumn, Sun, sunrise, sunset, day length</p>
<p>Year 1 Working scientifically Vocabulary</p>	<p>observe, changes, patterns, grouping, sorting, compare, same, different, identify (name), measure, data, record results, drawing, picture, table, tally chart, present, pictogram, block chart, Venn diagram, ask questions, test, investigate, explore, equipment, resources, magnifying glass, hand lens, ruler, tape measure, metre stick, pipette, syringe, spoon, teaspoon, answer questions, interpret results, scientific enquiry, pattern seeking, comparative testing, observing over time, classifying, researching using secondary sources</p>					

POS	Autumn 1 Living Things and habitats	Autumn 2 Animals Inc Humans	Spring 1 Materials	Spring 2 Materials	Summer 1 Plants	Summer 2 Forest School Practical Work covering plants, materials and Living Things and habitats
Year 2						
Knowledge	<p>Explore and compare the differences between things that are living, dead, and things that have never been alive.</p> <p>Know all living things have characteristics that keep them alive.</p> <p>Name a range of habitats and microhabitats.</p> <p>Describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other</p> <p>Describe how animals obtain their food from plants and other animals.</p> <p>Understand the idea of a simple food chain, and identify and name different sources of food.</p>	<p>Animals, including humans, have offspring which grow into adult.</p> <p>The young of some animals don't look like their parents e.g. butterfly and frog</p> <p>The basic needs of animals, including humans, for survival are: water, food, air, and shelter.</p> <p>To grow into healthy adults, animals, including humans, need exercise, the right amounts of different types of food (dairy, meat, sugars, fruit and vegetables and grains) and good hygiene.</p>	<p>Everyday materials are chosen to be used because of their properties.</p> <p>Some materials are absorbent and can soak up liquids easily.</p>	<p>The shape of solid objects can be changed by squashing, bending, twisting and stretching.</p> <p>An object that is flexible bends easily without breaking; a rigid object is unable to bend or be forced to change shape</p>	<p>Plants need water, light, and a suitable temperature to grow and stay healthy.</p> <p>Seeds and bulbs grow into seedlings which grow into mature plants.</p>	<p>Know what habitats can be found locally.</p> <p>Know that most living things live in habitats to which they are suited.</p> <p>Identify and name a variety of plants and animals in their habitats, including microhabitats</p> <p>Seeds and bulbs grow into seedlings which grow into mature plants.</p> <p>Some materials are absorbent and can soak up liquids easily.</p>
Skills (Working Scientifically)	<p>Uses drawings and labels to present evidence.</p> <p>Identify and classify</p>	<p>Recognises the link between cause and effect in simple, familiar situations.</p>	<p>Decides independently simple questions that could be answered practically and some that cannot.</p> <p>Reviews their work and recognises some of the difficulties encountered. With support, suggests how these might have been avoided.</p>	<p>With support, suggest own questions that they might investigate.</p> <p>Begins to notice simple patterns in results.</p>	<p>Chooses appropriate equipment from a selection and follows instructions for using it, sometimes working independently of adult support.</p>	<p>Makes relevant observations. Takes non-standard measurements.</p> <p>Begins to use basic equipment for measuring length or mass, in standard units.</p>

<p>Year 2 POS Vocabulary</p>	<p><u>Living Things and habitats</u> living, dead, never been alive, suited, suitable, basic needs, food, food chain, shelter, move, feed, water, air, survive, survival, names of local habitats (e.g. pond, woodland etc.), names of micro-habitats (e.g. under logs, in bushes etc.), conditions, light, dark, shady, sunny, wet, damp, dry, hot, cold, names of living things in the habitats and micro-habitats studied</p>	<p><u>Animals Inc Humans</u> offspring, reproduction, growth, baby, toddler, child, teenager, adult, old person, names of animals and their babies (e.g. chick/chicken, kitten/cat, caterpillar/butterfly), survive, survival, water, food, air, exercise, heartbeat, breathing, hygiene, germs, disease, food types (e.g. meat, fish, vegetables, bread, rice, pasta, dairy)</p>	<p><u>Materials</u> opaque, transparent, translucent, reflective, non-reflective, flexible, rigid, shape, push/pushing, pull/pulling, twist/twisting, squash/squashing, bend/bending, stretch/stretching</p>	<p><u>Materials</u> opaque, transparent, translucent, reflective, non-reflective, flexible, rigid, shape, push/pushing, pull/pulling, twist/twisting, squash/squashing, bend/bending, stretch/stretching</p>	<p><u>Plants</u> light, shade, Sun, warm, cool, water, space, grow, healthy, bulb, germinate, shoot, seedling</p>	<p><u>Forest School</u> Practical Work covering plants, materials and Living Things and habitats See Vocabulary bank from plants, materials and Living Things and habitats</p>
