



**Science Progression of Knowledge- St Mark's CofE Primary School 2023-24**



**NC Topics**

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Autumn	Animals including humans	Uses of everyday materials	Rocks & Fossils	Living things and their habitats	Earth and Space	Living Things
	Seasonal changes		Forces and magnets	Animals including humans	Properties and changes in materials	Light
Spring	Everyday materials	Animals including humans & Lifecycles	Animals including humans Teeth, bones & muscles	States of matter	Properties and changes of materials	Animals, including humans
	Seasonal changes			Sound	Forces	
Summer	Plants	Plants & living things & their habitats	Plants	Electricity	Animals including humans Living things and their habitats	Electricity
	Seasonal changes		Light	Living things and their habitats (Environment)		Evolution & inheritance
Biology		Chemistry		Physics		Earth Sciences

# Substantive Knowledge: Concepts, models, laws and theories

## Biology

- Living things and their environment (Animals, humans, plants, habitats)
- Reproduction, inheritance and evolution (Evolution, inheritance, life processes, life cycles)

## Chemistry

- States of matter (Solids, liquids, gases)
- Materials (properties and changes including reversible/irreversible changes,)

## Physics

- Energy (Light, sound, electricity)
- Forces (Friction, air resistance, gravity, magnets)

## Earth Science

- Earth and space (Seasons, day and night, solar system and beyond)
  - Rocks and fossils

## Science in EYFS

All areas of learning and development at the Foundation Stage are inter-connected. Through engaging in science activities, children not only learn about the world around them but develop disciplinary skills in all areas.

## Characteristics of Effective Learning

The ways in which a child engages with other people and their environment - playing and exploring, active learning, and creating and thinking critically – underpin learning and development across all areas and support the child to remain an effective and motivated learner.

# ‘Understanding the World’

This is a specific area of the Early Years Curriculum that includes essential skills and knowledge about the world and provides firm foundations on which children can build their scientific understanding. Early Years children will be actively involved in play and exploration and be encouraged to be creative. They will be supported to think critically and ask questions, which will help them to make sense of their world through well-planned play opportunities.

## ELGs:

- Explore the natural world around them, making observations and drawing pictures of animals and plants.
- Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class.
- Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter
- Manage their own basic hygiene and personal needs, including dressing, going to the toilet and understanding the importance of healthy food choices.
- Listen attentively and respond to what they hear with relevant questions, comments and actions when being read to and during whole class discussions and small group interactions.
- Make comments about what they have heard and ask questions to clarify their understanding.

## End points:

**By the end of EYFS**, children can identify similarities and differences between themselves and others, places, objects, materials and living things. They can make simple observations of animals and plants. They recognise that technology is used for particular purposes in different environments and can select technology appropriately. They can explore how to make things move.

**By the end of KS1**, the basic fundamentals of the biology strand have been established. Pupils explore animals, humans and changes within environments and begin to develop simple scientific vocabulary linked to this. Children use different types of scientific enquiry to answer a range of questions. Children are encouraged to ask questions, discuss their findings and present the ideas in a variety of ways.

**By the end of KS2**, pupils have a deep understanding of a range of scientific ideas. Children are able to link scientific ideas to the world around them and, through research, understand how scientific ideas are developed over time. Children use secondary sources of information and practical enquiry to draw conclusions and find things out.

1. Pupils have an understanding of the key domains of knowledge and can use key concepts to make links between the domains
2. Pupils can ask questions and make observations about the world around them using scientific knowledge

3. Pupils can analyse data and articulate evidenced conclusions
4. Pupils are able to follow and design scientific enquiries
5. Pupils have an understanding of some of the major issues facing our planet and an appreciation of the importance of science to wider society

**Key - Yellow is new learning and green is over learning**

Biology	Year R	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<p><b>Living things and their environment</b> <i>(Animals, humans, plants, habitats)</i></p>	<p>Explore the natural world around them, making observations and drawing pictures of animals and plants.</p> <p>Herbivore Carnivore Omnivore Human Animal Bird Fish Minibeast Insect Lifecycle Frog Tadpole</p>	<p>Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals</p> <p>Amphibian – a cold blooded vertebrate animal. Can live on land and in water.</p> <p>Reptiles – can live both on land and in water.</p> <p>Are a group of cold-blooded animals which have skins covered with small hard plates called scales and lay eggs</p> <p>Mammal – any animal of which the female feeds her young on milk from her own body. Most mammals give birth to live young, not eggs</p> <p>Fish - an animal that can breathe underwater using gills and has a tail and fins.</p> <p>Bird - an animal with feathers, beaks and wings. Females lay eggs. Most birds can fly.</p> <p>Insect - creatures that have bodies with three segments that are protected by a hard shell. They have three pairs of legs and a pair of antennae (name one mammal, reptile, amphibian, fish, insect and bird)</p> <p>Identify and name a variety</p>	<p>Explore and compare the differences between things that are living, dead, and things that have never been alive</p> <p>Living - move, breath, sense, grow, reproduce, get energy from food and get rid of waste</p> <p>Dead - were once living.</p> <p>Do not have life processes</p> <p>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</p> <p>Habitat - the specific area or place in which particular animals or plants may live</p> <p>Microhabitat - has its own temperature and light and its own creatures.</p> <p>Depend - need each other for different things</p> <p>Survive - to stay alive</p> <p>Identify and name a variety of plants and animals in their habitats, including microhabitats</p> <p>Habitat Microhabitat</p> <p>Describe how animals obtain their food from plants and other animals, using the idea</p>	<p>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</p> <p>Nutrition – the process of providing or obtaining the food necessary for health and growth</p> <p>Vitamins and minerals – needed by our bodies in order to grow, reproduce , see, bones, muscles, skin, organs and be healthy (fight infection). People get most of the vitamins they need from food.</p> <p>Fat – Nutrients in food that the body uses to build nerve tissue and hormones.</p> <p>Protein – builds, maintains and replaces tissue in the body.</p> <p>Found in meat, legumes and eggs.</p> <p>Carbohydrate – a substance (starch or sugar) that is rich in energy.</p> <p>Identify that humans and some other animals have skeletons and muscles for support, protection and movement.</p> <p>Skeleton - An internal or external framework of bone</p>	<p>Recognise that living things can be grouped in a variety of ways</p> <p>Vertebrates invertebrates Amphibian Fish Mamma Bird Reptile Insect Classification</p> <p>Deciduous - trees and shrubs that seasonally shed leaves, usually in the autumn; to the shedding of petals, after flowering; and to the shedding of ripe fruit</p> <p>Evergreen - having foliage that remains green and functional through more than one growing season</p> <p>Flowering plants - a plant that produces flowers</p> <p>Non-flowering plants - a plant that does not produce flowers</p> <p>Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment</p> <p>Characteristics - The distinguishing features or qualities that are specific to a species.</p> <p>Children are able to use and create a</p>	<p>Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird</p> <p>Lifecycle Insect Amphibian Reptiles Mammal Bird</p> <p>Describe the life process of reproduction in some plants and animals.</p> <p>Identify the female (Carpel: Stigma, Style, Ovule and Ovary) and male (Stamen, filament and anther) parts of a plant.</p> <p>Pollination Fertilisation</p> <p>Sexual reproduction is when two parents are needed to make offspring which are similar, but not identical, to either parent.</p> <p>Asexual reproduction is when one parent is needed to create an offspring, which is an exact copy of the parent</p> <p>Germination</p> <p>Describe the changes as humans develop to old age. Gestation - period is the time in which a foetus develops, beginning</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>Classification Characteristic adaptation - special features that plants and animals develop to suit the place where they live</p> <p>Organisms -any living thing.</p> <p>microorganisms - living things that are too small to be seen with the naked eye</p> <p>Amphibian Bird Reptile Mammal Fish Vertebrates Invertebrates Exoskeleton Endoskeleton Deciduous Evergreen Flowering plants Non flowering plants</p> <p>Give reasons for classifying plants and animals based on specific characteristics.</p> <p>Children will be able to give a reason why they have classified</p>

