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Science Knowledge
Progression Plan Years EYFS – 6

Aspect	Reception/EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Animals including humans: Identifying and naming	Children will be introduced and encouraged to describe and label the features of animals and their habitats. Children will have a basic understanding of life cycles through direct observation. Children will be exposed to a range of natural and man-made materials and describe them. The children will explore the natural world around them observing growth and change around them. Throughout the year children will observe and discuss seasonal change. Links to ELG Understanding the importance of healthy food choices Describe their immediate environment using knowledge from observation,	Identify and name a range of common animals and their habitats.	Identify the habitats of animals and understand that most living things live in habitats to which they are suited.	Identify some of the most common bones in animals such as skull, ribs and spine, describing their primary functions and explain the function of the skeleton.	Identify producers, predators and prey in a given food chain and define the terms.	Identify the key stages in human growth and development from birth to old age.	Identify the major parts of the human circulatory system and their functions (heart, blood vessels and blood).
Animals including humans: Classification			Sort and classify things according to whether they are dead, alive or have never been alive.	Use classification keys to group, identify and name a variety of living things in their local and wider environment and identify them as invertebrates, fish, amphibians,, reptiles, birds and mammals.	Explore and use classification keys and assign living things to groups, using the keys and develop their own	Describe the difference in the lifecycles in the different categories of animals: mammals, amphibians, insects and birds.	Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences. Give reasons for classifying plants and animals in this way.
Animals including humans: Habitats, adaptation and interdependence			Define the terms 'habitat' and 'micro-habitat', giving examples of animals that live in each place.	Know that animals, including humans, cannot make their own food and recognise that all food begins with a plant.	Construct a variety of food chains and explain what would happen if one of the parts of the chain became 'unavailable'. Recognise that environments can change and that this can sometimes pose dangers to living things.	Complete own research/ watch documentaries, noting detail on animals and plants in their habitats, including the work of naturalists such as Attenborough or Goodall.	Describe how animals must adapt to their habitat to survive.
Animals including humans:			Identify the basic needs of animals and humans for survival, including good	Describe how each of the main food groups specifically benefit the	Identify different foods that can affect the health of teeth and know the	Describe the process of sexual reproduction in a familiar animal	Recognise and describe the damaging impact that some drugs, other substances

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Growth, health and survival	discussion, stories, non-fiction texts, and maps. 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.		nutrition and regular exercise.	human body for growth and health.	importance of good oral hygiene.		and life-style can have on the human body.
Animals including humans: Diet and teeth		Identify whether an animal is a carnivore, herbivore or omnivore and how we might know this from their physical appearance.	Construct a simple food chain that includes humans at the top as the consumer.	Identify the different food groups and design a healthy meal based on these food groups.	Identify the different types of teeth and their functions		Explain how nutrients and water are transported within humans and animals.
Animals including humans: The body		Draw and label basic parts of the human body, including those related to the senses.	Explain simply how humans and some familiar animals change as they grow.	Describe the role of the skeleton in the body	Identify the body parts associated with the digestive system, such as mouth, tongue, teeth, oesophagus, stomach and intestine and describe their special functions.	Describe the key physical changes in the male and female human body during puberty. Describe the changes in the human body as it develops to old age.	Describe how lifestyle is important for the health of the human circulatory system, including how diet, exercise, drugs and lifestyle affect our bodies.
Animals including humans: Life Cycles		Describe in simple terms the life cycle of familiar animals.	Notice that animals have offspring which grow into adults. Recognise the need for animals and humans to grow and reproduce.			Observe and compare the lifecycle of an insect, an amphibian, a bird and a mammal.	
Substances, matter and materials: Identifying and naming		Name a range of everyday materials, including wood, plastic, metal, rock and glass.	Identify the uses of everyday materials in a familiar location (e.g. school or home), recording their findings.	Identify and name a range of rocks and soils, describing simply how fossils are formed.	Identify how water changes state, using the correct terminology and relate these key processes to the water cycle. Identify the role of evaporation and condensation in the water cycle	Identify a wide range of reversible and irreversible changes that are in use in everyday life, including changes associated with burning and the action of acid on bicarbonate of soda.	