<p>Year 2 Working scientifically Vocabulary</p>	<p>observe, changes, patterns, grouping, sorting, compare, same, different, identify (name), measure, data, record results, drawing, picture, table, tally chart, present, pictogram, block chart, Venn diagram, ask questions, test, investigate, explore, equipment, resources, magnifying glass, hand lens, ruler, tape measure, metre stick, pipette, syringe, spoon, teaspoon, answer questions, interpret results, scientific enquiry, pattern seeking, comparative testing, observing over time, classifying, researching using secondary sources</p>					

POS	Autumn 1 Light	Autumn 2 Animals including humans: Nutrition in food	Spring 1 Animals including humans: Bones and skeletons	Spring 2 Plants	Summer 1 Rocks and soils	Summer 2 Forces and magnets
Year 3						
Knowledge	<p>You need light in order to see things and dark is the absence of light.</p> <p>Light is reflected from surfaces. Some surfaces reflect light better than others.</p> <p>Light from the sun can be dangerous and damage your eyes. There are ways to protect your eyes.</p> <p>Shadows are formed when the light from a light source is blocked by a solid object.</p> <p>Materials can be transparent, translucent or opaque depending on how much light they let through.</p> <p>The size of a shadow can be changed by changing the position of the light source or object.</p>	<p>Animals including humans, cannot make their own food, they get their nutrition from what they eat.</p> <p>There are food groups that provide the body with the right types and amounts of nutrients: Fats, dairy, protein, carbohydrates, fibre, minerals and vitamins and water.</p>	<p>Humans and some other animals have skeletons and muscles for support, protection and movement</p> <p>Muscles and skeletons have special functions.</p> <p>Some animals have a skeleton outside their body called an exoskeleton.</p> <p>Some animals do not have a hard skeleton</p>	<p>Each part of the flowering plant has a different function.</p> <p>Water is transported within plants.</p> <p>Plants need air, light, water, nutrients from soil and room to grow to grow and stay healthy. These needs will vary from plant to plant.</p> <p>Flowers have a role in the Flowering plants have a life cycle that involves germination, pollination, seed formation and seed dispersal.</p> <p>Role of the flower in the above processes.</p> <p>Pollination is when insects, such as bees, transfer the pollen.</p> <p>Seeds can be dispersed in different ways, wind, animals or water.</p>	<p>There are 3 types of rocks: Sedimentary, metamorphic and igneous.</p> <p>You can compare and group kinds of rocks based on their appearance and simple physical properties</p> <p>Soils are made from ground up rocks, and plant and animals remains.</p> <p>Fossils were formed millions of years ago when things that lived there were trapped within the rock</p>	<p>A force is a push or a pull. Some forces need contact between 2 objects, but magnetic forces can act at a distance</p> <p>Objects move differently on different surfaces. Friction changes how the same object moves.</p> <p>Magnets can attract or repel each other and attract some materials and not others</p> <p>Magnets have two poles (north and south). Opposite poles attract (pull towards) whereas the same poles repel (push away).</p> <p>A magnet attracts magnetic materials.</p> <p>You can compare and group materials based on whether they are attracted to a magnet.</p>
Skills (Working Scientifically)	<p>Selects from a wider range of equipment what to use in an investigation.</p> <p>Uses basic equipment correctly, safely and with increasing accuracy.</p> <p>Recognises when to answer a question by using a fair test method and when other methods might be needed.</p>	<p>Provides explanations for simple patterns in results, referring to everyday experiences when explaining reasoning.</p> <p>Interprets graphs with support.</p>	<p>Reports on findings from enquiries, including oral and written, displays or presentations of results and conclusions.</p>	<p>Gathers, records, classifies and presents data in a variety of ways to help in answering questions.</p> <p>In a fair test identifies what to keep the same and sometimes ant to change and measure.</p>	<p>Makes a general statement about simple patterns they notice in a set of results.</p> <p>Asks questions independently and generate own ideas to explore through Scientific enquiry.</p>	<p>Makes relevant observations throughout an investigation.</p> <p>Uses standard measuring equipment for quantities, such as volume and temperature.</p> <p>Sometimes creates own tables and bar charts</p> <p>Recognises when to answer a question by using a fair test method and when other methods might be needed.</p>

