## Science Progression of Knowledge and Skills

Key to understanding this document: Black = National Curriculum Objectives Blue = Knowledge Red = Skills to be taught Green = Key vocabulary

<u>Area of</u>	EYFS	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>	<u>Year 6</u>
<u>Learning</u>							
Animals	Children at the	Pupils should be taught	Pupils should be taught	Pupils should be taught	Pupils should be taught	Pupils should be taught	Pupils should be taught
Including	expected level of	to: 🔹 identify and name	to: 🔹 notice that	to: 🔹 identify that	to: 🔹 describe the	to: * describe the	to: * identify and name
Humans	development will: -	a variety of common	animals, including	animals, including	simple functions of the	changes as humans	the main parts of the
	Explore the natural	animals including fish,	humans, have offspring	humans, need the right	basic parts of the	develop to old age.	human circulatory
	world around them,	amphibians, reptiles,	which grow into adults	types and amount of	digestive system in	I know how to describe	system, and describe
	making observations	birds and mammals 🌲	* find out about and	nutrition, and that they	humans 🌲 identify the	the changes as humans	the functions of the
	and drawing pictures of	identify and name a	describe the basic	cannot make their own	different types of	develop to old age.	heart, blood vessels
	animals and plants;	variety of common	needs of animals,	food; they get nutrition	teeth in humans and		and blood 🏶 recognise
	Know some similarities	animals that are	including humans, for	from what they eat 🌲	their simple functions		the impact of diet,
	and differences	carnivores, herbivores	survival (water, food	identify that humans	construct and		exercise, drugs and
	between the natural	and omnivores *	and air) * describe the	and some other animals	interpret a variety of		lifestyle on the way
	world around them and	describe and compare	importance for humans	have skeletons and	food chains, identifying		their bodies function *
	contrasting	the structure of a	of exercise, eating the	muscles for support,	producers, predators		describe the ways in
	environments, drawing	variety of common	right amounts of	protection and	and prey.		which nutrients and
	on their experiences	animals (fish,	different types of	movement.	I know how to describe	10	water are transported
	and what has been read	amphibians, reptiles,	food, and hygiene.	I know how to identify	the simple functions of	2	within animals, including
	in class; - Understand	birds and mammals,	I know how to name	that animals, including	the basic parts of the		humans.
	some important	including pets) 🏶	and locate parts of	humans, need the right	digestive system in		I know how to identify
	processes and changes	identify, name, draw	the human body,	types and amount of	humans		and name the main
	in the natural world	and label the basic	including those related	nutrition, and that they	I know how to identify		parts of the human
	around them,	parts of the human	to the senses and	cannot make their own	the different types of		circulatory system, and
	I know that different	body and say which	describe them	food; they get nutrition	teeth in humans and		describe the functions
	animals have different	part of the body is	I know how to	from what they eat	their simple functions		of the heart, blood
	body parts (some have	associated with each	describe the basic	I know how to identify	I know how to		vessels and blood
	no legs, some have lots)	sense.	needs of animals for	that humans and some	construct and interpret		I know how to
	I know that different	I know how to	survival and the main	other animals have	a variety of food		recognise the impact of
	animals like different	describe and compare	changes as offspring	skeletons and muscles	chains, identifying		diet, exercise, drugs
	foods and live in	observable features	from young animals,	for support, protection	producers, predators		and lifestyle on the way
	difference places	of animals from a	including humans, grow	and movement	and prey		their bodies function
	I know that some	range of groups	into adults	1.1			I know how to describe
	animals are big and	I know how to group	I know how to group				the ways in which
	some animals are small	animals according to	animals according to				nutrients and water are
	I know that butterflies	what they eat	what they eat,				transported within
	do not start out looking	I know how to identify	describe how animals				animals, including
	like butterflies	and name a variety of	get their food from				humans
	(undergo	common animals	other animals and/or				
	metamorphosis)	including fish,	plants, and use simple				