		<p>of common animals that are carnivores, herbivores and omnivores Herbivore - An animal that only eats plants. Omnivore - An animal that eats both plants and meat. Carnivore - An animal that eats meat. (name one carnivore, one herbivore and one omnivore)</p> <p>Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets) Classification - This is where plants or animals are placed into groups according to their similarities. name and describe a feature of each classification of animal and compare it to another animal.</p> <p>Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense Senses - 5 senses which allow us to observe and understand the world around us - sight, touch, hear, taste and smell.. Identify and name head, neck, face, hair, nose, ear, mouth, tongue, teeth, eyes, hands, arms, elbows, legs, knees, and feet.</p>	<p>of a simple food chain, and identify and name different sources of food. Food chain - how plants and animals get their energy. A food chain always starts with a producer. Producers - organisms that make their own food. Examples of producers include plants, Predators - an animal that eats other animals Prey - eats the consumer, then the predator eats the prey Consumer - A living thing that eats other plants and animals Food source - where a living thing's food comes from</p> <p>Observe and describe how seeds and bulbs grow into mature plants Seed Bulb stem fruits Germination - the growth of a seed into a young plant or seedling. Roots Shoots petal trunk branch</p> <p>Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. Children will be able to state that for a plant to be healthy, it needs:</p>	<p>supporting/containing the body of an animal Exoskeleton - A skeleton that is visible on the outside of the body Endoskeleton - made up of bones and cartilage and are found inside the body Vertebrates - A group of animals that have a backbone, Invertebrates - A group of animals that do not have a backbone Muscles - A band/bundle of fibrous tissue that can contract, producing movement Organ - a structure composed of a group of different tissues that work together to perform a specific function</p> <p>Identify the different types of teeth in humans and their simple functions (moved from Year 4) Incisors - teeth at the front of your mouth which you use for biting into food Canines - pointy ones next to your front teeth. You have two on top and two on the bottom. They're sharp and help tear food. Premolars - are used for holding and crushing food. Molars - large, square teeth with a rough edge, used for grinding and chewing Calcium - a nutrient that can benefit a person's teeth and bones</p>	<p>classification key to identify and name one deciduous and evergreen tree and one flowering and non-flowering plant.</p> <p>Recognise that environments can change and that this can sometimes pose dangers to living things. Habitat Microhabitat Environment - contains many habitats and these include areas where there are both living and nonliving things Endangered species - a plant or animal where there are not many of their species left and scientists are concerned that the species may become extinct. Extinct - when a species has no more members alive on the planet, it is extinct Adaptation - special features that plants and animals develop to suit the place where they live</p> <p>Describe the simple functions of the basic parts of the digestive system in humans Digestion - the breaking down food inside the body so nutrients can enter the blood oesophagus - is the organ that food travels through to reach the stomach for</p>	<p>with fertilisation and ending at birth. Puberty - changes in the male and female body. When a person goes from being a child and changes into an adult. Testosterone - is the hormone that causes most of the changes in a boy's body during puberty. Oestrogen is the hormone that causes most of the changes in a girl's body during puberty. Foetus is an unborn animal or human being in its later stages of development. Adolescence is the process of changing from a child into an adult. Baby Toddler Child Teenager Adult</p>	<p>plants/animals in the way they have using scientific vocabulary from above</p> <p>Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood Circulatory system - a network within the body that consists of blood, blood vessels, and the heart. Heart - the organ that pumps blood through the body. Blood - brings oxygen and nutrients to all the parts of the body so they can keep working. Blood vessels - a system of tubes that carry the blood throughout the body. The main vessels are arteries, veins, and capillaries. Nutrients</p> <p>Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function Diet Exercise Drug - a medicine or other substance which has a physiological effect when ingested or introduced to the body. Healthy lifestyle - a state of complete physical, mental and social well-being Carbohydrates</p>
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			<p>water, light and be at a suitable temperature.</p> <p>Notice that animals, including humans, have offspring which grow into adults</p> <p>Offspring - the child or young of a particular human, animal or plant</p> <p>Reproduction - the process by which a living organism creates a likeness of itself</p> <p>Growth - an increase in size.</p> <p>Life Cycle - the stages a living thing goes through during its life (baby, toddler, child, teenager, adult, death)</p> <p>Find out about and describe the basic needs of animals, including humans, for survival (water, food and air)</p> <p>Children will be able to state that animals, including humans, need water, air, shelter and food to survive.</p> <p>Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.</p> <p>Hygiene - the way we care for our bodies</p> <p>Exercise - a way of keeping the body healthy through being active</p> <p>Diet - the food and drink regularly provided or consumed.</p> <p>Healthy foods - help keep my heart, muscles and bones strong,</p>		<p>further digestion</p> <p>Stomach - a large, muscular, and hollow organ allowing for a capacity to hold food</p> <p>Large intestine - processing indigestible food</p> <p>Small intestine - break down food, absorb nutrients needed for the body, and get rid of the unnecessary components.</p> <p>Rectum holding area for the stool.</p> <p>Anus - let food waste come out at the end of its journey</p> <p>Nutrients</p> <p>Protein</p> <p>Fat</p> <p>Carbohydrates</p> <p>Vitamins and Minerals</p> <p>Fibre - A component of food that isn't broken down by the body but used to help move food through the digestive system</p> <p>Construct and interpret a variety of food chains, identifying producers, predators and prey</p> <p>Food chain</p> <p>Producers</p> <p>Predators</p> <p>Prey</p> <p>Consumer</p> <p>Herbivore</p> <p>Carnivore</p> <p>Omnivore</p>		<p>Fats</p> <p>Vitamins and minerals</p> <p>Protein</p> <p>Nutrition</p> <p>Describe the ways in which nutrients and water are transported within animals, including humans.</p> <p>Nutrients</p> <p>Mammals</p> <p>Fish</p> <p>Insects</p> <p>Heart</p> <p>Blood</p> <p>Blood vessels</p>
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			<p>Unhealthy foods - do not help keep my heart, muscles and bones strong,</p>				
<p><b>Reproduction, inheritance and evolution (Evolution, inheritance, life processes, life cycles)</b></p>		<p>Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees;  Children are able to state the name of two flowers within the school grounds e.g. buttercup and daisy. They can state the name of a deciduous and evergreen tree.</p> <p>Identify and describe the basic structure of a variety of common flowering plants, including trees.  Seed - the small, hard part of a plant from which a new plant grows.  Bulb - a root shaped like an onion that grows into a flower or plant.  stem - carries water and nutrients to different parts of the plant. It also provides support and keeps the plant standing upright.  Leaves - Usually, flat green parts that grow from a plant stem.  Germination - the growth of a seed into a young plant or seedling.  Roots - The part of a plant that grows downward, holds the</p>		<p>Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers  Roots  Stem  Leaves  Trunk  Flower  Shoot  Branch  Fruits  Petal  Reproduction  Soil - A mixture of minerals and organic matter  Oxygen - one of the main gases that make up air. Plants breathe out oxygen.  Carbon dioxide - produced from breathing, Plants absorb carbon dioxide.</p> <p>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  Children are able to investigate what a plant requires for life and growth.  Nutrients  Growth</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  Living  Dead  Fossil - the remains or imprint of a prehistoric plant or animal embedded in rock or preserved.</p> <p>Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents  Offspring  Inheritance - when characteristics are passed on to offspring from their parents  Variation - The differences between individuals between a species.  Characteristics</p> <p>Identify how animals and plants are adapted to suit their environment in different ways and that</p>



