KA Skills Progression in Science

EYFS	**ELG: The Natural World** 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.					
	Y1	**Y2**	**Y3**	**Y4**	**Y5**	**Y6**
Biology - Living things and their habitats (plants,animals, humans)	Identify and name parts of the body linked to senses Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals Identify and name a variety of common animals that are carnivores, herbivores and omnivores Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets) Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees Identify and describe the basic structure of a variety of common flowering plants, including trees	Compare differences between things that are living, dead and have never lived Identify that most living things have habitats suited to their basic needs. Understand a simple food chain Observe and describe how seeds and bulbs grow into mature plants Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy Notice that animals, including humans, have offspring, which grow into adults Find out about and describe the basic needs of animals, including humans, for survival (water, food and air) Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene Explore and compare the differences between things that are living, dead, and things that have never been alive Identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other Identify and name a variety of plants and animals in their habitats, including micro-habitats Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food	Understand pollination, seed formation and dispersal Identify how animals and plants get nutrients Identify that humans & some other animals have skeletons Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers Explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant Investigate the way in which water is transported within plants Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal Identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat Identify that humans and some other animals have skeletons and muscles for support, protection and movement	Recognise how changing environments affect living things Recognise that living things can be grouped in a variety of ways Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment Recognise that environments can change and that this can sometimes pose dangers to living things	Identify changes to humans and the life cycles of different animals Describe the changes as humans develop to old age Describe the life process of reproduction in some plants and animals Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird	Identify the parts & purpose of the circulatory system Recognise how lifestyle affects the way bodies function Describe how nutrients are transported Classify living things, based on similarities, differences and micro-organisms, giving reasons Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function Describe the ways in which nutrients and water are transported within animals, including humans Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals Give reasons for classifying plants and animals based on specific characteristics
	SEND PROVISION: **Photos and videos to support understanding of changes** **Checklist to support understanding of similarities and difference** **Visuals and word banks to support technical vocabulary** **Pre-teaching to support brand new concepts** **Pre-teaching using Knowledge organiser** **Wordbanks for specific scientific vocabulary** **As much as possible – practical activities and materials.** **Use of IT to support explaining – pre-set wordbanks**					

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Biology - Evolution & Inheritance						Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution
	SEND PROVISION: **Photos and videos to support understanding of changes** **Checklist to support understanding of similarities and difference** **Visuals and word banks to support scientific vocabulary** **Pre-teaching to support brand new concepts**					
Chemistry - States of matter, including materials	Compare & group materials on the basis of their properties Distinguish between an object and the material from which it is made Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock Describe the simple physical properties of a variety of everyday materials Compare and group together a variety of everyday materials on the basis of their simple physical properties	Understand that solid objects made from some materials can change shape when squashed, bent, twisted or stretched Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching	Compare & group different rocks based on appearance, & simple physical properties Describe simply how fossils are formed when a living thing has been trapped within a rock Recognise that soils are made from rock & organic matter Describe in simple terms how fossils are formed when things that have lived are trapped within rock Recognise that soils are made from rocks and organic matter	Compare & group materials as solids, liquids & gases Understand that some materials change state when heated or cooled Describe the water cycle, using scientific language such as evaporation & condensation Compare and group materials together, according to whether they are solids, liquids or gases Observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C) Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature	Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic Demonstrate that dissolving, mixing and changes of state are reversible changes Explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda	
	SEND PROVISION: **Photos and videos to support understanding of changes** **Visuals and word banks to support scientific vocabulary** **Pre-teaching to support brand new concepts** **Consider sensory issues – e.g., wearing gloves when touching materials** **Scaffold for making notes/observations including sentence starts to support understanding.**					

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Physics - Earth and Space/Seasonal Changes	Observe changes across the four seasons Observe and describe weather associated with the seasons and how day length varies				Describe the movement of the Earth, and other planets, relative to the Sun in the solar system Describe the movement of the Moon relative to the Earth Describe the Sun, Earth and Moon as approximately spherical bodies Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky	
	SEND PROVISION: **Photos and videos to support understanding of changes** **Visuals and word banks to support scientific vocabulary** **Pre-teaching to support brand new concepts** **Consider sensory issues such as light sensitivity.** **Scaffold for making notes/observations including sentence starts to support understanding.** **Consider trips to enrich understanding of tricky concepts or visitors such as science dome.**					
Physics - Light & Sound			Recognise that light is needed in order to see things and that dark is the absence of light Notice that light is reflected from surfaces Recognise that light from the sun can be dangerous and that there are ways to protect eyes Recognise that shadows are formed when the light from a light source is blocked by a solid object Find patterns in the way that the size of shadows change	Identify how sounds are made, associating some of them with something vibrating Recognise that vibrations from sounds travel through a medium to the ear Identify patterns between the pitch of a sound and features of the object that produced it Identify patterns between the volume of a sound and the strength of the vibrations that produced it Recognise that sounds get fainter as the distance from the sound source increases		Recognise that light appears to travel in straight lines Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye Explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them
	SEND PROVISION: **Photos and videos to support understanding of changes** **Visuals and word banks to support scientific vocabulary** **Pre-teaching to support brand new concepts** **Consider sensory issues such as light or hearing sensitivity – consider use of protective glasses discuss with parents or specialists.** **Scaffold for making notes/observations including sentence starts to support understanding.** **Consider size of measuring equipment** **Consider groupings for practical measuring**					
Physics - Forces			Compare how things move on different surfaces Identify that some forces need contact between two objects, but magnetic forces can act at a distance Observe how magnets attract or repel each other and attract some materials and not others Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials Describe magnets as having two poles Predict whether two magnets will attract or repel each other, depending on which poles are facing		Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object Identify the effects of air resistance, water resistance and friction that act between moving surfaces. Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect	

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	SEND PROVISION: **Photos and videos to support understanding force** **Visuals and word banks to support scientific vocabulary** **Pre-teaching to support brand new concepts** **Scaffold for making notes/observations including sentence starts to support understanding.** **Consider size of equipment** **Use practical examples of gears and pulleys e.g., mechanical wooden toys as constant reference.**					
Physics - Electricity				Identify common appliances that run on electricity Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers Identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit Recognise some common conductors and insulators, and associate metals with being good conductors		Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit Compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches Use recognised symbols when representing a simple circuit in a diagram
	SEND PROVISION: **Photos and videos to support understanding force** **Visuals and word banks to support scientific vocabulary** **Pre-teaching to support brand new concepts** **Scaffolds for circuits – how to guides** **Consider size of equipment** **Use practical examples which can be referred to – real circuit alongside photo and diagram.**					