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Substances, matter and materials: Classification		Group and sort materials according to their simple physical properties.	Sort and grade a range of materials for a specific property (e.g. smoothness).	Classify and group rocks according to their appearance or physical properties, using a hand lens or digital microscope and identify whether they are granular, crystalline or fossilised.	Classify everyday materials as a solid, liquid or gas at room temperature.	Classify and group mixtures for how they can be separated, including sieving, filtering and evaporating.	
Substances, matter and materials: Uses		Identify the material an object is made from	Identify and describe the range of materials that can be used to make a single given object (e.g. cup, chair, table or shelter).	Suggest reasons why certain rocks or stones are used for a specific purpose.		Provide evidence from comparative and fair tests and reasons why a material has been chosen for a specific use.	
Substances, matter and materials: Physical processes		Identify some materials that help physical processes and materials have been chosen for a particular purpose (e.g. woollen fabric keeps us warm)	Describe how the shape of some materials can be changed by twisting, kneading, squashing or stretching.	Explain the terms 'weathering' and 'erosion' and describe the effect they have on rocks and soils.	Explain the effect of heating and cooling on a range of substances, including water.	Describe what happens when a solute dissolves in a solvent to form a solution and how this process can be reversed.	
Substances, matter and materials: Physical properties		Describe properties of materials using everyday language or simple scientific vocabulary (e.g. hard/soft, bendy/not bendy).	Relate a material's physical properties to its uses (e.g. describe or demonstrate how a material can be unsuitable for a given task due to its ability to be changed by	Investigate the physical properties of one or a number of rock types and relate their properties to their appearance.	Describe the properties of solids, liquids and gases, giving examples of each (e.g. solids retain their shape).	Describe some materials' physical properties, including hardness, transparency, conductivity, solubility and magnetism.	

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			squashing and bending).				
Substances, matter and materials: Comparisons		Compare two or more different materials for their performance at a particular task (e.g. mopping up a spill).	Compare significant individuals who have developed useful materials (e.g. Charles Macintosh or John Dunlop) and decide which individual material is most useful to them.		Measure or research the temperature, in degrees celsius, at which materials change state		
Plants: Identifying and naming		Identify and name common flowers and trees found growing in the locality.	Identify what eats plants as a food source and recognise simple food chains.	Identify and describe the functions of common plant parts. Explain how their structure is suited to their function.		Identify the key structures involved in plant sexual reproduction.	
Plants: Classification			Sort seeds and bulbs into groups according their physical features.	Sort and classify a range of seeds into broad dispersal methods, such as wind (dandelion), water (coconut) or animal (yew).			Devise classification keys to identify plants. Give reasons for classification.
Plants: Plant parts and their functions		Identify the basic structural parts of common flowering plants and trees, including root, stem, stalk, leaves, flowers, bulb, fruit, seeds and trunk.	Describe the different plant parts.	Draw a simple diagram to show how water is transported through a plant.		Explain why plants have flowers and why it is important for them to attract insects and other pollinators.	Research and describe similarities and differences between different parts of a plant.

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Plants: Habitats and Adaptation			Explain how plants are suited to their habitats and give examples of plants growing in different habitats.	Compare and describe how requirements for growth vary from plant to plant and how this relates to a plant's environment	Describe how plants adapt to the environmental conditions in which they grow. Compare and contrast plants suited to different habitats.		
Plants: Growth and Survival		Care for a growing seedling, observing and describing its growth.	Describe how plants grow, identifying what a plant needs for healthy growth and survival (water, light and a suitable temperature).	Recognise that plants make their own food necessary for growth and survival, storing it in their leaves (they do not need to understand how this happens).	Explain how humans can impact on plants' environment in both positive and negative ways, giving examples from their locality.		
Plants: Life Cycles		Identify the seeds, as a part of a plant, that makes a whole new plant.	Recognise that plants produce seeds in order to reproduce and generate new plants. Describe the requirements of plants for germination.			Describe the process of plant reproduction using the correct scientific language. Observe/comment on/record plant life cycles.	
Plants: Seasonal Changes		Describe how plants change over time, including seasonal changes (leaves fall off, blossom, buds opening), including deciduous and evergreen trees.	Describe how bulbs help plants to grow in winter.			Grow a range of plants/vegetables from seeds, across the different seasons and note the conditions needed for growth.	Identify relationships between the seasons and a typical plant life cycle using observations.
Plants: Comparisons			Make comparisons between seeds or	Compare and explain the effect of different			

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			bulbs grown in different conditions (e.g. with and without light or water).	factors on plant growth, including light and nutrition.			
Light and Sound: Identifying and naming				Identify that light is reflected from surfaces, using equipment such as mirrors to demonstrate.	Listen to and be able to identify a variety of familiar sounds and what is vibrating in each case.		Identify parts of the eye.
Light and Sound: Phenomena				Recognise that dark is the absence of light and describe how light behaves.	Recognise that vibrations from sound travel through a medium to the outer ear		Describe how white light can be split using prisms and droplets of water and what colours white light is made from.
Light and Sound: Physical processes				Explain that when a light source is blocked a shadow is formed.	Explain the patterns between the pitch of a sound and the features of the object that produced it. Explain the patterns between the volume of a sound and the strength of the vibrations that produced it.	Describe the Earth's rotation to explain day and night.	Explain how light behaves and travels in straight lines. Demonstrate, using a model or diagram, how this explains why we can see objects and how shadows are formed.
Light and Sound: Classifying				Classify a range of objects as either a light source or light reflector.			
Light and Sound: Comparing				Compare and find patterns in the way that the size of shadows change when the light source moves or the distance between the	Measure and compare the volume of a sound at different distances from its source, using appropriate equipment.	Compare day lengths during different seasons and provide an explanation for why they differ.	Compare how a beam of light changes direction (refraction) when passing through different mediums, such as water and air.