I know how to talk	amphibians, reptiles,	food chains to
about different places	mammals and birds	describe these
an animals might live	I know how to identify	relationships
I know that some	and name a variety of	I know how to describe
animals hibernate	common animals that	the importance for
I know that some	are carnivores,	humans of exercise,
animals are adapted to	herbivores and	eating the right
live under the sea and	omnivores	amounts of different
that humans are	I know how to name	types of food, and
adapted to live on land	and locate parts of	hygiene
I know that if I wash	the human body,	I know how to describe
my hands then that will	including those related	the basic needs of
kill off germs	to the senses	animals, including
I know about the	I know how to	humans, for survival
importance of a healthy	describe and compare	(water, food and air)
diet	observable features	I know how to describe
I know I cannot eat	of animals from a	the importance for
unhealthy foods like	range of groups	humans of exercise,
chips and pizza	I know how to describe	eating the right
everyday and I need a	and compare the	amounts of different
variety of food	structure of a variety	types of food, and
I know about the	of common animals	hygiene
importance of a healthy	(fish, amphibians,	I know how to describe
exercise regime	reptiles, birds and	the importance for
I know that exercise is	mammals, including	humans of exercise,
good for my body.	pets)	eating the right
	I know how to identify,	amounts of different
	name, draw and label the basic parts of the	types of food, and
	human body and say	hygiene Resources:
	which part of the body	Photos of stages of life
	is associated with each	- caterpillar, frog etc.
	sense	- caterphiar, mog etc.
	I know how to take	
	care of animals taken	
	from their habitat and	
	understand the need to	
	return them safely to	
	their homes	
	I know how to use the	
	vocabulary and	
	identify: head, neck,	
	arms, elbows, legs,	
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		knees, face, ears, eyes, hair, mouth and teeth					
Key vocabulary	Vocabulary: Health (y), unhealthy, poorly, germs, healthy food, exercise, body, see, smell, taste, touch, hear.	Vocabulary: Humans and animals: Fish, reptile, mammal, amphibian, birds, carnivore, herbivore, omnivore, gill, scales, wings, feathers, senses, smell, taste, touch, hear, see, human body, neck, head, elbows, arms, legs, knees, face, ears, hair, toes, mouth, teeth	Vocabulary: Humans and animals: egg, chick, chicken; egg, caterpillar, pupa, butterfly; spawn, tadpole, frog; lamb, sheep, baby, toddler, child, teenager, adult, elderly, exercise, offspring, hygiene, survival and shelter.	Vocabulary: Humans and animals: Nutrition, skeleton, balanced, muscles, support, protection, movement.	Vocabulary: Humans and animals: Predator, producer, consumer, prey, digestive system, mouth, tongue, teeth, stomach, small intestine, large intestine, rectum anus, carnivores, herbivores, decay, canines, molars.	Vocabulary: Humans and animals: Growth, Puberty, gestation period	Vocabulary: Humans and animals: Diet, exercise, drugs, muscular, digestive system, smoking, caffeine, lungs
Everyday Materials	Children at the	Pupils should be taught	Pupils should be taught			Pupils should be taught	
Materials	expected level of	to: * distinguish	to: * identify and			to: * compare and group together	
	development will: -	between an object and	compare the suitability			everyday materials on	
	Understand some	the material from	of a variety of			the basis of their	
	important processes	which it is made *	everyday materials,			properties, including	
	and changes in the	identify and name a	including wood, metal,			their hardness,	
	natural world around	variety of everyday	plastic, glass, brick,			solubility,	
	them, including the	materials, including	rock, paper and			transparency, conductivity (electrical	
	seasons and changing	wood, plastic, glass,	cardboard for			and thermal), and	
	states of matter.	metal, water, and rock	particular uses * find			response to magnets *	
	I know that objects are	* describe the simple	out how the shapes of			know that some	
	made from different	physical properties of a	solid objects made			materials will dissolve	
	materials	variety of everyday	from some materials			in liquid to form a	
	marchais	materials * compare	can be changed by			solution, and describe how to recover a	
	I know about	and group together a variety of everyday	squashing, bending,			substance from a	
	similarities and	materials on the basis	twisting and stretching.			solution & use	
	differences in relation	of their simple physical	I know how to			knowledge of solids,	
	to places, objects,		distinguish objects			liquids and gases to	
	materials and living	properties.	from materials,			decide how mixtures	
	things	I know how to	describe their			might be separated, including through	
		distinguish objects	properties, identify			filtering, sieving and	
	I know how to about	from materials,	and group everyday			evaporating & give	
	the features of my	describe their	materials and compare			reasons, based on	

		A	
immediate environment	properties, identify	their suitability for	evidence from
and how environments	and group everyday	different uses	comparative and fair
might vary from one	materials		tests, for the
another		I know how to identify	particular uses of
	I know how to	and compare the	everyday materials,
I know how to make	distinguish between an	suitability of a variety	including metals, wood
observations of animals	object and the material	of everyday materials,	and plastic *
and plants and explain	from which it is made	including wood, metal,	demonstrate that
why some things occur,	from which it is made		dissolving, mixing and
and talk about changes	I know how to identify	plastic, glass, brick,	changes of state are
		rock, paper and	reversible changes *
	and name a variety of	cardboard for	explain that some
	everyday materials,	particular uses	changes result in the
	including wood, plastic,		formation of new
	glass, metal, water, and	I know how to describe	materials, and that this kind of change is not
	rock	how the shapes of solid	usually reversible,
		objects made from	including changes
	I know how to describe	some materials can be	associated with burning
	the simple physical	changed by squashing,	and the action of acid
	properties of a variety	bending, twisting and	on bicarbonate of soda.
	of everyday materials	stretching	I know how to compare
	of everyddy marchais	Resources:	and group together
	I know how to compare	House materials -	everyday materials on
		Wood, stick, straw,	the basis of their
	and group together a	stones, etc. Materials	properties, including
	variety of everyday	to bend, stretch, twist.	their hardness,
	materials on the basis		solubility,
	of their simple physical		transparency,
	properties		conductivity (electrical
			and thermal), and
			response to magnets
			I know how to
			recognise that some
			materials will dissolve
			in liquid to form a
			solution, and describe
			how to recover a
			substance from a
			solution
			I know how to use
			knowledge of solids,
			liquids and gases to
			decide how mixtures

