

Science- Progression Map



totherfield	2-Year- Olds/ Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Plants	3-4 Plant seeds and care for growing plants. Understand the key features of the life cycle of a plant.	ELG: Explore the natural world around them, making observations and drawing pictures of plants.	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.	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.	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.			
Vocabular Y	plant grow change flower season tree		deciduous evergreen stem roots leaf petal	bulbs nutrients require germination	blossom fertiliser transported lifecycle pollination seed formation			

	soil		seed		seed dispersal			
	sunlight		branches					
	bean		trunk					
	seed		flower					
			soil					
Animals,	<u>0-3</u>	Talk about	Identify and	Notice that	Identify that	Describe the	Describe the	Identify and
including	Make	members of	name a variety	animals,	animals,	simple functions	changes as	name the main
humans	connections	their immediate	of common	including	including	of the basic	humans develop	parts of the
numans	between the	family and	animals	humans, have	humans, need	parts of the	to old age.	human
	features of their	community.	including fish,	offspring which	the right types	digestive		circulatory
	family and		amphibians,	grow into	and amount of	system in		system, and describe the
	other families.	Name and	reptiles, birds	adults.	nutrition, and	humans.		functions of the
		describe people	and mammals.	Find out about	that they cannot make their own	Identify the		heart, blood
	Notice	who are familiar	Identify and	and describe	food; they get	different types		vessels and
	differences	to them.	name a variety	the basic needs	nutrition from	of teeth in		blood.
	between		of common	of animals,	what they eat.	humans and		51000.
	people.	<u>ELG</u>	animals that are	including	what they call	their simple		Recognise the
		Explore the	carnivores,	humans, for	Identify that	functions.		impact of diet,
	<u>3-4</u>	natural world	herbivores and	survival (water,	humans and			exercise, drugs
	Understand the	around them,	omnivores.	food and air).	some other	Construct and		and lifestyle on
	key features of	making			animals have	interpret a		the way their
	the life cycle of	observations and	Describe and	Describe the	skeletons and	variety of food		bodies function.
	an animal.	drawing pictures	compare the	importance for	muscles for	chains,		
		of animals and	structure of a	humans of	support,	identifying		Describe the
	Continue	humans.	variety of	exercise, eating	protection and	producers,		ways in which
	developing	Know some	common	the right	movement.	predators and		nutrients and
	positive	similarities and	animals (fish,	amounts of		prey.		water are
	attitudes about	differences	amphibians,	different types				transported
	the differences	between the	reptiles, birds	of food, and				within animals,
	between	natural world	and mammals	hygiene.				including
	people.	around them	including pets).					humans.
	I I	and contrasting	Identify, name,					
	Know that there	environments,	draw and label					
	are different	drawing on their	the basic parts					
	countries in the	experiences and	of the human					
	world and talk	what has been	body and say					
	about the	read in class.	which part of					
	differences they		the body is					
	have	Manage their	associated with					
	experienced or	own basic	each sense.					
	seen in photos.	hygiene and						
		personal needs,						
		including						
		dressing, going						
		to the toilet and						
		understanding						
		the importance						

		of healthy food choices.						
Vocabular y	lifecycle animal human health exercise diet bones senses touch smell hear taste see		amphibian reptiles mammals carnivore herbivore omnivore senses	hygiene healthy offspring male female birth growth balanced diet predator producer prey food chain consumer energy	nutrition carbohydrates dairy protein vitamin mineral fibre skeleton muscles movement skull ribs spine vertebrate invertebrate joint socket tendon	oesophagus small intestine large intestine rectum anus absorb digest plaque canine molar incisor premolar digestive system saliva enzymes		circulatory system blood vessel artery capillary vein carbon dioxide
Everyday materials	 0-3 Explore materials with different properties. Explore natural materials, indoors and outside. Explore different materials, using all their senses to investigate them. Manipulate and play with different materials. Use their imagination as they consider what they can do with	ELG Explore the natural world around them, making observations.	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	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.		See Y4 States of Matter	Classify materials according to various properties including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets. Test the effectiveness of a given material. Know different ways of separating materials. Separate mixtures of materials using filtering, sieving	

	lifferent	simple physical	and
n	naterials.	properties.	evaporating.
U s h e n	5-4 Use all their enses in hands-on exploration of hatural materials.		
c n s d	Explore collections of naterials with imilar and/or lifferent properties.		
tl	Talk about what hey see, using wide rocabulary.		
d n fr d ic h t	Explore lifferent naterials reely, to levelop their deas about now to use hem and what o make.		
o ti w to	Develop their own ideas and hen decide vhich materials o use to express them.		
n e d	oin different naterials and explore lifferent extures.		

