

## **Curriculum Milestones- Science**

EYFS	Communication and Language  • Ask relevant questions	Communication and Language • Follow instructions, concentrate		Communication and Language  Think through and extending ideas	Communication and Language  • Understand and answer 'why' questions	Communication and Language  Use and learn new vocabulary, describing events in detail  Articulate thoughts in well- formed sentences	Communication and Language  Use talk to help work out problems and organise thinking and activities and to explain how things work and why they might happen
			V	Working Scientifically			
By the end of Year 2	Pupils should be able to:  Ask simple questions and recognising that they can be answered in different ways	Perform simple tests	Observe closely and use simple equipment	Using observations and ideas to suggest answers to questions	Gather and record data to help in answering questions	Identify and classify	
By the end of Year 4	Pupils should be able to:  • Ask relevant questions and use different types of scientific enquiry to answer them	Set up simple practical enquiries, comparative and fair tests	Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units. Using a range of equipment, including thermometers and data loggers	Gather, record, classify and present data in a variety of ways to help in answering questions     Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions	Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables	Identify different, similarities or changes related to simple scientific ideas and processes     Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions	Use straightforward scientific evidence to answer questions or to support their findings
By the end of Year 6	Pupils should be able to:  • Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary		Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeated readings when appropriate	Use test results to make predictions to set up further comparative and fair tests	Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs and line graphs	Report findings of 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	Identify scientific evidence that has been used to support or refute ideas or arguments
			Understanding the	World and Expressive Art	s and Design		
EYFS	Use all their senses in hands-on exploration of natural materials     Explore collections of materials with similar and/or different properties     Talk about different materials and the changes they notice	Learn ways in which we can care for the environment including animals	Understand key features of the life cycle of an animal	Understand the effect of the changing seasons on the natural world around them	Plant seeds and care for growing plants  Understand key features of the life cycle of a plant	Explore and talk about different forces they feel	Exploring sounds and how they can be changed
	Materials	Animals Including Humans	Living Things And Their Habitats	Light / Earth And Space	Plants	Forces / Electricity	Sound

Year 1	Everyday Materials Pupils should be able to:  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	Pupils should be able to:  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		Seasonal Changes Pupils should be able to:  observe changes across the four seasons observe and describe weather associated with the seasons and how day length varies.	Pupils should be able to:  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	
By the end of Year 2	Uses of Everyday Materials Pupils should be able to:  • 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	Pupils should be able to:  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	Pupils should be able to:  explore and compare the difference 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 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 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		Pupils should be able to:      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	

Year 3	Rocks Pupils should be able to:  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	Pupils should be able to:  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		Light Pupils should be able to:  recognise that they need light in order to see things and that the 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 a solid object  find patterns in the way that the size of shadows changes	Pupils should be able to:  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	Forces Pupils should be able to:	
By the end of Year 4	States of Matter Pupils should be able to:  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	Pupils should be able to:  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	Pupils should be able to:  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			Electricity Pupils should be able to:  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	Pupils should be able to:  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

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	Properties and Changes of	Pupils should be able to:	Pupils should be able to:	Earth and Space	Forces
	Materials	describe the changes as	describe the differences in	Pupils should be able to:	Pupils should be able to:
1	Pupils should be able to:	humans develop to old age	the life cycles of a mammal,	describe the movement of	explain that unsupported
7	<ul> <li>compare and group together</li> </ul>		an amphibian, an insect and	the Earth, and other planets,	objects fall towards the Earth
1	everyday materials on the		a bird	relative to the Sun	because of the force of
1	basis of their properties,		<ul> <li>describe the life process of</li> </ul>	describe the movement of	gravity acting between the
1	including their hardness,		reproduction in some plants	the Moon relative to the	Earth and the falling object
1	solubility, transparency,		and animals	Earth	identify the effects of air
1	conductivity (electrical and			describe the Sun, Earth and	resistance, water resistance
7	thermal), and response to			Moon as approximately	and friction, that act
7	magnets			spherical bodies	between moving surfaces
1	know that some materials			use the idea of the Earth's	recognise that some
1	will dissolve in liquid to form				mechanisms,
1	•			rotation to explain day and	· · · · · · · · · · · · · · · · · · ·
7	a solution, and describe how to recover a substance from			night and the apparent	including levers, pulleys and
7				movement of the sun across	gears, allow a smaller force
	a solution			the sky	to have a greater effect
	use knowledge of solids,				
_ I	liquids and gases to decide				
Year	how mixtures might be				
확	separated, including through				
Ġ	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				
	<ul> <li>demonstrate that dissolving,</li> </ul>				
	mixing and changes of state				
1	are reversible changes				
7	explain that some changes				
1	result in the formation of				
1					
1	new materials, and that this				
1	kind of change is not usually				
/	reversible, including changes				
/	associated with burning and				
	the action of acid on				
	bicarbonate of soda				
	Evolution and Inheritance	Pupils should be able to:	Pupils should be able to:	Light	Electricity
	Pupils should be able to:	identify and name the main	describe how living things are	Pupils should be able to:	Pupils should be able to:
	<ul> <li>recognise that living things</li> </ul>	parts of the human	classified into broad groups	recognise that light appears	associate the brightness of a
	have changed over time and	circulatory system, and	according to	to travel in straight lines	lamp or the volume of a
By the	that fossils provide	describe the functions of the	common observable	use the idea that light travels	buzzer with the number and
$\leq$	information about living	heart, blood vessels and	characteristics and based	in straight lines to explain	voltage of cells used in the
늋ㅣ	things that inhabited the	blood	on similarities and	that objects are seen because	circuit
ro	Earth millions of years ago	<ul> <li>recognise the impact of diet,</li> </ul>	differences, including micro-	they give out or reflect light	compare and give reasons for
end	recognise that living things	exercise, drugs and lifestyle	organisms, plants and	into the eye	variations in how
₫	produce offspring of the	on the way their bodies	animals	explain that we see things	components function,
9	same kind, but normally	function	give reasons for classifying	because light travels from	including the brightness of
<b>⇒</b>	offspring vary and are not	describe the ways in which	plants and animals based on	light sources to our eyes or	bulbs, the loudness of
~ I	identical to their parents	nutrients and water are	specific characteristics	from light sources to objects	buzzers and the on/off
Year	identify how animals and	transported within animals,	opeanie and deterration	and then to our eyes	position of switches
r 6	plants are adapted to suit	including humans			use recognised symbols
٠,	their environment in	including numans		use the idea that light travels     in straight lines, to evaluin	when representing a simple
				in straight lines to explain	, , ,
	different ways and that			why shadows have the same	circuit in a diagram
	adaptation may lead to evolution			shape as the objects that cast	
				them	

N.b due to our mixed-age setting, content is taught over a two-year rolling programme. As such, milestones are designed to be met by the end of each key-stage (KS1, Lower and Upper KS2) and may not always correspond to the year group specified in the National Curriculum.