				A		
					might be separated,	
					including through	
			11		filtering, sieving and	
					evaporating	
					I know how to give	
					reasons, based on	
					evidence from	
			1 1 -		comparative and fair	
					tests, for the	
					particular uses of	
					everyday materials,	
			11 1		including metals, wood	
					and plastic	
					I know how to	
					demonstrate that	
					dissolving, mixing and	
					changes of state are	
					reversible changes	
					I know how to explain	
					that some changes	
					result in the formation	
		1 6			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	
					Resources:	
					Bicarbonate of soda,	
					white vinegar, candles,	
					triangular burning	
					frames, salt, sugar, ice,	
					chocolate, jelly,	
					balloons, indigestion	
					tablets.	
Key vocabulary	Vocabulary:	Vocabulary: hard/soft;	Vocabulary:		Vocabulary: Hardness,	
	· · · · · · · · · · · · · · · · · · ·	stretchy/stiff;	Squash, bend, stretch,		solubility,	
	Soft, hard, bendy,	shiny/dull;	twist, solid.		transparency,	
	smooth, bumpy,				conductivity, electrical,	
		rough/smooth;			thermal, magnetic,	
		bendy/not bendy;			filtering, sieving,	
		waterproof/not			evaporation, fair test,	

	waterproof; absorbent/not absorbent; opaque/transparent. brick, paper, fabrics, elastic, foil.		dissolving, mixing, reversible change, bicarbonate of soda.	
Light		Pupils should be taugh to: * 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 su can be dangerous and that there are ways the protect their eyes * recognise that shadow are formed when the light from a light source is blocked by a opaque object * find patterns in the way that the size of shadows change. I know how to recognise that he/she needs light in order to see things and that dark is the absence of light I know how to notice that light is reflected from surfaces	er         int         n         ist         ist<	<ul> <li>Pupils should be taught to: * 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.</li> <li>I know how to recognise that light appears to travel in straight lines</li> <li>I know how to use the idea that light travels in straight lines to</li> </ul>
				explain that objects

		 	A.1.	 	
			I know how to		are seen because they
			recognise that light		give out or reflect light
			from the sun can be		into the eye
			dangerous and that		
			there are ways to		I know how to explain
			protect eyes		that we see things
					because light travels
			I know how to find		from light sources to
			patterns in the way		our eyes or from light
			that the size of		sources to objects and
			shadows change		then to our eyes
			I know that it is not		I know how to use the
			safe to look directly at		idea that light travels
			the sun, even when		in straight lines to
			wearing dark glasses		explain why shadows
					have the same shape as
					the objects that cast
					them
Key vocabulary			Vocabulary: Light		Simple comparisons:
			source Opaque		dark, dull, bright, very
			Translucent		bright Comparative
			Transparent Shadow Reflect Protection		vocabulary: brighter, duller, and darker
			Reflect Protection		duller, and darker Superlative vocabulary:
					brightest, dullest, and
					darkest Opaque,
					translucent,
					transparent Shadow -
					block, absence of light
					Reflect - bounce,
					mirror, reflection See
					- light source Sun -
					sunset, sunrise,
Forces and	Children at the		Forces and Magnets:	Forces: Pupils should	position
Magnets	expected level of		Pupils should be taught	be taught to: * explain	
	development will: -		to: * compare how	that unsupported	
	Explore the natural				
			things move on	objects fall towards the Earth because of	
	world around them,		different surfaces *	the Earth decause of	

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making observations. Understand some important processes and changes in the natural world around them,

I know that magnets are 'sticky' without being sticky.

I know magnets stick to certain materials (metals)

I know how to find an object which a magnet will stick to

notice 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. Forces: I know how to compare how things move on different surfaces

I know how to notice that some forces need contact between two objects, but magnetic forces can act at a distance 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.