Year 3 POS Vocabulary	<p style="text-align: center;"><u>Light</u></p> <p>light, light source, dark, absence of light, surface, shadow, reflect, mirror, Sun, sunlight, dangerous</p>	<p><u>Animals including humans:</u> <u>Nutrition in food</u></p> <p>nutrition, nutrients, carbohydrates, sugars, protein, vitamins, minerals, fibre, fat, water,</p>	<p><u>Animals including humans:</u> <u>Bones and skeletons</u></p> <p>skeleton, bones, muscles, joints, support, protect, move, skull, ribs, spine</p>	<p style="text-align: center;"><u>Plants</u></p> <p>photosynthesis, pollen, insect/wind pollination, male, female, seed formation, seed dispersal (wind dispersal, animal dispersal, water dispersal), air, nutrients, minerals, soil, absorb, transport</p>	<p style="text-align: center;"><u>Rocks and soils</u></p> <p>rock, stone, pebble, boulder, grain, crystals, layers, hard, soft, texture, absorbs water, fossil, bone, flesh, minerals, marble, chalk, granite, sandstone, slate, types of soil (e.g. peaty, sandy, chalky, clay)</p>	<p style="text-align: center;"><u>Forces and magnets</u></p> <p>force, push, pull, twist, contact force, non-contact force, magnetic force, magnet, strength, bar magnet, ring magnet, button magnet, horseshoe magnet, attract, repel, magnetic material, metal, iron, steel, poles, north pole, south pole</p>
Year 3 Working scientifically Vocabulary	practical work, fair testing, relationships, accurate, thermometer, data logger, stopwatch, timer, estimate, data, diagram, identification key, chart, bar chart, prediction, similarity, difference, evidence, information, findings, criteria, values, properties, characteristics, conclusion, explanation, reason, evaluate, improve					

POS	<u>Autumn 1</u> Digestive system and teeth	<u>Autumn 2</u> Living Things and Habitats + (Food chains from animals)	<u>Spring 1</u> Sound	<u>Spring 2</u> States of matter	<u>Summer 1</u> Electricity	<u>Summer 2</u> Electricity
Year 4						
Knowledge	<p>There are three main types of teeth: incisors are used to bite; canines are used to tear; molars are to chew.</p> <p>The digestive system breaks down food and includes the mouth, stomach, small and large intestine.</p> <p>Food chains can be made up of producers, predators and prey.</p>	<p>Food chains can be made up of producers, predators and prey.</p> <p>Living things can be grouped in a variety of ways A classification key is used to group, identify and name living things by answering a series of yes/ no questions. Environmental changes such as flooding, deforestation and plastics in oceans can pose dangers to living things.</p>	<p>Sounds are made by vibrations that travel through air or water to the ear. The pitch of a sound is how low or high the sound is. The volume of sound depends on the strength of the vibrations producing it. Sounds get fainter the further away from them you are. To make a sound quieter you can insulate it using a material which blocks sound.</p>	<p>Materials can be grouped according to whether they are a solid, liquid or gas depending on the space between the molecules. Melting is a change of state from solid to liquid. Freezing is a change of state from liquid to solid. The freezing point of water is 0°. Boiling is a change of state from liquid to gas. Water boils when it is heated to 100°. Evaporation is the change of state from liquid to gas caused by heat. Condensation is the change from a gas to a liquid, caused by cooling. Evaporation and condensation happen as part of the water cycle and are linked to temperature.</p>	<p>Many appliances use electricity. Electricity is a form of energy used for lighting, heating, making sound and making machines work. Electricity can be mains or battery powered. A simple electrical circuit needs cells and wires and either a bulb or buzzer to be complete. A circuit is broken and electricity will not flow if it is not part of a complete loop. A switch breaks the circuit so that it is not complete and electricity cannot flow. Conductors allow electricity to flow through them whereas insulators do not. Name good conductors, such as metals and good insulators, such as wood.</p>	<p>Conductors allow electricity to flow through them whereas insulators do not.</p> <p>Name good conductors, such as metals and good insulators, such as wood.</p>
