

Science- Progression Map



	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.			
Vocabulary	plant grow change flower season tree		deciduous evergreen stem roots leaf petal	bulbs nutrients require germination	blossom fertiliser transported lifecycle pollination seed formation			

	soil sunlight bean seed		seed branches trunk flower soil		seed dispersal			
Animals, including humans	0-3 Make connections between the features of their family and other families. Notice differences between people. 3-4 Understand the key features of the life cycle of an animal. Continue developing positive attitudes about the differences between people. Know that there are different countries in the world and talk about the differences they have experienced or seen in photos.	Talk about members of their immediate family and community. Name and describe people who are familiar to them. ELG Explore the natural world around them, making observations and drawing pictures of animals and humans. 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. Manage their own basic hygiene and personal needs, including dressing, going to the toilet and understanding the importance	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.	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.	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.	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.	Describe the changes as humans develop to old age.	Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood. Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function. Describe the ways in which nutrients and water are transported within animals, including humans.

		of healthy food choices.						
Vocabulary	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	

	different materials. 3-4 Use all their senses in hands-on exploration of natural materials. Explore collections of materials with similar and/or different properties. Talk about what they see, using a wide vocabulary. Explore different materials freely, to develop their ideas about how to use them and what to make. Develop their own ideas and then decide which materials to use to express them. Join different materials and explore different textures.		simple physical properties.				and evaporating.	
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Vocabulary y	wood plastic metal material hard soft bend rough smooth waterproof strong brick straw sticks		wood plastic metal material hard soft bendy rough smooth rigid	dull shiny waterproof absorbent opaque transparent brittle durable suitable natural manmade				
Rocks		Describe what they see, hear and feel whilst outside. ELG Explore the natural world around them, making observations.	Distinguish between an object and the material from which it is made. (Y1 - Everyday materials). Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock. (Y1 - Everyday materials). Describe the simple physical properties of a variety of everyday materials. (Y1 - 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. (Y2 - Uses of everyday materials).	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.			

			simple physical properties. (Y1 - Everyday materials).					
Vocabulary			See Materials.	See Materials.	fossil sediment grain crystal permeable impermeable sedimentary igneous metamorphic marble chalk granite sandstone slate clay peat			
Seasonal changes		Understand the effect of changing seasons on the natural world around them. Describe what they see, hear and feel whilst outside. 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	Observe changes across the 4 seasons. Observe and describe weather associated with the seasons and how day length varies.					

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

		processes and changes in the natural world around them, including the seasons. 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.		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.		sometimes pose dangers to living things.		animals based on specific characteristics.
Vocabulary	Habitat Home Jungle Forest Sea Animal Wood			Habitat Micro-habitat Woodland Seashore Life cycle Reproduction Survival Offspring Produce Healthy Unhealthy		Vertebrate Invertebrate Mammal Amphibian Reptile Classification Key Protection Shelter	Sexual Asexual Stamen Stigma Plantlet Runners Pollen Ovaries	Characteristics Micro organism
Light		Describe what they see, hear and feel whilst outside. ELG			-recognise that they need light in order to see things and that dark is the absence of light			-recognise that light appears to travel in straight lines -use the idea that light travels

		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			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
Vocabulary	Light Dark Shadow Torch Reflection Diwali Rama Sita				Light source Reflect Reflective Rays Opaque Transparent Translucent			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. ELG 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 observations.			magnetic forces can act at a distance. Observe how magnets attract or repel each other and attract some materials and not others. Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials. Describe magnets as having 2 poles. Predict whether 2 magnets will attract or repel each other, depending on which poles are facing.		Identify the effects of air resistance, water resistance and friction, that act between moving surfaces. Recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect.	
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Vocabulary	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.	

						lights in a simple series circuit. Recognise some common conductors and insulators, and associate metals with being good conductors.		
Vocabulary	Light Dark Torch On Off Switch Battery					Appliance Device Mains Circuit Component Cell Battery Positive Negative Connection Wire Crocodile clip Bulb Switch Buzzer Motor Conductor Insulator Electrons		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		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		

			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. <i>Y1 Everyday Materials</i>	some materials can be changed by squashing, bending, twisting and stretching. <i>Y2 - Uses of everyday materials</i>		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.		
Vocabulary	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. ELG 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. <i>(Y1 - Animals, including humans)</i>			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 makers and instruments and play them in different ways. 3-4 Sing the pitch of a tone sung by another person ('pitch match'). Sing the melodic shape (moving melody, such as up and down, down and up) of familiar songs. Play instruments with increasing control to express their feelings and ideas.					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.		
Vocabulary	5 senses Hear Loud Soft Scream Music Beat Sound					Source Vibrate Vibration Travel Solid/liquid/gas Pitch Volume Insulation Percussion Faint		
Earth and		See Seasonal Changes.	Observe changes across				Describe the movement of	

Space			the four seasons. Observe and describe weather associated with the seasons and how day length varies. <i>(Y1 - Seasonal changes)</i>				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.	
Vocabulary		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)				Identify 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. <i>(Y2 - Living things and their habitats)</i>	things that have lived are trapped within rock. <i>(Y3 - Rocks)</i>	sometimes pose dangers to living things. <i>(Y4 - Living things and their habitats)</i>		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.
Vocabulary								Evolution Inherit Inheritance Adapt Adaptation Offspring Variation Characteristic Palaeontologist Excavate Suited Environment

Working Scientifically

See ASE Plan Working Scientifically Matrixes

Questioning	0-3 I can 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)	I can ask 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)	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 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 electronic media to find things out.	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. 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 make predictions.	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.
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,	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.
Considering evidence and		I 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) 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 making use of		I can identify differences, similarities or changes related to simple scientific ideas and processes. I can use straightforward scientific evidence to answer questions or to support their findings.	I can use my results to identify 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 refute ideas or arguments
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		conjunctions, with modelling and support from my teacher. I can be confident to try new activities and show independence, resilience and perseverance in the face of challenge.			
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