Forces: I know how to explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object

I know how to identify the effects of air resistance, water resistance and friction, that act between moving surfaces

I know how to recognise that some mechanisms, including levers, pulleys and gears, allow a smaller

I know how to compare	force to have a greater
and group together a	effect.
variety of everyday	
materials on the basis	
of whether they are	
attracted to a magnet,	
and identify some	
magnetic materials	
I know how to describe	
magnets as having two	
poles	
I know how to predict	
whether two magnets	
will attract or repel	
each other, depending	
on which poles are	
facing.	
Magnets:	
I know how to compare	
how things move on	
different surfaces	
I know how to notice	
that some forces need	
contact between two	
objects, but magnetic	
forces can act at a	
distance	
I know how to compare	
and group together a	
variety of everyday	
materials on the basis	
of whether they are	
attracted to a magnet,	

			A			
			and identify some			
			magnetic materials			
			I know how to describe			
			magnets as having two			
			poles.			
Key vocabulary	Vocabulary:		Magnets Vocabulary:		Vocabulary:	
	Magnet, magnetic		Magnetic		gravity, friction, air resistance, upthrust,	
	Magner, magneric		Force		weight Measuring	
			Poles		forces: Newton meter,	
			Repel		Newtons (N) Particles	
			Attract		Surface area Push, pull	
			North		Balance Mass - grams	
			South		and kilograms	
					Mechanical devices -	
			Forces vocabulary:		gears, levers, pulleys,	
			Surface Push		springs	
			Pull			
			friction			
Electricity				Pupils should be taught		Pupils should be taught
				to: * identify common		to: 🜲 associate the
				appliances that run on		brightness of a lamp or
				electricity & construct		the volume of a buzzer
				a simple series		with the number and
				electrical circuit,		voltage of cells used in
				identifying and naming		the circuit & compare
				its basic parts,		and give reasons for
				including cells, wires,		variations in how
				bulbs, switches and		components function,
				buzzers & identify		including the
				whether or not a lamp		brightness of bulbs,
				will light in a simple		the loudness of
				series circuit, based on		buzzers and the on/off
				whether or not the		position of switches 🌲
				lamp is part of a		use recognised symbols
				complete loop with a		when representing a
				battery 🜲 recognise		
				that a switch opens and		

closes a circuit and	simple circuit in a
associate this with	diagram.
whether or not a lamp	<b>T</b> 1
lights in a simple series	I know how to
circuit & recognise	associate the
some common	brightness of a lamp or
conductors and	the volume of a buzzer
insulators, and	with the number and
associate metals with	voltage of cells used in
being good conductors.	the circuit
	<b>T</b> 10 - 1 - 4
I know how to identify	I know how to compare
common appliances that	and give reasons for
run on electricity	variations in how
	components function,
I know how to	including the
construct a simple	brightness of bulbs,
series electrical	the loudness of
circuit, identifying and	buzzers and the on/off
naming its basic parts,	position of switches
including cells, wires,	I know how to use
bulbs, switches and	recognised symbols
buzzers Identify	
whether or not a lamp	when representing a
will light in a simple	simple circuit in a
series circuit, based on	diagram
whether or not the	
lamp is part of a	
complete loop with a	
battery	
I know how to	
recognise that a switch	
opens and closes a	
circuit and associate	
this with whether or	
not a lamp lights in a	
simple series circuit	

			A		
				I know how to	
				recognise some common	
				conductors and	
				insulators, and	
				associate metals with	
				being good conductors	
				55	
Key vocabulary				Vocabulary Magnets:	Vocabulary magnets:
				Bulb Switch Battery	Volts Series circuit
				Light Circuit Insulator	Cell Bulb (lamp) holder,
				Conductor Motor	Buzzer, crocodile clip,
				Electricity	leads, wires, Component
					Resistance Voltage
Seasonal	Children at the	Pupils should be taught			
Changes	expected level of	to: * observe changes			
	development will: -	across the four seasons			
	Understand some	observe and describe			
	important processes	weather associated			
	and changes in the	with the seasons and			
	natural world around	how day length varies.			
	them, including the				
	seasons and changing	I know how to observe			
	states of matter.	and describe changes			
		across the four			
	I know how to identify	seasons			
	that it is Autumn,				
	Winter, Summer and	I know how to observe			
	Spring	and describe weather			
		associated with the			
	I know how to identify	seasons and how day			
	seasonal colours	length varies			
		_			
	I know that lots of new	I know that it is not			
	life begins in the	safe to look directly at			
	Spring time	the sun, even when			
		wearing dark glasses.			
	I know how to choose				
	appropriate clothing	Resources: Class			
	for the seasons	weather charts.			
		iPad/camera Discovery			
		· · · · /			