		<p>plant in place and takes in water from the soil.</p> <p>Shoots - A plant that comes up above the ground when it is just beginning to grow</p> <p>Trunk - main stem of a tree</p> <p>branch - where a trunk divides off into smaller sections.</p> <p>petal - a modified leaf that protects and surrounds the reproductive parts of a flower.</p> <p>Fruits - the part of a flowering plant that contains the seeds</p>		<p>Investigate the way in which water is transported within plants</p> <p>Transportation - the way water moves through a <b>plant</b>.</p> <p>Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.</p> <p><b>Lifecycle</b></p> <p>Pollination -.When pollen from one plant is carried over to the flower of another plant.</p> <p>Fertilisation - When pollen in plants joins with an egg</p> <p><b>Germination</b></p> <p>Stamens – make pollen and hold it in position</p> <p>Stigma – receives pollen during pollination</p> <p>Ovary – contains undeveloped seeds (ovules) which, if fertilised following pollination, develop into seeds</p> <p>Filament – supports the anther (slender stalk)</p> <p>Anther – the part of a stamen that produces and contains pollen</p> <p>Carpel – The female parts of the flower. Made up of the stigma, style and ovary.</p> <p>Style – The job of the style is to hold up the stigma.</p>			<p>adaptation may lead to evolution</p> <p><b>Adaptation</b></p> <p><b>Environment</b></p> <p><b>Habitat</b></p> <p>Evolution -adaptation over a long time</p> <p>Natural Selection - where organisms adapt to their environment in order to better survive and reproduce</p>
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				seed dispersal - seeds are transported by the wind, water, air, animals and explosion.			
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Chemistry	Year R	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
States of matter (Solids, liquids, gases)					<p>Compare and group materials together, according to whether they are solids, liquids or gases</p> <p>Solid - rigid, fixed shape and volume</p> <p>Liquid - Not rigid, no fixed shape, fixed volume</p> <p>Gas - Not rigid, no fixed shape or volume</p> <p>Particles – solids, liquids and gases are made up of particles,</p> <p>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)</p> <p>Condense – when a gas cools and changes into a liquid</p> <p>Evaporation – when liquid boils and changes into a gas</p> <p>Freezing – when a liquid is cooled down and changes into a solid</p>	<p>Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating</p> <p>Solid</p> <p>Liquid</p> <p>Gas</p> <p>Condensing</p> <p>Evaporating</p> <p>Freezing</p> <p>Melting</p> <p>A mixture is when two or more different materials are mixed together</p> <p>Filtering is used to separate insoluble solids from liquids.</p> <p>Sieving is used to separate different sized solids.</p> <p>Magnetism is used to separate iron and steel from non-magnetic materials.</p>	