Skills (Working Scientifically)	<p>With support, improves focus of question to clarify its scientific purpose.</p> <p>Uses straightforward scientific evidence to answer questions or to support their findings.</p> <p>Relates explanations of patterns in results to scientific knowledge and understanding when explaining reasoning.</p>	<p>Makes a comparative statement, sometimes referring to the factors under investigation.</p> <p>Identifies differences, similarities, or changes related to simple scientific ideas and processes.</p> <p>Uses simple scientific language effectively to communicate outcomes.</p>	<p>Asks questions and offers ideas for a range of scientific enquiry.</p> <p>Sets up a fair test controlling variables, what to keep the same, what to change, measure or observe</p>	<p>Chooses to make a series of observations that will add to the evidence they collect while investigating.</p> <p>Sets up a fair test controlling variables, what to keep the same, what to change, measure or observe</p> <p>Uses simple scientific language effectively to communicate outcomes.</p>	<p>Knows when to answer a question by using a fair test method and when better evidence could be generated in other ways, e.g. through a survey, diary/log or research</p> <p>Records findings using drawings, labelled diagrams, bar charts, tables and graphs, using ICT where appropriate.</p>	<p>Asks questions and offers ideas for a range of scientific enquiry.</p> <p>With support, takes accurate readings on measuring equipment, recognising when to repeat them</p>

<p>Year 4 POS Vocabulary</p>	<p><u>Digestive system and teeth</u></p> <p>digestive system, digestion, mouth, teeth, saliva, oesophagus, stomach, small intestine, large intestine, rectum, anus, incisor, canine, molar, premolar, herbivore, carnivore, omnivore, producer, predator, prey</p>	<p><u>Living Things and Habitats + (Food chains from animals)</u></p> <p>environment, habitat, human impact, positive, negative, migrate, hibernate, herbivore, carnivore, omnivore, producer, predator, prey</p>	<p><u>Sound</u></p> <p>sound, source, vibrate, vibration, travel, pitch (high, low), volume, faint, quiet, loud, insulation</p>	<p><u>States of matter</u></p> <p>solid, liquid, gas, heating, cooling, state change, melting, freezing, melting point, boiling, boiling point, evaporation, condensation, temperature, water cycle</p>	<p><u>Electricity</u></p> <p>electricity, electrical appliance/device, mains, plug, electrical circuit, complete circuit, component, cell, battery, positive, negative, connect/connections, loose connection, short circuit, crocodile clip, bulb, switch, buzzer, motor, conductor, insulator, metal, non-metal, symbol</p>	<p><u>Electricity</u></p> <p>electricity, electrical appliance/device, mains, plug, electrical circuit, complete circuit, component, cell, battery, positive, negative, connect/connections, loose connection, short circuit, crocodile clip, bulb, switch, buzzer, motor, conductor, insulator, metal, non-metal, symbol</p>
<p>Year 4 Working scientifically Vocabulary</p>	<p>practical work, fair testing, relationships, accurate, thermometer, data logger, stopwatch, timer, estimate, data, diagram, identification key, chart, bar chart, prediction, similarity, difference, evidence, information, findings, criteria, values, properties, characteristics, conclusion, explanation, reason, evaluate, improve</p>					

POS	<u>Autumn 1</u> Living things and habitats	<u>Autumn 2</u> Animals inc humans	<u>Spring 1</u> Earth and Space	<u>Spring 2</u> Forces and magnets	<u>Summer 1</u> Materials	<u>Summer 2</u> Scientific enquiry and experiments
Year 5						
Knowledge	<p>Sexual reproduction in plants occurs through pollination usually involving wind or insects.</p> <p>Sexual reproduction in plants occurs through pollination usually involving wind or insects.</p> <p>Reproduction is a life process for animals and plants.</p> <p>A life cycle shows how things are born, how they and how they reproduce.</p> <p>Mammals, amphibians, insects and birds all have different lifecycles.</p> <p>Most animals reproduce sexually. Plants reproduce sexually and asexually.</p> <p>Asexual reproduction involves only one parent</p>	<p>Describe the changes as humans develop into old age.</p> <p>The gestation period is the length of time a mammal carries her offspring inside her body before giving birth.</p> <p>Puberty is the time when your body begins to develop and change as you become an adult.</p> <p>Reproduction is a life process for animals and plants.</p>	<p>The sun is a star at the centre of our solar system.</p> <p>There are 8 named planets in our solar system that all orbit around the sun.