	wood		wood	dull			
Vocabular	wood		wood	dull			
V	plastic		plastic	shiny			
У	metal		metal	waterproof			
	material		material	absorbent			
	hard		hard	opaque			
	soft		soft				
				transparent			
	bend		bendy	brittle			
	rough		rough	durable			
	smooth		smooth	suitable			
	waterproof		rigid	natural			
	strong		ligia	manmade			
				manmade			
	brick						
	straw						
	sticks						
Rocks		Describe what	Distinguish	Identify and	Compare and		
NUCKS		they see, hear	between an	compare the	group together		
		and feel whilst	object and the	suitability of a	different kinds		
		outside.	material from	variety of	of rocks on the		
			which it is	everyday	basis of their		
		ELG	made. (Y1 -	materials,	appearance and		
		Explore the	Everyday	including wood,	simple physical		
		natural world	materials).	metal, plastic,	properties.		
			materials).		properties.		
		around them,		glass, brick,	_		
		making	Identify and	rock, paper and	Describe in		
		observations.	name a variety	cardboard for	simple terms		
			of everyday	particular uses.	how fossils are		
			materials,	(Y2 - Uses of	formed when		
			including wood,	everyday	things that have		
			plastic, glass,	materials).	lived are		
			metal, water,		trapped within		
			and rock. (Y1 -		rock.		
			Everyday				
			materials).		Recognise that		
			materials).				
			_		soils are made		
			Describe the		from rocks and		
			simple physical		organic matter.		
			properties of a		-		
			variety of				
			everyday				
			materials. (Y1 -				
			Everyday				
			materials).				
			Compare and				
			Compare and				
			group together				
			a variety of				
			everyday				
			materials on the				
			basis of their				

						1 1
		simple physical				
		properties. (Y1 -				
		Everyday				
		materials).				
Vocabular		See Materials.	See Materials.	fossil		
		See Materials.	See Materials.	sediment		
y I						
,				grain		
				crystal		
				permeable		
				impermeable		
				sedimentary		
				igneous		
				metamorphic		
				marble		
				chalk		
				granite		
				sandstone		
				slate		
				clay		
				peat		
	Linderstand the	Observe		pear		
Seasonal	Understand the	Observe				
changes	effect of	changes across				
enanges	changing	the 4 seasons.				
	seasons on the					
	natural world	Observe and				
	around them.	describe				
		weather				
	Describe what	associated with				
	they see, hear	the seasons and				
	and feel whilst	how day length				
	outside.	varies.				
	ELG					
	Understand					
	some important					
	processes and					
	changes in the					
	natural world					
	around them,					
	including the					
	seasons.					
	Explore the					
	natural world					
	around them,					
	making					
	observations.					
	Know some					
I		1	1	1	 1	