					<p>Melting – when a solid is heated up and changes into a liquid</p> <p>Solidify – This is when cooling of a liquid slows the movement of the particles and they become solid at or near room temperature.</p> <p>Freezing – As above, but it happens at cold temperatures.</p> <p>Steam - Steam is the name given to the gaseous state of water at or above 100 degrees Celsius and is not visible.</p> <p>Water vapour - Water vapour is the gaseous state of water below 100 degrees Celsius and is visible as tiny water droplets.</p> <p>Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.</p> <p>Water Cycle - processes by which water circulates between the earth's oceans, atmosphere, and land, involving precipitation as rain and snow, drainage in streams and rivers, and return to the atmosphere by evaporation and transpiration.</p> <p>Precipitation – When the water droplets in the clouds become too heavy</p>		
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					<p>for the air to hold them, they fall back down to Earth as rain, snow, hail or sleet.</p> <p>Transpiration - Plants and trees lose water to the atmosphere through their leaves.</p> <p>Surface run off - Water that reaches land may flow across the ground and collect in the oceans, rivers or lakes.</p> <p>Groundwater - Some water will soak into the soil. It will slowly move through the ground until it eventually reaches a river or ocean.</p>		
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<p><b>Materials</b> <i>(Properties and changes including reversible/irreversible changes,)</i></p>	<p>Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class;</p> <p>Float Sink Shiny Rough Smooth Soft Hard Magnetic</p> <p>Discussions around scientific enquiry using vocabulary such as: Look See</p>	<p>Distinguish between an object and the material from which it is made</p> <p>Material – what an object is made from</p> <p>Metal - A solid material that is hard and shiny.</p> <p>Rock - A natural solid material made from minerals which make up the surface of the earth.</p> <p>Fabric - Cloth or material that is woven or knitted.</p> <p>Wood - Wood comes from the trunks and branches of trees.</p> <p>Plastic - Plastic is a man-made material that can change its shape.</p> <p>Ceramic - Ceramics are often made from clay.</p>	<p>Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses;</p> <p>Metal Rock Fabric Wood Plastic Ceramic Glass Water Brick Paper Elastic Suitable Purpose Float Sink</p>			<p>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</p> <p>Thermal conductor is how well a material lets heat travel through it.</p> <p>Thermal insulator A material that does not easily allow heat to pass through it</p> <p>Electrical conductor is how well a material lets electricity travel through it</p> <p>Electrical insulator A material that does not easily allow electricity to pass through it.</p>	
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	<p>Same Different Try Test Ideas Explore Find out</p>	<p>Glass - transparent (see-through), strong but easily breakable. Water - a liquid which is very important on Earth Brick - made from clay. Very strong. Paper - comes from trees and made into thin sheets to write and draw on. Elastic - an object that can return to its normal shape after being stretched or squashed.</p> <p>Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock.</p> <p>Metal Rock Fabric Wood Plastic Ceramic Glass Water Brick Paper Elastic</p> <p>Children are able to give an example of an object that is made from a material listed above.</p> <p>Describe the simple physical properties of a variety of everyday materials</p> <p>Metal Rock Fabric Wood Plastic Ceramic Glass Water</p>	<p>Shiny Rough Smooth Soft Hard Magnetic rubber cardboard brick compare everyday identify particular property suitability unsuitable uses</p> <p>Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. squash bend twist hard/soft stretchy shiny/dull, rough/smooth bendy transparent/opaque, sticky/not sticky flexible absorbent solid liquid waterproof flammable translucent transparent shatter elastic opaque moulded flexible changed</p>			<p>Hardness is how easily a material can be scratched or dented. Solubility (soluble/insoluble) is whether a material will dissolve in a liquid or not. Transparent allows light to pass through. Translucent is allowing light, but not detailed shapes, to pass through. Opaque is no light is able to pass through. A magnet is a rock or a piece of metal that can pull certain types of metal toward itself.</p> <p>Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution.</p> <p>Dissolving is when a solid breaks up completely in a liquid to make a solution. A solution is when a solid dissolves in a liquid. A substance is the material, or matter, from which something is made.</p> <p>Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic Children are able to give positive (and negative) reasons as to why a particular material would be best</p>	
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		<p>Float Sink Shiny Rough Smooth Soft Hard Magnetic</p> <p>Children are able to use descriptive language to describe the materials listed above.</p> <p>Suitable - Right for the purpose.</p> <p>Purpose - The reason why something is made or done.</p> <p>Compare and group together a variety of everyday materials on the basis of their simple physical properties.</p> <p>hard/soft, stretchy/not stretchy, shiny/dull, rough/smooth, bendy/not bendy, transparent/opaque, sticky/not sticky, flexible, absorbent, solid, liquid, waterproof</p>				<p>to use for an everyday object stating its properties.</p> <p>Demonstrate that dissolving, mixing and changes of state are reversible changes</p> <p>A reversible change is a change that can be undone. Children are able to give examples of a reversible change.</p> <p>Explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda.</p> <p>An irreversible change is a change where you cannot get the starting material back once the change has happened. Children are able to give examples of an irreversible change.</p>	
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Physics	Year R	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<p><b>Energy</b> (Light, sound, electricity)</p>				<p>Recognise that they need light in order to see things and that dark is the absence of light  Dark – the absence of light  Light – A form of energy that travels in a wave from a source  Light source – An object that makes its own light</p> <p>Notice that light is reflected from surfaces  Reflect – to bounce off  Reflection – when light hits a surface of an object and bounces back into our eyes  Reflective - A word to describe something which reflects light well  Ray – waves of light are called light rays. They can also be called beams.  Shiny - A smooth surface, usually very clean or polished.</p> <p>Recognise that light from the sun can be dangerous and that there are ways to protect their eyes  Pupil – the black part of the eye which lets light in  Retina – A layer at the very back of the eye. The retina takes the light the eye receives. It then changes it into</p>	<p>Identify how sounds are made, associating some of them with something vibrating  Sound - Vibrations that travel through the air or other medium and can be heard when they reach an animal's ear.  Sound wave – vibrations travelling from a sound source  Vibration - to move continuously and rapidly to and fro.  Particles</p> <p>Recognise that vibrations from sounds travel through a medium to the ear  Ear drum - A membrane of the middle ear which vibrates in response to sound waves.</p> <p>Find patterns between the pitch of a sound and features of the object that produced it  Pitch - The rate or frequency of vibrations produced by a sound.</p> <p>Find patterns between the volume of a sound and the strength of the vibrations that produced it  Volume - How loud or quiet a sound is.</p> <p>Recognise that sounds</p>		<p>Recognise that light appears to travel in straight lines  Light  Light source  Ray</p> <p>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  Reflect  Reflection  Reflective  Pupil  Retina  The law of reflection – the law states the angle of the incident ray is equal to the angle of the reflected ray  Transparent  Translucent  Opaque  Prism – A solid 3D shape with flat sides. The two ends are of equal shape and size. A transparent prism separates out visible light into all the colours of the spectrum.  Refraction – the bending of light rays (the change in speed of a wavelength as it passes through a material)  Visible spectrum – light that is visible to the human eye. It is made up of a colour spectrum.</p>