</p> <p>The Earth orbits the sun. It takes 365 1/4 days to complete its orbit.</p> <p>The moon orbits the Earth. It takes about 28 days to complete its orbit.</p> <p>The Earth rotates (spins) on its axis once every 24 hours and this gives us day and night.</p> <p>The sun, Earth and moon are approximately spherical bodies.</p>	<p>Forces make objects start moving, stop moving, speed up, slow down or change direction.</p> <p>Unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object</p> <p>Air resistance, water resistance and friction affect a moving object.</p> <p>Some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect.</p>	<p>Materials can be compared and grouped based on their properties (including hardness, solubility, transparency, conductivity and response to magnets).</p> <p>Materials have properties that make them suitable for certain tasks.</p> <p>Some materials will dissolve in liquid to form a solution. A substance can be recovered from a solution.</p> <p>Mixtures can be separated through filtering, sieving and evaporating.</p> <p>Dissolving, mixing, melting and freezing are reversible changes.</p> <p>Some changes result in the formation of new materials. These are normally irreversible changes.</p> <p>Burning and the action of acid on bicarbonate of soda are irreversible changes.</p>	<p>This unit of work focus specifically on working scientifically covering elements of previous learning in Year 5</p> <p>Independently asks questions and offers ideas for scientific enquiry, which have a clear scientific purpose.</p> <p>Using test results to make predictions to set up further comparative and fair test</p> <p>Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations</p>
Skills (Working Scientifically)	<p>Identifying scientific evidence that has been used to support or refute ideas or arguments.</p> <p>Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations.</p>	<p>Identifying scientific evidence that has been used to support or refute ideas or arguments.</p> <p>Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations.</p>	<p>Identifying scientific evidence that has been used to support or refute ideas or arguments.</p> <p>Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations.</p>	<p>Identifying scientific evidence that has been used to support or refute ideas or arguments.</p> <p>Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations.</p>	<p>Identifying scientific evidence that has been used to support or refute ideas or arguments.</p> <p>Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations.</p>	<p>Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.</p> <p>Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, and bar and line graphs here necessary.</p>

<p>Year 5 POS Vocabulary</p>	<p><u>Living things and habitats</u></p> <p>life cycle, reproduce, sexual, sperm, fertilises, egg, live young, metamorphosis, asexual, plantlets, runners, cuttings</p>	<p><u>Animals inc humans</u></p> <p>puberty ,life cycle, foetus, baby, child, adolescent, adult, reproduce, sexual, sperm, fertilises, egg, live young, adulthood, life expectancy, gestation</p>	<p><u>Earth and Space</u></p> <p>Sun, Moon, Earth, planets (Mercury, Jupiter, Saturn, Venus, Mars, Uranus, Neptune), spherical, Solar System, rotate, star, orbit</p>	<p><u>Forces and magnets</u></p> <p>force, gravity, Earth, air resistance, water resistance, friction, mechanisms, simple machines, levers, pulleys, gears</p>	<p><u>Materials</u></p> <p>thermal insulator/conductor, change of state, mixture, dissolve, solution, soluble, insoluble, filter, sieve, reversible/non-reversible change, burning, rusting, new material</p>	<p><u>Scientific enquiry and experiments</u></p> <p>Practical Work covering plants, materials and Living Things and habitats</p> <p>See Vocabulary bank from magnets, materials and Living Things and habitats</p>
<p>Year 5 Working scientifically Vocabulary</p>	<p>variables, independent variable, dependent variable, control variable, evidence, justify, argument (science), causal relationship, accuracy, precision, scatter graphs, bar graphs, line graphs, force meter</p>					

POS	Autumn 1 Animals including humans	Autumn 2 Electricity	Spring 1 Light	Spring 2 Evolution	Summer 1 Living things	Summer 2 Scientific enquiry and experiments
Year 6						