		a final fill a set fill		1			
		similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class.					
Vocabular	season		season				
У	Spring Summer Autumn Winter grow change leaves observe question rain wind snow storm weather sunshine warm cold freezing		Spring Summer Autumn Winter grow leaves ice				
	<u>0-3</u>	Explore the		Explore and	Pocognico that	Describe the	Describe how
Living	Explore and	Explore the natural world		Explore and compare the	Recognise that living things can	differences in	living things are
things and	respond to	around them.		differences	be grouped in a	the life cycles of	classified into
their	different			between things	variety of ways.	a mammal, an	broad groups
habitats	natural	Describe what		that are living,		amphibian, an	according to
napicats	phenomena in	they see, hear		dead, and	Explore and use	insect and a	common
	their setting	and feel whilst		things that have	classification	bird.	observable
	and on trips.	outside.		never been	keys to help		characteristics
		outside.		alive.	group, identify	Describe the life	and based on
	<u>3-4</u>	Recognise some		Idoptify that	and name a	process of	similarities and
	Begin to understand the	environments		Identify that most living	variety of living things in their	reproduction in some plants and	differences, including micro-
	need to respect	that are different		things live in	local and wider	animals.	organisms,
	and care for the	from the one in		habitats to	environment.		plants and
	natural	which they live.		which they are			animals.
	environment			suited and	Recognise that		
	and all living	<u>ELG</u>		describe how	environments		Give reasons for
	things.	Understand		different	can change and		classifying
		some important		habitats provide	that this can		plants and

Vocabular y	Habitat Home Jungle Forest Sea	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.	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. Habitat Micro-habitat Woodland Seashore Life cycle		Vertebrate Invertebrate Mammal Amphibian Reptile	Sexual Asexual Stamen Stigma Plantlet	Characteristics Micro organism
Light	Animal Wood	Describe what they see, hear and feel whilst outside.	Reproduction Survival Offspring Produce Healthy Unhealthy	-recognise that they need light in order to see things and that dark is the	Classification Key Protection Shelter	Runners Pollen Ovaries	-recognise that light appears to travel in straight lines -use the idea

Vocabular y	Light Dark Shadow Torch Reflection Diwali Rama Sita	Explore the natural world around them, making observations. Understand some important processes and changes in the natural world around them.		 -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 Light source Reflect Reflective Rays Opaque Transparent Translucent 		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 Absorb Beam
Forces and magnets	3-4 Explore and talk about different forces they can feel.	Describe what they see, hear and feel whilst outside. Explore the natural world around them,		Compare how things move on different surfaces. Notice that some forces need contact between 2 objects, but	Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.	

making	magnetic forces	
observations.	can act at a	Identify the
observations.	distance.	effects of air
	distance.	resistance,
	Observe how	water resistance
	magnets attract	and friction,
	or repel each	that act
	other and	between
	attract some	moving
	materials and	surfaces.
	not others.	
		Recognise that
	Compare and	some
	group together	mechanisms
	a variety of	including levers,
	everyday	pulleys and
	materials on the	gears allow a
	basis of whether	smaller force to
	they are	have a greater
	attracted to a	effect.
	magnet, and	
	identify some	
	magnetic	
	materials.	
	materiais.	
	Describe	
	magnets as	
	having 2 poles.	
	Dradiet whether	
	Predict whether	
	2 magnets will	
	attract or repel	
	each other,	
	depending on	
	which poles are	
	facing.	

Vocabular y	Push Pull Stop Go Turn Twist Why What How	Attract Repel Magnetic Not magnetic Magnetic field Iron Steel		Friction Gravity Air resistance Lever Pulley Water resistance Mass Mechanism	
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		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.

	-	1	T	T			
					sim circ Rec com con	cognise some nmon iductors and	
					asso met beir	ulators, and ociate tals with ng good	
Vocabular y	Light Dark Torch On Off Switch Battery				App Dev Mai Circ Con Cell Batt Posi Neg Con Wire Cro Bull Swit Buz Mot Con Insu	ins cuit mponent l tery sitive gative nection re pcodile clip b tch zzer	Circuit diagram Circuit symbol Voltage Current Terminal
States of Matter	3-4 Talk about the differences between materials and changes they notice.	Understand some important processes and changes in the natural world around them, including changing states of matter.	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	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	grou toge acco whe are liqu Obs som cha whe hea cool mea rese	mpare and up materials ether, ording to ether they solids, uids or gases. serve that ne materials onge state en they are ated or oled, and asure or earch the operature at	