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		Walk Picture/ video		
		evidence showing the		
		seasons.		
ey vocabulary	Key vocabulary:	Vocabulary Seasonal		
	Spring, Summer,	Change: Seasons		
	Autumn, Winter, snow,	Spring Summer Autumn		
	flower, leaf, night, day,	Winter Weather Day		
	trees, Children at the	Night Change blossom		
Plants		Pupils should be taught	Pupils should be taught	Pupils should be taught
	expected level of	to: * identify and name	to: * observe and	to: * identify and
	development will:	a variety of common	describe how seeds and	describe the functions
	Explore the natural	wild and garden plants,	bulbs grow into mature	of different parts of
	world around them,	including deciduous and	plants * find out and	flowering plants: roots,
	making observations	evergreen trees 🌲	describe how plants	stem/trunk, leaves and
	and drawing pictures of	identify and describe	need water, light and a	flowers * explore the
	animals and plants.	the basic structure of	suitable temperature	requirements of plants
		a variety of common	to grow and stay	for life and growth (air,
	I know that plants need	flowering plants,	healthy.	light, water, nutrients
	sun to grow	including trees.		from soil, and room to
			I know how to	grow) and how they
	I know that plants need	I know how to identify	describe the basic	vary from plant to plant
	water to grow	and name a variety of	needs of plants for	* investigate the way
	<b></b>	common wild and	survival and the	in which water is
	I know that most plants	garden plants, including	impact of changing	transported within
	need soil and nutrients	deciduous and	these and the main	plants & explore the
	to grow	evergreen trees	changes as seeds and	part that flowers play
	Thursday and the sec		bulbs grow into	in the life cycle of
	I know some plants grow from seeds	I know how to identify	mature plants	flowering plants,
	grow from seeds	and describe the basic		including pollination,
		structure of a variety	I know how to observe	seed formation and
		of common flowering	and describe how seeds	
		plants, including trees	and bulbs grow into	seed dispersal.
			mature plants	I know how to identify
		I know how to identify		
		and name a variety of	I know how to find out	and describe the
		common wild and	and describe how	functions of different
		garden plants, including	plants need water, light	parts of flowering
			and a suitable	plants: roots,

		deciduous and	tomponature to ensur	stem/trunk, leaves and			
			temperature to grow				
		evergreen trees	and stay healthy	flowers			
				I know how to explore			
				the requirements of			
				plants for life and			
				growth (air, light,			
				water, nutrients from			
				soil, and room to grow)			
				and how they vary from			
		1.0	11 - 1 march	plant to plant			
				I know how to			
				investigate the way in			
				which water is			
			7	transported within			
				plants			
				piants			
				I know how to explore			
				the part that flowers			
				play in the life cycle of			
				flowering plants,			
				including pollination,			
				seed formation and			
Karana ahulamu	Vocabulary Plants:	Vocabulary Plants:	Vocabulary Plants:	seed dispersal			
Key vocabulary	Vocabulary Plants:	Vocabulary Plants:	Vocabulary Plants:	Vocabulary Plants:			
	Sun, water, soil	Plants: leaves, flowers	bulbs. germination,	Flowering plants,			
	nutrients, seeds.	(blossom), petals, fruit,	reproduction	nutrients, air,			
		roots, bulb, seed,	(questions that	pollination, seed			
		trunk, branches, stem.	recognise growth),	formation, seed			
		in unic, bi unches, stem.	growth, survival	dispersal, life cycle and			
		Deciduous trees		transported.			
		Evergreen trees					
		2.0.9.00.1000					
Living Things	Children at the		Pupils should be taught		Pupils should be taught	Pupils should be taught	Pupils should be taught
and their	expected level of		to: * explore and		to: * recognise that	to: * describe the	to: * describe how
habitat	development will: -		compare the		living things can be	differences in the life	living things are
	Explore the natural		differences between		grouped in a variety of	cycles of a mammal, an	classified into broad
	world around them,		things that are living,		ways & explore and use	amphibian, an insect	groups according to
							g. capo accor ang ro

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.

I know about similarities and differences in relation to living things and their habitats

I know how to talk about the features of my own immediate environment and how environments might vary from one another

I know how to make observations of animals and plants and explain why some things occur, and talk about changes. 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 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.

I know how to identify whether things are alive, dead or have never lived

I know how to explore and compare the differences between things that are living, dead, and things that have never been alive 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

## I know how to

recognise that living things can be grouped in a variety of ways

I know how to explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment

I know how to recognise that environments can change and that this can sometimes pose dangers and have an impact on living things and a bird \* describe the life process of reproduction in some plants and animals.

I know how to describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird

I know how to describe the life process of reproduction in some plants and animals common observable characteristics and based on similarities and differences, including microorganisms, plants and animals & give reasons for classifying plants and animals based on specific characteristics.

I know how to 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

I know how to give reasons for classifying plants and animals based on specific characteristics

Key vocabulary	Vocabulary: Living things, habitat, environment, animals, plants.	A nat or ho	bulary: Habitat: rural environment me of a variety of s and animals	Vocabulary: Classification Flowering plants Non -flowering plants Vertebrates Invertebrates Pollution	Vocabulary: Reproduction, Pollination Stigma Ovary Anther Stamen carpel Mammal, Amphibian Insect Bird	Vocabulary: Microorganism Classification Key Children will develop vocabulary through own research.
		differ anima how t to dif I know that n live in they of descr habits the b differ anima how t each of I know and n plants their includ habits their	w how to identify ame a variety of s and animals in habitats, ding micro- ats w how to describe animals obtain food from plants ther animals, using dea of a simple chain, and identify ame different tes of food			