				<p>nerve signals to send to the brain.</p> <p>Recognise that shadows are formed when the light from a light source is blocked by an opaque object  Shadow – An area of darkness where light has been blocked  Opaque - A material that is not able to be seen through  Translucent - A material allowing light to pass through but not so an object can be clearly seen  Transparent - A material that allows light to pass through so objects behind can be clearly seen</p> <p>Find patterns in the way that the size of shadows change.</p>	<p>get fainter as the distance from the sound source increases.  Frequency - How high or low a sound is determined by the rate at which vibrations occur over a particular period of time.  Amplitude - The maximum extent of a vibration  Soundproof – to prevent sound from passing through  Absorb sound – to take in sound energy.  Absorbent materials have the effect of muffling sound.  Vacuum – A space where there is nothing. There are no particles in a vacuum.</p> <p>Identify common appliances that run on electricity  Appliances – A piece of equipment or a device designed to perform a particular job  Electricity – The flow of an electrical current through a material  Mains electricity – electricity supplied through wires to a building</p> <p>Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers  Series circuit – a circuit where components are connected in a loop</p>		<p>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  Light source  Pupil  Retina  Incident ray – A ray of light that hits a surface  Reflected ray – A ray of light that has bounced back after hitting a surface</p> <p>Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.  Shadows</p> <p>Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit  bulb  buzzer  cell  circuit  complete circuit  electricity  incomplete circuit  Motor  wires  Voltage -The force that makes the electric current move through the wires. The greater the voltage, the more current will flow.  Amps - How electrical current is measured  Current - The flow of electrons, measured in amps</p>
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					<p>Simple circuit – a bulb, cell and wires</p> <p>Bulb – lights up in a complete circuit</p> <p>Buzzer – makes a noise in a complete circuit</p> <p>Cell – normally called a battery but scientifically called a cell. Two or more cells join together to form a battery.</p> <p>Circuit – a pathway that electricity can flow around. It is based around wires and a power supply.</p> <p>Motor – produces movement in a complete circuit</p> <p>Series circuit – a circuit where components are connected in a loop</p> <p>Switch – used to turn other components in a circuit on or off</p> <p>Wires – used to connect the different components in the circuit together</p> <p>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</p> <p>Complete circuit – electricity will flow. All the components work.</p> <p>Incomplete circuit – there is a break in the circuit that prevents the electricity from flowing</p> <p>Bulb wires cell circuit</p> <p>Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series</p>		<p>Electrical resistance - The electrical resistance of an electrical conductor is a measure of the difficulty of passing an electric current through a substance.</p> <p>Electrons - Very small particles that travel around an electrical circuit</p> <p>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</p> <p>bulb buzzer cell circuit complete circuit electricity incomplete circuit Motor wires</p> <p>Use recognised symbols when representing a simple circuit in a diagram.</p> <p>Symbols - A visual picture that stands for something</p> <p>switches bulb buzzer cell circuit complete circuit electricity incomplete circuit simple circuit Motor wires</p>
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					<p>circuit switch series circuit circuit bulb wires cell circuit</p> <p>Recognise some common conductors and insulators, and associate metals with being good conductors.</p> <p>Electrical conductor - A material that will allow electricity to flow through it.</p> <p>Electrical insulator - A material that does not allow electricity to pass through it</p>		
<p><b>Forces</b> <i>(Friction, air resistance, gravity, magnets)</i></p>				<p>Compare how things move on different surfaces</p> <p>Force - a push or a pull action that changes the motion of an object</p> <p>Friction - A force that acts between two surfaces or objects that are moving, or trying to move across each other</p> <p>Notice that some forces need contact between two objects, but magnetic forces can act at a distance</p> <p>Magnet - An object which produces a magnetic force that pulls certain objects towards it</p> <p>Magnetic - objects which are attracted to a magnet are magnetic.</p> <p>Objects containing iron, nickel or cobalt metals are magnetic</p>		<p>Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object</p> <p>Force</p> <p>Gravity is a force that pulls everything towards the centre of the Earth.</p> <p>A Newton Metre is an object used to measure forces. A Newton (N) is the unit that forces are measured in.</p> <p>Weight is the pull of the Earth's gravity on an object.</p> <p>Identify the effects of air resistance, water resistance and friction, that act between moving surfaces</p> <p>Air resistance is a force that pushes back against you when you</p>	

				<p>Magnetic Field - the area around a magnet where there is a magnetic force which will pull magnetic objects towards the magnet.</p> <p>Force</p> <p>Observe how magnets attract or repel each other and attract some materials and not others</p> <p>Attraction - The coming together of opposite poles</p> <p>Repulsion - The moving away of like poles</p> <p>Pole - The ends of a magnet. Either north or south.</p> <p>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</p> <p>Magnet</p> <p>Magnetic</p> <p>Magnetic Field</p> <p>Metal - A solid material that is hard and shiny, with good electrical and heat conductivity</p> <p>Describe magnets as having two poles</p> <p>Attraction</p> <p>Repulsion</p> <p>Pole</p> <p>Predict whether two magnets will attract or repel each other, depending on which poles are facing</p> <p>Attraction</p>		<p>move through it Water resistance is a force that pushes back at you as you move through water. Friction</p> <p>Streamlined is a smooth shape to make moving through water and air easier. Upthrust is a force in water that pushes up against an object.</p> <p>Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.</p> <p>A gear is a wheel with teeth that fits together with others. when one turns, they all turn. A big gear will make a small gear turn faster.</p> <p>A lever is a simple mechanism made from a pole and a pivot. It makes it easier for us to lift objects. A pulley is a simple mechanism made from a rope running through a wheel. It makes it easier for us to lift objects</p>	
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				Repulsion Pole			
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Earth Sciences	Year R	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<b>Earth and space</b> <i>(Seasons, day and night, solar system and beyond)</i>	<p>Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.</p> <p>Discussions around the seasons: Spring, Summer, Autumn and Winter.</p> <p>Change Conker Bud Tree Leaves New life Grow Seed Fruit</p> <p>Earth Moon Planet Space Sun Star Solar System Galaxy Day Night</p>	<p>Observe changes across the four seasons</p> <p>Spring Summer Autumn Winter Season weather change</p> <p>Hibernating - When animals spend the winter in a type of long, deep sleep.</p> <p>Migration - The journey an animal takes to a new home.</p> <p>Evergreen - Trees that keep their green leaves all year round.</p> <p>Deciduous - Trees that lose their leaves every autumn</p> <p>Temperature - How hot or cold it is.</p> <p>Degrees Celsius – A scale to measure temperature where 0 degrees is freezing point. and 100 degrees is boiling point.</p> <p>Observe and describe weather associated with the seasons and how day length varies. Spring Summer Autumn Winter</p> <p>Weather - what the sky or air outside is like</p>				<p>Describe the movement of the Earth, and other planets, relative to the Sun in the solar system</p> <p>The solar system is a collection of eight planets (Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune), and their moons, in orbit around the sun, together with smaller bodies such as asteroids, meteoroids and comets. Earth orbits the sun once every 365.25 days. The gravity of the sun keeps the planets in their own orbits.</p> <p>Describe the movement of the Moon relative to the Earth</p> <p>The Moon (a natural satellite) orbits Earth in an elliptical path. The moon revolves on its axis once each time it orbits Earth. During its orbit around Earth, the moon appears to wax and wane and we see different phases of the moon in a lunar month. Earth is tidally affected by the moon. The moon reflects light from the sun.</p> <p>Describe the Sun, Earth</p>	

