

Science – Progression of Knowledge

CONCEPT DOMAIN	EYFS 	YEAR 1 	YEAR 2 	YEAR 3 	YEAR 4 	YEAR 5 	YEAR 6 
Being scientific	<p>BS1 Know that we can be curious about our world by asking questions</p> <p>BS2 Know how to tell someone about an idea and how to choose something to help exploration, asking for help if needed</p> <p>BS3 Know that a test set up will help answer a particular question</p> <p>BS4 Know how to answer 'how' and 'why' questions about what has happened.</p>	<p>BS1 Know, with help how to ask a question to test, like which plants live in which habitat</p> <p>BS2 Know how to start gathering evidence to answer a question</p> <p>BS3 Know how, with help, to set up an investigation</p> <p>BS4 Know the importance of careful observation in answering questions from results</p>	<p>BS1 Know how to ask a question that can be tested, like how much water plants need to grow well</p> <p>BS2 Know that there may be more than one way to gather evidence to answer a question and how to suggest these</p> <p>BS3 Know how to set up a test that answers a question that has been asked</p> <p>BS4 Know how to use a hand lens for careful observation</p>	<p>BS1 Know how to start asking questions about change e.g. how changing the light source position alters shadows</p> <p>BS2 Know how to plan a fair test which compares something, like how altering different factors affects plant growth.</p> <p>BS3 Know how to set up a fair test which compares something, like how altering different factors affects plant growth.</p> <p>BS4 Know how to use cm and m in measurements</p>	<p>BS1 Know how to use observations to create questions for testing</p> <p>BS2 Know how to plan more than one kind of investigation in a fair way e.g. including surveys</p> <p>BS3 Know how to set up more than one kind of investigation in a fair way e.g. including surveys</p> <p>BS4 Know how to measure cm and m accurately</p>	<p>BS1 Know that there are different ways to gather evidence for testing to answer questions</p> <p>BS2 Know that there is more than one way of investigating a concept like friction and know how to identify some of the different variables to be controlled</p> <p>BS3 Know how to set up more than one way of investigating a concept like friction and know how to identify some of the different variables to be controlled</p> <p>BS3B Know how to use scientific knowledge to make predictions</p> <p>BS4 Know how to use mm, cm and m precisely and begin to know when to</p>	<p>BS1 Know how to use and evaluate different ways to gather evidence to test questions</p> <p>BS2 Know how to identify and manage variables when investigating a concept and that this can be done more accurately in some cases than others.</p> <p>BS3 Know how to set up for identified and managed variables when investigating a concept and that this can be done more accurately in some cases than others.</p> <p>BS3B Know how to use scientific knowledge and past investigations to predict and hypothesise</p> <p>BS4 Know when repeating measures or changing the variable to be measured</p>

	<p>BS5 Know how to collect results with help to answer 'What has happened?'</p> <p>BS6 Know the answer to 'What has happened?'</p>	<p>BS5 Know how to collect results, like comparing how far different materials stretched</p> <p>BS6 Know with help what to record from results</p> <p>BS7 Know what has happened from recordings of results</p>	<p>BS5 Know from group discussions that you can choose how to collect results, such as seeing how the shapes of some materials can be changed</p> <p>BS6 Know, with help, how to record with tables and diagrams</p> <p>BS7 Know what has happened and that sometimes these can be grouped to answer a question</p>	<p>BS5 Know that there is more than one choice of how to collect results</p> <p>BS6 Know how to use words and, with help, labelled diagrams to record findings</p> <p>BS7 Know some of the patterns in results that link to the scientific concepts</p> <p>BS8 Know that one investigation can lead to another</p> <p>BS9 Know, with help how to write a conclusion based on evidence</p>	<p>BS5 Know how to make a choice about different ways to collect results</p> <p>BS6 Know how to use words and labelled diagrams to record findings</p> <p>BS7 Know how the patterns in results link to scientific concepts</p> <p>BS8 Know how to use one fair test outcome to suggest another fair test</p> <p>BS9 Know how to write a conclusion based on evidence</p>	<p>repeat measurements for accuracy</p> <p>BS5 Know how to explain choice of collection method</p> <p>BS6 Know how to start to use labelled diagrams for more complex outcomes and line graphs for basic data</p> <p>BS7 Know that there is cause and effect within results</p> <p>BS8 Know how to use one comparison outcome to suggest another</p> <p>BS9 Know how to begin suggesting reasons; cause and effect within a scientific conclusion</p>	<p>will increase reliability of results</p> <p>BS5 Know that there are often more accurate methods of data collection and limits to what is possible in the classroom,</p> <p>BS6 Know how to use labelled diagrams for more complex outcomes and line graphs for data, including mean average.</p> <p>BS7 Know that not all results are equally reliable.</p> <p>BS8 Know how to use one set of data or conclusion to suggest further line of enquiry or modification</p> <p>BS9 Know that results can be used in support or to disprove prior results or a hypothesis</p>
LIFE: living things	<p>L1 Know some ways that living things are similar and different</p> <p>L2 Know the names of some plants and animals found in the locality</p>	<p>L1 Know how to sort into 'living', 'dead' and 'never been alive'</p> <p>L2 Know the name of a range of local plants and animals, their key features and how to identify them</p>	<p>L1 Know how to sort into 'living', 'dead' and 'never been alive' and begin to know how these can be similar and different within the groups</p> <p>L2 Know the name of a range of living things in habitats of various sizes, their key features and how to identify them</p>	<p>L1 Know that there are different ways of sorting living things and, with help, know how to sort in more than one way</p> <p>L2 Know how to use classification keys to group and identify members from a range of familiar things</p>	<p>L1 Know how to suggest different ways of sorting e.g. according to habitat or prey.</p> <p>L2 Know how to use classification keys to group and identify members from a range of familiar and less familiar living things</p>	<p>L1 Know, with help, the advantages and disadvantages of different methods of sorting living and non-living things</p> <p>L2 Know how to use similarities and differences to decide how living things should be grouped, e.g. a cat =</p>	<p>L1 Know how to justify or evaluate a chosen method of sorting</p> <p>L2 Know how to use similarities and differences to decide how living things should be grouped, e.g. a cat =</p>