		Micro-habitat: A very			
		small habitat, for			
		example for woodlice			
		under stones, logs or			
		leaf litter			
		Dead Alive Habitat Micro -habitat Food			
		chain Seashore			
		Woodland Ocean			
		rainforest			
Rocks			Pupils should be taught		
			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.		
			I know how to compare		
			and group together		
			different kinds of		
			rocks on the basis of		
			their appearance and		
			simple physical		
			properties		
			proper rice		
			I know how to describe		
			in simple terms how		
			fossils are formed		
			when things that have		

		A		
		lived are trapped within		
		rock		
		I know how to		
		recognise that soils are		
		made from rocks and		
		organic matter.		
Key vocabulary		Vocabulary Rocks:		
		Rock, soil, fossil		
		,sedimentary		
		metamorphic igneous		
		permeable impermeable		
		appearance soft hard		
		crystal rock formation		
		mineral		
Sound			Pupils should be taught	
			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	
			<ul> <li>find patterns</li> </ul>	
			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.	
			sound source increases.	

	I know how to identify	
	how sounds are made,	
	associating some of	
	them with something	
	vibrating	
	vibrating	
	I know how to	
	recognise that	
	vibrations from sounds	
	travel through a	
	medium to the ear	
	medium to the edi	
	I know how to find	
	patterns between the	
	pitch of a sound and	
	features of the object	
	that produced it	
	That produced IT	
	I know how to find	
	patterns between the	
	volume of a sound and	
	the strength of the	
	vibrations that	
	produced it	
	I know how to	
	recognise that sounds get fainter as the	
	distance from the	
	sound source increases	
Key	Sound vocabulary:	
vocabulary:	Pitch Sound vibrations	
	Volume Medium Faint	
	Insulator	
States of	Pupils should be taught	
Matter	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.	
			I know how to compare	
			and group materials	
			together, according to	
			whether they are	
			solids, liquids or gases	
			I know how to 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)	
			I know how to identify	
			the part played by	
			evaporation and	
			condensation in the	
			water cycle and	
			associate the rate of	
			evaporation with	
			temperature	
Key			States of matter	
Vocabulary:			vocabulary: States of	
vocabulary.			matter Liquid Solid Gas	
			Evaporation	
			Condensation Water	
			cycle Particles Freeze	
			Melt	

Earth and		Pupils should be taught	
Space		to: * 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 know how to describe	
		the movement of the	
		Earth, and other	
		planets, relative to the	
		Sun in the solar system	
		I know how to describe	
		the movement of the	
		Moon relative to the	
		Earth	
		I know how to describe	
		the Sun, Earth and	
		Moon as approximately	
		spherical bodies	
		I know how to use the	
		idea of the Earth's	
		rotation to explain day	
		and night and the	

apparent movement of	
the sun across the sky	
I know that the Sun is	
a star at the centre of	
our solar system and	
that it has eight	
planets: Mercury,	
Venus, Earth, Mars,	
Jupiter, Saturn, Uranus	
and Neptune (Pluto was	
reclassified as a 'dwarf	
planet' in 2006).	
I know that a moon is a	
celestial body that	
orbits a planet (Earth	
has one moon; Jupiter	
has four large moons	
and numerous smaller	
ones).	
Key vocabulary     Earth and space	
vocabulary:	
Day and night - Earth,	
axis, rotate Solar	
system - Star, Sun,	
Planets, Mercury,	
Venus, Earth, Mars, Jupiter, Saturn,	
Uranus, Neptune (Pluto	
was classified as Dwarf	
planet in 2006) Phases	
of the Moon - full	
moon, gibbous moon,	
half moon, crescent	
moon, new moon, waxing	
,waning Moon's orbit:	

Evaluation and				Pupils should be taught
Inheritance				to: * 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 know how to
				recognise that living
				things have changed
				over time and that
				fossils provide
				information about living
				things that inhabited
				the Earth millions of
				years ago
				I know how to
				recognise that living
				things produce
				offspring of the same
				kind, but normally
				offspring vary and are
				or spring vary and are

	A		
			not identical to their
			parents
			I know how to identify
			how animals and plants
			are adapted to suit
			their environment in
			different ways and
			that adaptation may
			lead to evolution
Key			Evolution and
vocabulary:			inheritance
			vocabulary:
			Evolution, inheritance,
			animals, nutrition, reproduce, excrete,
			respiration, sensitivity,
			environment, Mrs Nerg
			/ Mrs Gren, adaptation,
			Charles Darwin.
Famous	Pupils might find out	They should find out	Pupils might find out
Scientistc	about people who have	about the work of	about the significance
	developed useful new	naturalists and animal	of the work of
	materials, for example		
	John Dunlop, Charles	behaviourists, for	scientists such as Carl
	Macintosh or John	example, David	Linnaeus, a pioneer of
	McAdam.	Attenborough and Jane	classification
		Goodall	
			Pupils might find out
		They should find out	about the work of
		about how chemists	palaeontologists such
		create new materials,	as Mary Anning and about how Charles
		for example, Spencer	Darwin and Alfred
		Silver, who invented	Wallace developed
		the glue for sticky	their ideas on
		notes or Ruth Benerito,	evolution.
		who invented wrinkle-	
		free cotton.	
		Pupils should find out	
		about the way that	
		ideas about the solar	