						<p>and Moon as approximately spherical bodies</p> <p>The Sun, Earth and moon are approximately spherical in shape.</p> <p>Use the idea of the Earth's rotation to explain day and night and the apparent movement of the Sun across the sky</p> <p>Earth rotates on its axis once every 24 hours. The Sun rises in the East and sets in the west due to its anticlockwise rotation. When Earth faces the sun, we experience daytime. When Earth is facing away from the Sun, we experience night time. Due to the tilt of Earth, the sun appears lower in the sky in winter and higher in the sky in summer. The sun does not move at all. In fact, it's Earth rotating on its axis.</p>	
<p><b>Rocks and fossils</b></p>				<p>Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties</p> <p>Rock</p> <p>Hardness</p> <p>Metamorphic - Rocks formed by the heating and crushing of existing rocks</p> <p>Igneous - Rocks made magma or lava from volcanoes or</p>			

deep underground  
Sedimentary - Rocks  
made of grains  
cemented together  
Mohs scale – mineral  
hardness scale  
ranging fro 1-10 (1  
being soft and 10  
being hard).  
Impermeable – not  
allowing liquid or gas  
to pass through it  
Permeable – allows  
liquids or gases to  
pass through it  
Porosity - How much  
empty space there is  
between grains or  
crystals  
Mineral - A solid  
substance made up  
of a range of  
different elements,  
e.g. iron, oxygen,  
carbon  
Ore - A rock that  
contains a metal that  
can be extracted

Describe in simple  
terms how fossils are  
formed when things  
that have lived are  
trapped within rock  
Erosion – when  
water, wind or ice  
wears away the land  
Fossil - The remains  
of animals or plants  
preserved in rock  
Silt - Fine sand or  
clay material  
Sediment – natural  
solid material that is  
moved and dropped  
off in a new place by  
water or wind  
Paleontologist – the  
study of fossils  
Lava – molten rock

				<p>that comes out of the ground Magma – molten rock that remains underground</p> <p>Recognise that soils are made from rocks and organic matter. Humus - Dead plant matter within soil Soil - A mixture of minerals and organic matter</p>			
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### Working Scientifically at St Mark's CofE Primary School

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
		Spring 1 and 2 Everyday Materials	Summer 1 Plants	Summer 1 Plants Spring 2 – Animals, including humans	Summer 1 Sound Autumn 2 – states of matter	Spring 1 Properties and Changes of Materials Spring 2 – forces Summer 2 -animals, including humans	Autumn 2 and Spring 1 Animals, including humans Spring 2 - Light
Testing	Safely use and explore a variety of materials	<ul style="list-style-type: none"> <li>Perform simple tests.</li> <li>Know whether the test has been successful and can say what has been learned.</li> </ul>	<ul style="list-style-type: none"> <li>Perform simple comparative and fair tests</li> </ul>	<ul style="list-style-type: none"> <li>Set up simple practical enquiries, comparative and fair tests (summer 1)</li> <li>Set up a fair test with different variables (Spring 2)</li> <li>Can explain to a partner why a test is a fair one. (Spring 2 and summer 1)</li> </ul>	<ul style="list-style-type: none"> <li>Set up simple practical enquiries, comparative and fair tests (Autumn 2/ Summer 1)</li> <li>Set up a fair test with more than one variable (summer 1)</li> <li>Can explain to others why a test is fair (Autumn 2 and Summer 1)</li> </ul>	<ul style="list-style-type: none"> <li>Set up an investigation when it is appropriate (spring 1)</li> <li>Set up a fair test when needed (spring 2)</li> <li>Set up an enquiry based investigation (summer 2)</li> <li>Know what variables are in a given enquiry and can isolate each one when investigating (spring 1)</li> </ul>	<ul style="list-style-type: none"> <li>Know which type of investigation is needed to suit a particular scientific enquiry (Autumn 2/Spring 1)</li> <li>Set up a fair test when needed (Spring 2)</li> <li>Know how to set up an enquiry based investigation (Autumn 2/Spring 1)</li> </ul>



	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
		All topics	All topics	All topics	All topics	All topics	All topics
Scientific Questioning		<ul style="list-style-type: none"> <li>Ask simple questions and recognise that they can be answered in different ways</li> </ul>	<ul style="list-style-type: none"> <li>Ask simple questions and recognise that they can be answered in different ways including use of scientific language from the national curriculum</li> </ul>	<ul style="list-style-type: none"> <li>Ask relevant questions and use different types of scientific enquiries to answer them</li> </ul>	<ul style="list-style-type: none"> <li>Ask relevant questions and use different types of scientific enquiries to answer them</li> </ul>	<ul style="list-style-type: none"> <li>Plan different types of scientific enquires to answer given questions.</li> </ul>	<ul style="list-style-type: none"> <li>Plan different types of scientific enquiries to answer their own or others' questions.</li> </ul>
	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
		All topics	All topics	All topics	All topics	All topics	All topics
Measuring	Recognise some environments that are different to the one in which they live.	<ul style="list-style-type: none"> <li>Use simple equipment to observe closely</li> </ul>	<ul style="list-style-type: none"> <li>Use simple equipment such as thermometers and rain gauges to observe closely changes over time</li> </ul>	<ul style="list-style-type: none"> <li>Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment</li> </ul>	<ul style="list-style-type: none"> <li>Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment</li> </ul>	<ul style="list-style-type: none"> <li>Take measurements using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate (Y5 maths focus including capacity and mass)</li> </ul>	<ul style="list-style-type: none"> <li>Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate (Y6 focus including capacity, mass, ratio and proportion)</li> </ul>