						mammal - warm blooded; live young.	mammal - warm blooded; live young; and how to begin to identify anomalies e.g. whale.
						L2Know how to explain why certain features are useful in classifying , e.g. backbones in animals	L2Know how to explain why certain features are useful in classifying , e.g. backbones in animals and why some have limitations
						L3Know how to use fossils as evidence that living things have changed over time, e.g. explain that these have died out and others have taken their place.	L3Know how to use Fossils as evidence that living things have changed over time, e.g. explain that these have died out and others have taken their place, noting differences in types
L3 Know that places can be different	L3Know how a named animal or plant gets what it needs from its habitat	L3Know how to explain how a named animal or plant gets what it needs from its habitat and other living things	L3Know some examples of living things that are threatened by changes to one environment, e.g. owls and habitat loss	L3Know examples of living things that are threatened by changes to environments, e.g. owls and habitat loss from more than one habitat	L3Know how to describe examples of a living thing that has adapted to live in a habitat and evolved as a result, e.g. a polar bear or cactus	L3Describe examples of a living thing that has adapted to live in more than one habitat and evolved as a result, e.g. a polar bear or cactus and begin to compare	
	L3Know three things that a plant or animal needs to survive						
	L3,4Know how to begin to explore and identify what plants and animals need to thrive.	L3Know how to explore and identify what plants and animals need to thrive.	L3Know how to explain what all plants need to flourish.	L3Know how to explain what all plants need to flourish and how these requirements vary in amount.	L3Know how to link adaptations to the needs of living things in a habitat	L3Know how to link adaptations to the needs of living things in a habitat or responses to changes in a habitat	
L3,4Know that plants and animals need things to survive		L4Know how to construct a simple food chain to show nutrition relationships	L4Know how to use a food chain to represent predator-prey relationships	L4Know how to use a food chain to represent predator-prey relationships where there may be more than one animal as predator	L4Know how to construct a food web to show nutrition relationship between plants, animals and micro- organisms and how this helps to show how an ecosystem may become unbalanced	L4Know how to construct a food web to show nutrition relationships between plants, animals and micro- organisms and how this can be used to demonstrate the impact of changes to living things that would have most	
			L4Know why animals depend on the correct nutrition.	L4Know why animals depend on the correct			

					nutrition and how these vary in amount		impact on other within an ecosystem
	L5 Know how to look carefully at plants and animals	L5 Know the names of some parts of familiar plants	L5 Know the names of some parts of familiar plants and how to spot some comparisons	L5 Know the functions of some plant parts	L5 Know the functions of plant parts		
				L6 Know how water is carried up from the soil	L6 Know how water is carried up from the soil and some similarities between plants and how to explain using a diagram	L5 Know how the parts of plants are adapted to their function or environment e.g. cactus spikes	L5 Know how the parts of plants are adapted to their function or environment e.g. cactus spikes and how to compare between species
			L6 Know the stages of development of a plant	L6 Know the importance of pollination, seed formation and seed dispersal in the reproduction of flowering plants.	L6 Know the importance of pollination, seed formation and seed dispersal in the reproduction of flowering plants and some comparisons between plants	L6 Know the sequence in reproduction of a range of plants and how this may differ	L6 Know the sequence in reproduction of a range of plants, making some comparisons and knowing how factors such as the number of seeds dispersed help the species to survive
						L6 Know that offspring normally vary from each other and from their parents, e.g. that puppies vary from each other and from their parents..	L6 Know that offspring normally vary from each other and from their parents, e.g. that puppies vary from each other and from their parents, noting differences between siblings; litters etc.
						L6 Know in sequence in sequence the stages of reproduction and life in some plants and animals, e.g. dog and a thistle.	L6 Know in sequence in sequence the stages of reproduction and life in some plants and animal, and how to explain similarities and differences
	L7 Know that exercise and nutrition are important for human health	L7 Know some of a human's basic needs and the types of foods that	L7 Know ways that exercise and food types promote health	L7 Know the balance of food types needed for a healthy lifestyle	L7 Know the consequences of an	L7 Know that substances like drugs and alcohol can	L7 Know the reasons why people may misuse