			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. Y1 Everyday Materials	some materials can be changed by squashing, bending, twisting and stretching. Y2 - Uses of everyday materials	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.	
Vocabular y	Hard Soft Water Ice Solid Bubble Oil Mixture Investigate Explore Ask Question Why Melt Rain Snow				State Matter Solid/liquid/gas Air Oxygen Water vapour Steam Temperature Degrees Celsius Solidify Evaporate Condense Water cycle Precipitation Infiltration	
Sound	0-3 Explore their voices and enjoy making sounds. Make rhythmical and repetitive sounds. Explore a range	Describe what they hear whilst outside. Explore the natural world around them, making observations.	Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. (Y1 - Animals, including humans)		Identify how sounds are made, associating some of them with something vibrating. Recognise that vibrations from sounds travel through a medium to the	

	of sound				ear.		
	makers and						
	instruments				Find patterns		
	and play them				between the		
	in different				pitch of a sound		
					and features of		
	ways.				the object that		
					produced it.		
	<u>3-4</u>				produced ic.		
	Sing the pitch				Electronic the second		
	of a tone sung				Find patterns		
	by another				between the		
	person ('pitch				volume of a		
	match').				sound and the		
					strength of the		
	Sing the				vibrations that		
	melodic shape				produced it.		
	(moving				Recognise that		
					sounds get		
	melody, such as				fainter as the		
	up and down,				distance from		
	down and up)				the sound		
	of familiar				source		
	songs.				increases.		
	Play						
	instruments						
	with increasing						
	control to						
	express their						
	feelings and						
	ideas.						
Vocabular	5 senses				Source		
	Hear				Vibrate		
У	Loud				Vibration		
	Soft				Travel		
	Scream				Solid/liquid/gas		
	Music				Pitch		
	Beat				Volume		
	Sound				Insulation		
	Sound				Percussion		
					Faint		
Earth and		See Seasonal	Observe			Describe the	
		Changes.	changes across			movement of	
	1						

Space		the four seasons. Observe and describe weather associated with the seasons and how day length varies. (Y1 - Seasonal changes)				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.	
Vocabular y	See Seasonal Changes.					Earth Planet Solar system Celestial body Rotation Mercury Venus Mars Jupiter Saturn Uranus Neptune Pluto Dwarf planet Orbit	
Evolution (Also see Year 3			ldentify that most living things live in habitats to	Describe in simple terms how fossils are formed when	Recognise that environments can change and that this can		Recognise that living things have changed over time and

Rocks and all Animals and Humans and Living Things and their Habitats)	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. (Y2 - Living things and their habitats)	things that have lived are trapped within rock. (Y3 - Rocks)	sometimes pose dangers to living things. (Y4 - Living things and their habitats)	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.
Vocabular y				Evolution Inherit Inheritance Adapt Adaptation Offspring Variation Characteristic Palaeontologist Excavate Suited Environment

Working Scientifically See ASE Plan Working Scientifically Matrixes

Questionin	<u>0-3</u> I can	I can ask questions to find	I can ask simple questions about the world around me.	I can ask relevant questions about my science topic.	I can ask a range of questions about my science topic and the
g	understand simple questions about 'who', 'what' and 'where' (but generally not 'why'). (C&L) 3-4 I can understand why questions such as, 'Why do you think the caterpillar got fat?' (C&L)	questions to find out more and to check I understand what has been said to me. (C&L) ELG I can make comments about what they have heard and ask questions to clarify my understanding. (C&L)	the world around me.	my science topic.	world around me.
Planning	3-4 I can choose the right resources to carry out my own plan. For example, choosing a spade to enlarge a small hole I have dug with a trowel.	I can use talk to help work out problems and organise thinking and activities, and to explain how things work and why they might happen. (C&L)	I can suggest how I can investigate to find the answer. I can compare simple features of objects, materials and living things and, with help, decide how to sort and group them. I can observe changes over time With help, I can perform simple tests and begin to notice how things are linked. I can use books and simple	I can begin to decide what kind of scientific enquiry I could use to find the answer: observing changes over time, noticing patterns, grouping and classifying things, carrying out a fair test, or using secondary sources. I can decide when to investigate using a fair test. I can decide what criteria to use to group, sort and classify objects or events.	I know when and how to set up comparative and fair tests and can explain which variables need to be controlled and why. I can measure and record changes over time. I can use and develop keys and other information records to identify, classify and describe living things and their materials.
			electronic media to find things out.	events.	I can identify patterns that are found in the natural environment.