				system have developed, understanding how the geocentric model of the solar system gave way to the heliocentric model by considering the work of scientists
				such as Ptolemy, Alhazen and Copernicus. Pupils might find out how scientists, for example, Galileo Galilei
				and Isaac Newton helped to develop the theory of gravitation.
		Working scient	ifically progression	
National Curriculum Objectives	Throughout the EYFS the three characteristics of effective teaching and learning are: • playing and exploring -	During years 1 and 2, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:	During years 3 and 4, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:	During years 5 and 6, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content: <ul> <li>planning different types of scientific</li> </ul>
	children investigate		V	enquiries to answer questions, including

	and experience things, and 'have a go' • active learning - children concentrate and keep on trying if they encounter difficulties, and enjoy achievements • creating and thinking critically - children have and develop their own ideas, make links between ideas, and develop strategies for doing things	<ul> <li>they can be answered</li> <li>observing closely, usin</li> <li>performing simple test</li> <li>identifying and classi</li> </ul>	ng simple equipment sts fying ons and ideas to suggest	<ul> <li>types of scientific er</li> <li>setting up simple pracomparative and fair</li> <li>making systematic an and, where appropriate measurements using strange of equipment, it and data loggers</li> <li>gathering, recording, presenting data in a vanswering questions</li> <li>recording findings us language, drawings, labar charts, and table</li> <li>reporting on findings oral and written explores of results to draw predictions for new vimprovements and raited to si processes</li> <li>using straightforward</li> </ul>	tests d careful observations te, taking accurate standard units, using a ncluding thermometers classifying and variety of ways to help in ing simple scientific abelled diagrams, keys, s from enquiries, including anations, displays or ults and conclusions simple conclusions, make values, suggest ise further questions	<ul> <li>necessary</li> <li>taking measurements scientific equipment, and precision, taking appropriate</li> <li>recording data and re complexity using scie labels, classification graphs, bar and line g</li> <li>using test results to up further comparation reporting and presen enquiries, including con- relationships and exp of trust in results, in such as displays and a</li> <li>identifying scientific</li> </ul>	with increasing accuracy repeat readings when esults of increasing antific diagrams and keys, tables, scatter graphs make predictions to set ive and fair tests ting findings from onclusions, causal planations of and a degree oral and written forms
Skills progression Five types of experimental skills 1. Observe over time 2. Pattern seeking 3.Identifying, classifying and grouping	<ol> <li>I can observe changes over time</li> <li>I can observe changes and patterns</li> <li>I can identify and classify</li> <li>I can perform simple tests</li> <li>I can perform a fair</li> <li>test with adult support</li> </ol>	<ol> <li>I can observe changes over time</li> <li>I can observe changes and patterns</li> <li>I can identify and classify</li> <li>I can perform simple tests</li> <li>I can perform a fair</li> <li>test with adult support</li> </ol>	<ol> <li>I can use simple equipment to observe closely including changes over time</li> <li>I can use</li> <li>observations and ideas to suggest answers to questions noticing similarities, differences and patterns</li> <li>I can identify, group and classify</li> </ol>	<ol> <li>I can make systematic and careful observations over time</li> <li>I can ask questions surrounding patterns I have found in data.</li> <li>I can gather, record, classify and present data in a variety of ways</li> <li>I can set up simple practical enquiries,</li> </ol>	<ol> <li>I can make systematic and careful observations over time, looking at similarities and differences.</li> <li>I can ask questions surrounding patterns I have found in data.</li> <li>I can gather, record, classify and present data in a variety of ways to help in answering questions</li> </ol>	<ol> <li>I can observe over time, asking pertinent questions about similarities and differences.</li> <li>I can ask questions surrounding patterns I have found in data as to why something I have observed has happened.</li> <li>I can classify, group and present data in a</li> </ol>	1. I can recognise things change over time, and can ask pertinent questions and suggest reasons for similarities and differences over time 2. I can ask questions surrounding patterns I have found in data as to why something I have observed has happened.