		should be eaten in moderation for health			unbalanced diet or lack of exercise]	be misused and the consequences of this	substances like drugs or alcohol and how to overcome peer pressure, including reference to scientific fact
	L8Know the names of some body parts	L8Know the names of all the main body parts	L8Know the names of body parts, relate each of the human senses to organs and know the names of some other organs e.g. stomach; heart	L8Know which parts of the skeleton provide support and protection, and how they work with muscles to allow for movement L8Know what most of the main organs in the digestive system do. L8Know the function of each type of tooth in the human skull.	L8Know which parts of the skeleton provide support and protection, and how they work with muscles to allow for movement, beginning to understand how injuries might happen L8Know what each of the main organs in the digestive system do. L8Know the function of each type of tooth in the human skull, relating shape and position to function	L8Know the changes as humans develop to old age, e.g. trends in changes to size, weight, mobility etc L8 Know how the heart and blood vessels combine to create the circulatory system	L8Know the changes as humans develop to old age, e.g. trends in changes to size, weight, mobility etc and begin to question whether these trends happen in other animals. L8 Know how the heart and blood vessels are adapted to function effectively as the circulatory system
Matter: Solids, Liquids and Gases	M1Know the names of some items and the material they are made from M2Know some ways in which materials are similar and different.	M1Know the names of a range of items and the material they are made from M2Know how to put a range of materials into groups	M1,2Know the names of some items, the material they are made from and begin to know what they have in common M2Know how to put a range of materials into groups, with reasons M2Know how the properties of a familiar item or group suits its use	M1Know how to use known materials and their properties to inform thinking about unfamiliar items M2Know how to group most materials according to their state of matter. M2Know how to examine and test rocks, grouping them according to the results.	M1Know how to use known materials and their properties to inform thinking about unfamiliar items, beginning to identify differences M2Know how to group materials according to their state of matter. M2Know how to examine and test rocks, grouping them according to the results, beginning to relate to their use	M1Know how to use the term reactants and products of chemical changes and recognise these as being irreversible or reversible M2Know how to use properties of materials to justify separation method M2Know how to test and sort a range of materials based on their physical	M1Know how to use the term reactants and products of chemical changes and recognise these as being irreversible or reversible; know how to make links with other, similar reactions M2Know how to use properties of materials to justify separation method, building on prior investigations M2Know how to test and sort a range of materials based on their physical

						properties and use evidence to justify the selection of a material for a purpose	properties and known similar material and use evidence to justify the selection of a material for a purpose referring to prior investigations
	M3Know that changes happen and some of the reasons for these e.g when making mud pies	M3 Know 3 materials that can be changed by squashing or stretching	M3 Know 5 materials that can be changed by twisting, bending squashing or stretching and 5 which cannot	M3Know the changes of state and with help research values of degrees Celsius at which changes happen M3Know how evaporation and condensation happen in the water cycle M3Know how fossils are formed. M3Know how soil is made	M3Know the changes of state and research values of degrees Celsius at which changes happen M3Know how evaporation and condensation happen in the water cycle, and how temperature affects evaporation M3Know how fossils are formed, noting some differences M3Know how soil is made, making some comparisons between soil types	M3Know how the original materials can be retrieved from each reversible change and how to demonstrate this, including evaporation and condensation	M3Know how the original materials can be retrieved from each reversible change, including evaporation and condensation and how to demonstrate this making links between materials and changes; now how the speed of reaction can be altered
ENERGY: The Earth and how it works	E1 Know some of the changes in weather through the seasons	E1 ai)Know how things change over the seasons, including patterns in weather and day length	E1Know how things change over the seasons, noting some winters harsher; wetter including patterns in weather and day length in different seasons and how this affects human and animal behaviours			E1Know how to diagram or use a model to describe the planets' orbits and the Moon's orbit around the Earth E1Know that the Sun, Earth & Moon as spheres and how to use a diagram or model of it's rotation to explain why the Sun seems to travel across the	E1Know how to draw a diagram or use a model to describe the planets' orbits and the Moon's orbit around the Earth, highlighting limitations of model E1Know that the Sun, Earth & Moon as spheres, including reference to when this was not believed, and how to explain why the Sun

