

Science Knowledge Progression EYFS – Y6

Planning and sequencing: A sequence of science lessons should be taught (short) termly. Links may be made with global themes but often science will be taught discretely. Planning should be recorded in line with school policy. There should be clear knowledge and skills taught during a unit of work taken from the progression documents below, with objectives linked to the progression grids. Learning objectives should be evidenced in curriculum books. Each sequence should include the following opportunities:

- Engage – what do the children already know and locals/link to interests.
- Explore – common experiences that allow children to ask questions and share vocabulary. This might be a lesson on its own or short lesson starters throughout the unit.
- Explain – teaching of key knowledge and skills. This will likely be several lessons.
- Elaborate – apply their understanding to investigations or unfamiliar contexts.
- Evaluate – What do they know now?

Subject knowledge: Guidance for teachers can be found on the O drive –

- PLAN knowledge matrices
- PLAN examples of work
- Non statutory information in the National Curriculum

Evidencing: The sequence of learning should be evidenced through a range of recording (see PLAN examples of work).

Assessment: Assessment should take place at the end of every *long term in line with school policy*. To make this piece of assessment purposeful we recommend assessing in the moment of the lesson: teachers can use AfL strategies to assess the progress within and across lesson. *This can be recorded against the LO*. TAPS investigations will be used for assessment in each unit.

Useful links:

	<i>EYFS</i>	<i>KS1 National Curriculum Objectives</i>		<i>LKS2 National Curriculum Objectives</i>		<i>UKS2 National Curriculum Objectives</i>	
	<i>Reception children can</i>	<i>Year 1 children can</i>	<i>Year 2 children can</i>	<i>Year 3 children can</i>	<i>Year 4 children can</i>	<i>Year 5 children can</i>	<i>Year 6 children can</i>
<i>Animals including humans</i>	<ul style="list-style-type: none"> • name and describe animals that live in different habitats • describe different habitats • describe people who are familiar to them • Learn about how to take care of themselves. 	<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • describe the simple functions of the basic parts of the digestive system in humans • identify the different types of teeth in humans and their simple functions • construct and interpret a variety of food chains, identifying producers, predators and prey 	<ul style="list-style-type: none"> • describe the changes as humans develop to old age 	<ul style="list-style-type: none"> • 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
<i>Living things and their habitats</i>	<ul style="list-style-type: none"> • explore the plants in the surrounding natural environment • explore the animals in the surrounding natural environment 		<ul style="list-style-type: none"> • 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 		<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird • describe the life process of reproduction in some plants and animals 	<ul style="list-style-type: none"> • describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-

	<ul style="list-style-type: none"> explore plants and animals in contrasting natural environments 		<p>describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other</p> <ul style="list-style-type: none"> identify and name a variety of plants and animals in their habitats, including microhabitats 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 		<ul style="list-style-type: none"> recognise that environments can change and that this can sometimes pose dangers to living things 		<p>organisms, plants and animals</p> <ul style="list-style-type: none"> give reasons for classifying plants and animals based on specific characteristics
<i>Evolution and inheritance</i>							<ul style="list-style-type: none"> 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
<i>Plants</i>		<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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) 			

				<p>and how they vary from plant to plant</p> <ul style="list-style-type: none"> 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 			
<i>Materials</i>	<ul style="list-style-type: none"> explore a range of materials, including natural materials make objects from different materials, including natural materials observe, measure and record how materials change when heated and cooled compare how materials change over time in different conditions 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> compare and group together different kinds of rocks on the basis of their appearance and simple physical properties 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 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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	
<i>Forces</i>	<ul style="list-style-type: none"> • explore how to change how things work • explore how wind can move objects • explore how objects move in water 			<ul style="list-style-type: none"> • compare how things move on different surfaces • notice that some forces need contact between 2 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 2 poles • predict whether 2 magnets will attract or repel each other, depending on which poles are facing 		<ul style="list-style-type: none"> • 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 	
<i>Earth and space</i>	<ul style="list-style-type: none"> • play and explore outside in all seasons and in different weather • observe living things throughout the year • learn about the solar system and stars • learn about space travel 	<ul style="list-style-type: none"> • observe changes across the 4 seasons • observe and describe weather associated with the seasons and how day length varies 				<ul style="list-style-type: none"> • 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 	

<i>Light</i>	<ul style="list-style-type: none"> • explore shadows • explore rainbows 			<ul style="list-style-type: none"> • recognise that they need light 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 their eyes • recognise that shadows are formed when the light from a light source is blocked by an opaque object • find patterns in the way that the size of shadows change 			<ul style="list-style-type: none"> • 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
<i>Sound</i>	<ul style="list-style-type: none"> • listen to sounds outside and identify the source • make sounds 				<ul style="list-style-type: none"> • identify how sounds are made, associating some of them with something vibrating • recognise that vibrations from sounds travel through a medium to the ear • find patterns between the pitch of a sound and features of the object that produced it • find patterns between the volume of a sound and the strength of the vibrations that produced it • recognise that sounds get fainter as the distance from the sound source increases 		
<i>Electricity</i>					<ul style="list-style-type: none"> • 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 		<ul style="list-style-type: none"> • 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

					<ul style="list-style-type: none">• 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		<p>brightness of bulbs, the loudness of buzzers and the on/off position of switches</p> <ul style="list-style-type: none">• use recognised symbols when representing a simple circuit in a diagram
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