4. Comparative and Fair test 5. Research using secondary sources			<ul> <li>4. I can perform simple comparative tests</li> <li>5. I can gather and record data to help in answering questions including from secondary sources of information</li> </ul>	comparative and fair tests 5. I can use secondary sources with adult support to help clarify results seen.	<ul> <li>4. I can set up simple practical enquiries, comparative and fair tests</li> <li>5. I can use secondary sources with adult support to help clarify results seen.</li> </ul>	series of ways to help in answering questions 4. I can take measurements, using a range of scientific equipment, with increasing accuracy and precision. 5. I can use secondary sources to help interpret results seen.	<ul> <li>3.I can develop and use keys and other information to classify and describe objects in ways to help answer questions</li> <li>4. I can take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate</li> <li>5. I can use secondary sources to help interpret results seen.</li> </ul>
Questions	I can ask simple questions	I can ask simple questions and recognise that they can be answered in different ways I can use my observations and ideas to suggest answers to questions I can communicate my ideas, what I can do and what I can find out in different ways	I can ask simple questions and recognise that they can be answered in different ways including use of scientific language from the national curriculum I can communicate my ideas, what I can do and what I can find out in different ways	I can ask relevant questions to answer my questions in different ways using scientific language from the national curriculum. I can ask questions surrounding patterns I have found in data.	I can ask relevant questions and use different types of scientific enquiries to answer them using scientific language from the national curriculum I can ask questions surrounding patterns I have found in data. I can develop a deeper understanding through talk, asking questions about scientific phenomena, analysing functions and interactions more systematically.	I can plan different types of scientific enquiries to answer questions, including recognising variables where necessary I can ask questions surrounding patterns I have found in data as to why something I have observed has happened. I can observe over time, asking pertinent questions about similarities and differences.	I can plan different types of scientific enquiries to answer my own or others' questions, including recognising and controlling variables where necessary I can recognise things change over time, and can ask pertinent questions and suggest reasons for similarities and differences over time

				-			
Using Scientific equipment	I can use magnifying glasses to look at objects in more detail I can measure out ingredients using scientific and mathematic equipment	I can use simple equipment to observe closely I can use hand lenses and egg timers	I can use simple equipment to observe closely including changes over time I can ask my own questions about what I notice I can use hand lenses and egg timers	I can set up simple practical enquiries, comparative and fair tests I can make systematic and careful observations over time I can take measurements using standard units, using a range of equipment. I can set up simple practical enquiries, comparative and fair tests	I can set up simple practical enquiries, comparative and fair tests. I can take measurements, using a range of scientific equipment, with increasing accuracy and precision.	I can make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers	I can take measurements, using a range of scientific equipment, including thermometers and data loggers, with increasing accuracy and precision, taking repeat readings when appropriate I can make my own decisions and select the most appropriate type of scientific enquiry to use and recognise how to set up a comparative and fair test.
Recording data	I can record observations in ways that are important and meaningful to me.	I can gather and record data to help in answering questions I can use simple scientific language such as: with help	I can gather and record data to help in answering questions including from secondary sources of information	I can gather, record, classify and present data in a variety of ways. I can record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables	I can gather, record, classify and present data in a variety of ways to help in answering questions. I can record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables	I can record data and results using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs I can use test results to set up further comparative and fair tests	I can record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs I can use test results to make predictions to set up further comparative and fair tests
Reporting on findings				I can report on findings from enquiries, using presentations of results and conclusions I can use results to	I can report on findings from enquiries, including oral and written explanations, displays or presentations of	I can report and present findings from enquiries in oral and written forms such as displays and other presentations.	I can report and present findings from enquiries, including conclusions, causal relationships and explanations of and

			A	1		
			draw simple	results and conclusions	I can use results to	degree of trust in
		· · /	conclusions.	I can use results to	draw more complex	results, in oral and
				draw simple	conclusions, make	written forms such as
			I can use secondary	conclusions, make	predictions for new	displays and other
			sources with adult support to help clarify	predictions for new	values and suggest	presentations
			results seen.	values and suggest	improvements.	
			resurts seen.	improvements.		I can use results to
					I can use secondary	draw more complex
				I can use secondary	sources to help	conclusions, make
				sources with adult	interpret results seen.	predictions for new
				support to help clarify		values and suggest
				results seen.	I can classify, group	improvements and raise
					and present data in a	further questions.
				I can classify, group	series of ways to help	
		1 7		and present data in a	in answering questions	I can use secondary
				series of ways to help		sources to help
				in answering questions		interpret results seen.
					S	I can develop and use
						keys and other
						information to classify
						and describe objects in
						ways to help answer
						questions.
Using scientific			I can identify	I can identify	I can identify scientific	I can justify and
evidence			differences,	differences,	evidence that has been	evaluate my own and
			similarities or changes	similarities or changes	used to support or	other people's
	1.0		related to simple	related to simple	refute ideas or	scientific ideas related
			scientific ideas and processes	scientific ideas and processes	arguments	to topics in the national
			I can use	I can use		curriculum (including
			straightforward	straightforward		ideas that have
			scientific evidence to	scientific evidence to		changed over time),
			answer questions or to	answer questions or to		using evidence from a
			support my findings	support my findings		range of sources
						range of sources
			And and a second se		1	