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				light source and the object changes.			
Light and Sound: Safety				Recognise that light from the sun is damaging to vision and the skin, and how we can protect ourselves.			
Forces: Identifying and naming				Name a range of familiar daily activities which rely upon or are caused by forces and magnets.		Identify and define the opposing forces that act upon objects: air resistance, water resistance and friction.	
Forces: Physical processes				Describe forces in action (pulling and pushing) and whether the force requires direct contact between objects or whether the force can act at a distance (magnetic force).		Describe the force of gravity, what causes it Use study skills to research the work of scientists such as Galileo or Newton.	
Forces: Phenomena				Explain the terms 'magnetic attraction' and 'repulsion' and 'magnetic poles', using a model for assistance. Notice that magnets attract and repel some materials but not others.		Demonstrate, using a model, how simple levers, gears and pulleys assist the movement of objects by using less force.	

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Forces: Testing				Make predictions and test whether two magnets will attract or repel one another, depending on which way their poles are facing.		Make predictions, supported by scientific reasoning to test the effects of friction on movement and distance travelled.	
Forces: Comparing				Compare how an object moves over surfaces made from different materials, making predictions and measuring the distance travelled.		Compare the speed with which objects of different shapes and surface area fall through air or water and explain the reason for any differences in terms of the forces acting on the objects.	
Forces: Classification				Sort and group materials into those that are magnetic and those that are not magnetic and identify patterns within these groups.			
Seasonal changes: Identifying and naming		Name a range of different types of weather from pictures or sounds.	Identify less familiar weather conditions that are more common in other parts of the world.				
Seasonal changes: Effects of weather		Describe some positive and negative effects of the weather for ourselves and our environment.	Explain how and why the weather influences our choice of clothing and				

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			affects what we can do.				
Seasonal changes: Recording the weather		Observe and record the weather	Identify patterns and also similarities and differences within recorded weather over a given period of time.				
Seasonal changes: The seasons		Broadly assign different weather types to the seasons.	Explain how animals or plants are affected by the seasons, using a specific animal or plant as an example.				
Seasonal changes: Day length		Describe how day length changes over a year, from experience and know how it affects their lives.	Make comparisons to other parts of the world where day length changes to a greater or lesser degree, such as Arctic or equatorial regions.				
Electricity: Identifying and naming					Identify and name a range of familiar devices and equipment that require electricity for power.		Identify and name components of a circuit and define terms, such as 'voltage' and 'current', in relation to series circuits.
Electricity: Series circuits			Create working circuits in the context of D and T (e.g. to light a bulb or work a buzzer).		Construct operational simple series circuits, using a range of components and switches for control, and use these to make simple devices.		Work scientifically to construct a series circuit for a specific device or outcome and explain how it works.

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Electricity: Circuit symbols					Predict if a circuit will work based on whether it is a complete loop and draw simple series circuits, using their own or conventional circuit symbols.		Draw a series circuit, using the conventional symbols.
Electricity: Current and voltage					Recognise that a cell (battery) is a power source		Describe the relationship between the number of cells, or the voltage of a cell, and the effect this has on a bulb or buzzer.
Electricity: Conductors and insulators					Sort and classify materials into those that are conductors and those that are insulators and associate metals with being good conductors.		Predict materials that could be good conductors of electricity and conduct a fair test to show this.
Electricity: Safety					Recognise the dangers of working with electricity and explain how to work safely.		Know how to work safely with electrical circuits.
Earth and Space: Identifying and naming						Name the eight planets of the solar system and describe their position and movement in relation to the sun.	
Earth and Space: Moons						Describe what a moon is, how they orbit a planet and which planets in our solar system have them.	
Earth and Space: Spherical bodies						Describe the sun, the Earth and the moon as	

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						approximate spherical bodies.	
Earth and Space: Day and night						Explain day and night referring the Earth's rotation, correct terminology and a model.	Compare times in other parts of the world and relate this to the use of time zones.
Earth and Space: Day length and the seasons						Explain how the Earth's 'position' affects day length.	
Evolution and inheritance: Identifying and naming				Identify a range of fossilised animals and plants from pictures.			
Evolution and inheritance: Inheritance							Recognise that living things produce offspring of the same kind but normally offspring vary and are not identical to parents. Match offspring to their parents, linked to observable features and characteristics.
Evolution and inheritance: Evolution							Recognise that living things have changed over time. Research the work of Darwin.
Evolution and inheritance: Adaptation							Identify how specific plants or animals have adapted to their environment and that adaptation may lead to evolution.

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Evolution and inheritance: Fossils				Define what a fossil is and how they are formed.			Explain how fossil discoveries have helped develop the theory of evolution.
Evolution and inheritance: The future				Suggest what the fossil of the future may be.			Suggest ways in which future changes in the world's climate may impact on ourselves and other living species and suggest ideas for how we may adapt to these changes.