				I can use simple keys.	
				I can begin to look for patterns and relationships and decide what data to collect to identify them. I can decide what to observe. I can information sources to find the information I need.	I can decide when to use a wide range of secondary sources to find the answers to questions and begin to separate opinion from fact. I can make predictions and hypotheses.
				I can make predictions.	
Obtaining Evidence	 0-3 I can repeat actions that have an effect. 3-4 I can explore how things work. I can use talk to organise themselves and their play: "Let's go on a bus you sit there I'll be the driver. (C&L) I can select and use activities and resources, with help when needed. This helps them to achieve a goal they have chosen, or one which is suggested to them. (PSED) I can play with one or more other children, 1000 	I can articulate my ideas and thoughts in well- formed sentences. (C&L) I can create collaboratively, sharing ideas, resources and skills. (EAD) I can how resilience and perseverance in the face of challenge. (PSED)	I can use simple measurements and equipment (for example, hand lenses, egg timers) to collect data and carry out simple tests. I can observe closely.	I can take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. I can help to make decisions about what observations to make, how long to make them for and the type of simple equipment that might be used. I can make systematic and careful observations.	I can choose the most appropriate equipment to make measurements and explain how to use it accurately. I can take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. I can make my own decisions about what observations to make, what measurements to use and how long to make them for, and whether to repeat them.

	extending and elaborating play ideas. (PSED)				
Presenting Evidence	3-4 I can use a wider range of vocabulary. (C&L) I can use longer sentences of four to six words. I can express a point of view and to debate when they disagree with an adult or a friend, using words as well as actions. (C&L)	I can learn new vocabulary. (C&L) I can use new vocabulary through the day. (C&L) I can describe events in some detail. (C&L) I can use talk to help work out problems and organise thinking and activities, and to explain how things work and why they might happen. (C&L) I can use new vocabulary in different contexts. (C&L) ELG I can participate in small group, class and one-to- one discussions, offering their own ideas, using recently introduced vocabulary.	I can use and record simple data I can talk about what I have found out and how I found it out. I can record in words or pictures, or in simple prepare formats such as tables and tally charts.	I can gather, record, classify and present data in a variety of ways to help in answering questions. I can use and spell appropriate scientific language. I can record findings using drawings, labelled diagrams, keys, bar charts, and tables. I can present my results in different ways, including oral and written explanations, displays or presentations of results and conclusions.	I can record data and results using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. I can decide how to record data from a choice of familiar approaches.
Considerin g evidence and		l can connect one idea or action to another using a range of		I can use my results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.	I can look for different causal relationships in my data and identify evidence that refutes or supports my ideas.

evaluating connectives. (C&L) Lean identify differences, similaries or changes related to help work out organise and processes. Lean identify differences, similaries or changes related to processes. Lean use my results to identify when further tests and observations might be needed. Lean use traiphforward scientific identific and to explain how things work and why they might happen. (C&L) Lean use straiphforward scientific evidence to answer questions or this support their findings. Lean use relevant scientific ideas. Ican use relevant scientific ideas. Lean test motion their previous their					
	evaluating	 (C&L) I can use talk to help work out problems and organise thinking and activities, and to explain how things work and why they might happen. (C&L) I can return to and build on their previous learning, refining ideas and developing their ability to represent them. (EAD) ELG I can offer explanations for why things might happen, making use of recently introduced vocabulary from stories, non- fiction, rhymes and poems when appropriate. I can express my ideas and feelings about my experiences using full sentences, including use of past, present and future tenses and 	similari simple process I can us evidence	rities or changes related to e scientific ideas and sses. use straightforward scientific nce to answer questions or to	 when further tests and observations might be needed. I can use relevant scientific language and illustrations to discuss, communicate and justify my scientific ideas. I present my findings and conclusions in different ways. I can reflect on my results and say how reliable they are. I can talk about how scientific ideas have developed over time. I can identify scientific evidence that has been used to support or

with		
new and inde resili pers the f	n be ident to try activities show pendence, ience and everance in face of lenge.	