Knowledge	<p>The circulatory system circulates blood through the body.</p> <p>The heart pumps blood around the body.</p> <p>Blood vessels are the tubes through which our blood flows. They are called arteries, veins and capillaries.</p> <p>Blood transports oxygen, nutrients and water to all the parts of the body.</p> <p>Each time the heart beats it can be felt as a pulse in the wrist or neck</p> <p>Diet, exercise, drugs and other lifestyle choices affect how well our hearts work.</p>	<p>By changing the electrical components in a circuit you can affect the brightness of a lamp or the volume of a buzzer.</p> <p>Recognised symbols can be used when representing a simple circuit in a diagram</p> <p>Volts are a measure of flow of electricity</p>	<p>Light travels in straight lines. We see things because light travels from light sources to our eyes.</p> <p>For objects that are not a light source, light must be reflected from the object into our eye for us to see the object.</p> <p>Shadows have the same shape as the objects that cast them because light travels in straight lines.</p>	<p>Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago.</p> <p>Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents.</p> <p>Identify how animals and plants are adapted to suit their environment in different ways, and that adaptation may lead to evolution.</p> <p>Plants and animals have characteristics that have adapted to make them suited to their environment.</p> <p>The adaptations have led to evolution.</p> <p>Natural selection is the survival of animals and plants that are best suited to its environment.</p> <p>Living things have changed over time. Fossils provide evidence about living things that inhabited the earth millions of years ago.</p> <p>Living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents</p>	<p>Plants can be classified into flowering and non-flowering plants.</p> <p>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.</p> <p>Give reasons for classifying plants and animals based on specific characteristics.</p>	<p>This unit of work focus specifically on working scientifically covering elements of previous learning in Year 6.</p> <p>Independently asks questions and offers ideas for scientific enquiry, which have a clear scientific purpose. Using test results to make predictions to set up further Comparative and fair test</p> <p>Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations</p> <p>Planning different types of scientific enquiries to answer questions, including recognising and controlling variables</p> <p>Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, and bar and line graphs here necessary.</p>
Skills (Working Scientifically)	<p>Identifying scientific evidence that has been used to support or refute ideas or arguments.</p> <p>Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations.</p>	<p>Identifying scientific evidence that has been used to support or refute ideas or arguments.</p> <p>Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations.</p> <p>Using test results to make predictions to set up further comparative and fair test</p>	<p>Identifying scientific evidence that has been used to support or refute ideas or arguments.</p> <p>Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations.</p> <p>Using test results to make predictions to set up further comparative and fair test</p>	<p>Identifying scientific evidence that has been used to support or refute ideas or arguments.</p> <p>Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations.</p>	<p>Identifying scientific evidence that has been used to support or refute ideas or arguments.</p> <p>Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations.</p>	<p>Identifying scientific evidence that has been used to support or refute ideas or arguments.</p> <p>Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations.</p>

Year 6 POS Vocabulary	<u>Animals including humans</u> heart, pulse, rate, pumps, blood, blood vessels, transported, lungs, oxygen, carbon dioxide, cycle, circulatory system, diet, drugs, lifestyle	<u>Electricity</u> circuit diagram, circuit symbol, voltage	<u>Light</u> straight lines, light rays, opaque, transparent,translucent,reflect, refract, prism, spectrum,absorption, dispersion	<u>Evolution</u> offspring, sexual reproduction, vary, characteristics, adapted, inherited, species, evolve, evolution	<u>Living things</u> <u>vertebrates</u> , fish, amphibians, reptiles, birds, mammals, warm-blooded, cold-blooded, invertebrates, insects, spiders, snails, worms,flowering, non-flowering, mosses, ferns, conifers	<u>Scientific enquiry and experiments</u> Practical Work covering electricity, light, animals including humans and Living Things and habitats See Vocabulary bank from magnets, materials and Living Things and habitats
Year 6 Working scientifically Vocabulary	variables, independent variable, dependent variable, control variable, evidence, justify, argument (science), causal relationship, accuracy, precision, scatter graphs, bar graphs, line graphs, force meter					