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
		All topics	All topics	All topics	All topics	All topics	All topics
Gathering and recording	Describe what they see, hear and feel whilst outside.	<ul style="list-style-type: none"> <li>Gather and record data to help in answering questions (Year 1 focus)</li> </ul>	<ul style="list-style-type: none"> <li>Communicate his/her Ideas, what he/she does and what he/she finds out In a variety of ways</li> </ul>	<ul style="list-style-type: none"> <li>Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions</li> </ul>	<ul style="list-style-type: none"> <li>Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions</li> </ul>	<ul style="list-style-type: none"> <li>Report and present 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</li> </ul>	<ul style="list-style-type: none"> <li>Report and present 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</li> </ul>
	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
		Autumn 1 Animals, including humans	Summer 1 Plants Summer 2 Living things and their habitats	Summer 1 Plants	Autumn 2 States of matter Summer 2 Sound	Summer 1 & 2 Living things and their habitats	Autumn 1 Living things and their habitats Autumn 2 & Spring 1 – Animals, including humans
Classifying	Know some similarities and differences between the natural world around them and	<ul style="list-style-type: none"> <li>Identify and classify (Year1 focus)</li> </ul>	<ul style="list-style-type: none"> <li>Identify, group and classify according to a given criteria (Venn diagram)</li> </ul>	<ul style="list-style-type: none"> <li>Group information according to common factors (Venn Diagrams)</li> </ul>	<ul style="list-style-type: none"> <li>Group information according to common factors (Venn Diagrams with bisecting)</li> </ul>	<ul style="list-style-type: none"> <li>Group and classify things and recognise patterns using appropriate ways of</li> </ul>	<ul style="list-style-type: none"> <li>Group and classify things and recognise patterns using appropriate ways of</li> </ul>

	contrasting environments, drawing on their experiences and what has been read in class.			with bisecting sets or Carroll Diagrams)	sets or Carroll Diagrams)	presenting (classification key)	presenting (classification key)
	<b>EYFS</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>	<b>Year 6</b>
		N/a	N/a	Autumn 1 Rocks Summer 2 Light	Autumn 1 Animals, including humans Summer 2 Electricity	Autumn 1 Space Summer 1 & 2 Living things and their habitats	Autumn 1 Living things and their habitats Sumer 1 Evolution
Scientific research	Explore the natural world around them, making observations and drawing pictures of animals and plants.			<ul style="list-style-type: none"> <li>Use research to find out a range of things</li> </ul>	<ul style="list-style-type: none"> <li>Use research to find out a range of things</li> </ul>	<ul style="list-style-type: none"> <li>Find things out using a wide range of secondary sources of information</li> </ul>	<ul style="list-style-type: none"> <li>Find things out using a wide range of secondary sources of information</li> </ul>
	<b>EYFS</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>	<b>Year 6</b>
		N/a	Spring 2 Animals, including humans Summer 1 Plants	Autumn 2 Forces and magnets Summer 1 Plants	Autumn 2 States of matter Summer 1 Sound Summer 2 Electricity	Autumn 2 & Spring 1 Properties and changes of materials Spring 2 Forces	Autumn 2 Living things and their habitats Spring 2 Light Summer 1 Electricity

Concluding and questioning	Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.		<ul style="list-style-type: none"> <li>Use his/her observations and ideas to suggest answers to questions noticing similarities, differences and patterns (Year 2 focus)</li> </ul>	<ul style="list-style-type: none"> <li>Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions (Year 3 focus)</li> </ul>	<ul style="list-style-type: none"> <li>Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions</li> </ul>	<ul style="list-style-type: none"> <li>Use results to draw conclusions</li> <li>Is evaluative when explaining findings from scientific enquiries and is clear about what has happened in recent enquiries. Can relate this to other enquiries where appropriate</li> </ul>	<ul style="list-style-type: none"> <li>Use results to draw conclusions</li> <li>Is evaluative when explaining findings from scientific enquiries and is clear about what has happened in recent enquiries. Can relate this to other enquiries where appropriate</li> </ul>
	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
		N/a	N/a	Autumn 2 Forces and magnets Spring 2 Animals, including humans Summer 2 Light	Autumn 1 Animals, including humans Autumn 2 States of matter Summer 1 Sound Summer 2 Electricity	Autumn 1 Earth and Space Spring 2 Forces Summer 1&2 Living things and their habitats	Autumn 1 Living things and their habitats Autumn 2&Spring 1 Animals, including humans Summer 2 Evolution and inheritance
Using scientific evidence				<ul style="list-style-type: none"> <li>Use straightforward scientific evidence to answer</li> </ul>	<ul style="list-style-type: none"> <li>Use straight forward scientific evidence to answer</li> </ul>	<ul style="list-style-type: none"> <li>Identify scientific evidence that has been used to support or</li> </ul>	<ul style="list-style-type: none"> <li>Identify scientific evidence that has been used to support or</li> </ul>

				questions or to support his/her findings (Year 3 focus)	questions or to support his/her findings (Year 4 focus)	refute ideas or arguments (Year 5 focus)	refute ideas or arguments (Year 6 focus)
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### Disciplinary knowledge progression

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
<b>Year 1</b>	Animals, including humans	Seasonal Changes	Everyday materials	Everyday materials	Plants	Plants
	Identify and classify (Year1 focus)		Testing: <ul style="list-style-type: none"> <li>• Perform simple tests.</li> <li>• Know whether the test has been successful and can say what has been learned.</li> </ul>	Testing: <ul style="list-style-type: none"> <li>• Perform simple tests.</li> <li>• Know whether the test has been successful and can say what has been learned.</li> </ul>		
<b>Year 2</b>	Uses of everyday materials	Uses of everyday materials	Animals, including humans	Animals, including humans	Plants	Living things and their habitats
			Use his/her observations and ideas to suggest answers to questions noticing similarities, differences and patterns (Year 2 focus) <ul style="list-style-type: none"> <li>• Identify, group and classify according to</li> </ul>	Use his/her observations and ideas to suggest answers to questions noticing similarities, differences and patterns (Year 2 focus) <ul style="list-style-type: none"> <li>• Identify, group and classify according to</li> </ul>	Testing: <ul style="list-style-type: none"> <li>• Perform simple comparative and fair tests</li> </ul> Use his/her observations and ideas to suggest answers to questions noticing similarities, differences and patterns (Year 2 focus)	