					sky, and what causes day and night.	seems to travel across the sky, and what causes day and night, with some ref to differences at poles vs Equator
				E2Know that you need light to be able to see but must protect our eyes from sunlight	E2Know that you need light to be able to see, noting that some people cannot see E2Know how to represent light using straight line ray diagrams. E2Know how to draw diagrams using straight lines showing light travelling to the eye. E2Know how to use diagrams to explain that we can see an object by referring to light travelling into the eye.	E2Know how to use diagrams to show we can see an object by referring to light travelling into the eye; comparing reflective and non-reflective surfaces
				E2Know that some objects reflect light and some cause shadows,	E2Know that some objects reflect light and some cause shadows, and that there are patterns in the way shadows form	E2Know how to independently draw a diagram showing an object, shadow and light to relate object shape to shadow shape
				E2Know how to change the size of a shadow	E2Know the pattern between position of objects in relation to light source and shadow size	E2Know how to shadow shape, explaining effect of altering light position on shadow forms
				E3Know some examples of appliances that run on electricity.	E3Know many examples of appliances that run on electricity.	
				E3Know how to construct a simple circuit and name	E3Know how to symbols to represent a circuit	E3Know how to symbols to represent parallel and series circuits

	<p>E</p> <p>4Know that a push and pull can create change</p>			<p>E3Know how to construct a simple circuit and name its parts</p> <p>E3Know some materials which are conductors and insulators, identifying metals as conductors.</p> <p>E3Know how to use the idea of a complete circuit to help predict whether a particular arrangement of components will make the bulb light and how the operation of a switch will affect bulbs lighting.</p> <p>E4Know the different ways a toy car, will move on different surfaces</p> <p>E4Know that magnets have poles and be able to name these</p> <p>E4Know that magnets attract or repel each</p>	<p>its parts, including either buzzer or switch</p> <p>E3Know a range of materials which are conductors and insulators, identifying metals as conductors.</p> <p>E3Know how to use the idea of a complete circuit to help predict whether a particular arrangement of components will make the bulb light or buzzer work and how the operation of a switch in different positions will affect bulbs lighting</p> <p>E4Know that magnets have poles and be able to name these, linking to meaning e.g. 'poles apart'</p> <p>E4Know that magnets attract or repel each other, and attract magnetic materials., linking to properties of materials</p> <p>E4Know that materials can be grouped into magnetic and non-</p>	<p>e3Know how the number and voltage of cells affects the lamp or buzzer and the effect of altering the position of a switch</p> <p>E4Know how motion may be resisted by air resistance, water resistance or friction.</p> <p>4Know that some devices e.g. gears may turn a smaller force into a larger one.</p>	<p>E3Know how the number and voltage of cells affects the lamp or buzzer, making comparisons, and the effect of altering the position of a switch</p> <p>E3Know that models and diagrams can be used to explain the effect of changes to circuits and that these have advantages and disadvantages</p> <p>E4Know how motion may be resisted by air resistance, water resistance or friction and how to link this to everyday uses and limitations</p> <p>E4Know that some devices e.g. gears may turn a smaller force into a larger one and how to spot patterns between variables</p>
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			<p>other, and attract magnetic materials</p> <p>E4Know that materials are magnetic or non-magnetic</p> <p>E4Know how to use this knowledge to predict what will happen when poles are put next to each other</p> <p>E4Know the difference between contact and non-contact force</p> <p>E5Know how to use the word 'vibration' in explaining how sound travels.</p> <p>E5Know why and how the state of matter through which a vibration travels affects the sound (solid, gas)</p>	<p>magnetic including predictions of unknown but like- materials)</p> <p>E4Know how to use this knowledge to predict what will happen when poles are put next to each other with reasons</p> <p>E4Know the different ways a toy car, will move on different surfaces. And begin to see similarities</p> <p>E4Know the difference between contact and non-contact forces giving a range of examples</p> <p>E5Know how to use the word 'vibration' in explaining how sound travels, referring to more than one example</p> <p>E5Know why and how the state of matter through which a vibration travels affects the sound (solid, liquid, gas)</p>	<p>E4Know that gravity causes objects to fall towards Earth</p>	<p>E4Know that gravity causes objects to fall towards Earth and how Newton can be placed in the chronology of development of scientific understanding</p>
	<p>E5Know how to listen with care to a range of sounds to identify at least 3 out of 5.</p>					

				<p>E5Know what difference moving further from the source of a sound makes</p> <p>E5Know how the pitch and volume of the sound can be changed e.g. with an elastic band</p>	<p>E5Know what difference moving further from the source of a sound makes and how to spot patterns in this</p> <p>E5Know how the pitch and volume of the sound can be changed e.g. with an elastic band and begin to know how to spot patterns in this</p>		
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