			a given criteria (Venn diagram)	a given criteria (Venn diagram)	<ul style="list-style-type: none"> <li>Identify, group and classify according to a given criteria (Venn diagram)</li> </ul>	
<b>Year 3</b>	Rocks	Forces and magnets		Animals, including humans	Plants	Light
	<p>Use research to find out a range of things</p> <ul style="list-style-type: none"> <li>Set up simple practical enquiries, comparative and fair tests (summer 1)</li> <li>Set up a fair test with different variables (Spring 2)</li> </ul> <p>Can explain to a partner why a test is a fair one. (Spring 2 and summer 1)</p>	<p>Use straightforward scientific evidence to answer questions or to support his/her findings (Year 3 focus)</p> <p>Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions (Year 3 focus)</p>		<p>Use straight forward scientific evidence to answer questions or to support his/her findings (Year 4 focus)</p> <ul style="list-style-type: none"> <li>Set up simple practical enquiries, comparative and fair tests (summer 1)</li> <li>Set up a fair test with different variables (Spring 2)</li> </ul> <p>Can explain to a partner why a test is a fair one. (Spring 2 and summer 1)</p>	<p>Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions (Year 3 focus)</p> <ul style="list-style-type: none"> <li>Group information according to common factors (Venn Diagrams)</li> </ul> <p>with bisecting sets or Carroll Diagrams</p> <ul style="list-style-type: none"> <li>Set up simple practical enquiries, comparative and fair tests (summer 1)</li> <li>Set up a fair test with different variables (Spring 2)</li> </ul> <p>Can explain to a partner why a test is a fair one. (Spring 2 and summer 1)</p>	<p>Use straightforward scientific evidence to answer questions or to support his/her findings (Year 3 focus)</p> <p>Use research to find out a range of things</p>

Year 4	Animals, including humans	States of matter	Living things and their habitats		Sound	Electricity
	<p>Use straight forward scientific evidence to answer questions or to support his/her findings (Year 4 focus)</p> <p>Use research to find out a range of things</p>	<p>Use straight forward scientific evidence to answer questions or to support his/her findings (Year 4 focus)</p> <p>Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions (Year 3 focus)</p> <ul style="list-style-type: none"> <li>● Set up simple practical enquiries, comparative and fair tests (Autumn 2/ Summer 1)</li> <li>● Set up a fair test with more than one variable (summer 1)</li> <li>● Can explain to others why a test is fair (Autumn 2 and Summer 1)</li> </ul>			<ul style="list-style-type: none"> <li>● Group information according to common factors (Venn Diagrams with bisecting sets or Carroll Diagrams)</li> <li>● Set up simple practical enquiries, comparative and fair tests (Autumn 2/ Summer 1)</li> <li>● Set up a fair test with more than one variable (summer 1)</li> <li>● Can explain to others why a test is fair (Autumn 2 and Summer 1)</li> <li>●</li> </ul>	<p>Use straight forward scientific evidence to answer questions or to support his/her findings (Year 4 focus)</p> <p>Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions (Year 3 focus)</p> <p>Use research to find out a range of things</p>
Year 5	Earth and Space	Properties and changes of materials	Properties and changes of materials	Forces	Living things and their habitats	Living things and their habitats/Animals, including humans
	Identify scientific evidence that has been used to support or	<ul style="list-style-type: none"> <li>● Use results to draw conclusions</li> </ul>		<ul style="list-style-type: none"> <li>● Use results to draw conclusions</li> </ul>	Identify scientific evidence that has been used to support or	Identify scientific evidence that has been used to support or

	<p>refute ideas or arguments (Year 5 focus) Find things out using a wide range of secondary sources of information</p>	<p>Is evaluative when explaining findings from scientific enquiries and is clear about what has happened in recent enquiries. Can relate this to other enquiries where appropriate</p> <ul style="list-style-type: none"> <li>• Set up an investigation when it is appropriate (spring 1)</li> <li>• Set up a fair test when needed (spring 2)</li> <li>• Set up an enquiry based investigation (summer 2)</li> </ul> <p>Know what variables are in a given enquiry and can isolate each one when</p>		<p>Is evaluative when explaining findings from scientific enquiries and is clear about what has happened in recent enquiries. Can relate this to other enquiries where appropriate</p> <ul style="list-style-type: none"> <li>• Set up an investigation when it is appropriate (spring 1)</li> <li>• Set up a fair test when needed (spring 2)</li> <li>• Set up an enquiry based investigation (summer 2)</li> </ul> <p>Know what variables are in a given enquiry and can isolate each one when</p>	<p>refute ideas or arguments (Year 5 focus) Find things out using a wide range of secondary sources of information Group and classify things and recognise patterns using appropriate ways of presenting (classification key)</p> <ul style="list-style-type: none"> <li>• Set up an investigation when it is appropriate (spring 1)</li> <li>• Set up a fair test when needed (spring 2)</li> <li>• Set up an enquiry based investigation (summer 2)</li> </ul> <p>Know what variables are in a given enquiry and can isolate each one when</p>	<p>refute ideas or arguments (Year 5 focus)</p>
<b>Year 6</b>	Living things and their habitats	Animals, including humans	Animals, including humans	Light	Electricity	Evolution and inheritance



	<ul style="list-style-type: none"> <li>● Use results to draw conclusions</li> <li>● Is evaluative when explaining findings from scientific enquiries and is clear about what has happened in recent enquiries. Can relate this to other enquiries where appropriate</li> <li>● Find things out using a wide range of secondary sources of information</li> <li>● Group and classify things and recognise patterns using appropriate ways of presenting (classification key)</li> </ul>	<p>Identify scientific evidence that has been used to support or refute ideas or arguments</p> <p>Group and classify things and recognise patterns using appropriate ways of presenting (classification key)</p> <ul style="list-style-type: none"> <li>● Know which type of investigation is needed to suit a particular scientific enquiry (Autumn 2/Spring 1)</li> <li>● Set up a fair test when needed (Spring 2)</li> <li>● Know how to set up an enquiry based investigation (Autumn 2/Spring 1)</li> </ul>		<ul style="list-style-type: none"> <li>● Use results to draw conclusions</li> <li>● Is evaluative when explaining findings from scientific enquiries and is clear about what has happened in recent enquiries. Can relate this to other enquiries where appropriate</li> <li>● Know which type of investigation is needed to suit a particular scientific enquiry (Autumn 2/Spring 1)</li> <li>● Set up a fair test when needed (Spring 2)</li> <li>● Know how to set up an enquiry based investigation (Autumn 2/Spring 1)</li> </ul>	<ul style="list-style-type: none"> <li>● Use results to draw conclusions</li> <li>● Is evaluative when explaining findings from scientific enquiries and is clear about what has happened in recent enquiries. Can relate this to other enquiries where appropriate</li> </ul>	<p>Find things out using a wide range of secondary sources of information</p>
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