



Progression Grid: Science



Animals, including humans

Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals	Understand that animals, including humans, have offspring which grow into adults	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	Describe the simple functions of the basic parts of the digestive system in humans	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
	Identify and name a variety of common animals that are carnivores, herbivores and omnivores	Describe the basic needs of animals, including humans, for survival (water, food and air)	Identify that humans and some other animals have skeletons and muscles for support, protection and movement	Identify the different types of teeth in humans and their simple functions		Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function
	Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets)	Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene		Construct and interpret a variety of food chains, identifying producers, predators and prey		Describe the ways in which nutrients and water are transported within animals, including humans
	Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense					

Earth and space						
Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
					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	
Electricity						
Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
				Identify common appliances that run on electricity		Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit
				Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers		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

				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		Use recognised symbols when representing a simple circuit in a diagram
				Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit		
				Recognise some common conductors and insulators, and associate metals with being good conductors		

Evolution and inheritance

Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
						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
Forces and magnets						
Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
			Compare how things move on different surfaces		Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object	
			Notice that some forces need contact between two objects, but magnetic forces can act at a distance		Identify the effects of air resistance, water resistance and friction, that act between moving surfaces	
			Observe how magnets attract or repel each other and attract some materials and not others		Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect	
			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			

Light						
Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
			Recognise that we need light in order to see things and that dark is the absence of light			Recognise that light appears to travel in straight lines
			Notice that light is reflected from surfaces			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
			Recognise that light from the sun can be dangerous and that there are ways to protect eyes			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
			Recognise that shadows are formed when the light from a light source is blocked by a solid object			Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them
			Find patterns in the way that the size of shadows change			
Living things and their habitats						
Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
		Explore and compare the differences between things that are living, dead, and things that have never been alive		Recognise that living things can be grouped in a variety of ways	Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird	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
		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		Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment	Describe the life process of reproduction in some plants and animals	Give reasons for classifying plants and animals based on specific characteristics
		Identify and name a variety of plants and animals in their habitats, including micro-habitats		Recognise that environments can change and that this can sometimes pose dangers and have an impact on living things		
		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				
Plants						
Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees	Observe and describe how seeds and bulbs grow into mature plants	Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers			
	Identify and describe the basic structure of a variety of common flowering plants, including trees	Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy	Explore and describe 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			
Rocks						
Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
			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			
Seasonal changes						
Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	Observe changes across the four seasons					
	Observe and describe weather associated with the seasons and how day length varies					

Sound						
Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
				Identify how sounds are made, associating some of them with something vibrating		
				Recognise that vibrations from sounds travel through a medium to the ear		
				Find patterns between the pitch of a sound and features of the object that produced it		
				Find patterns between the volume of a sound and the strength of the vibrations that produced it		
				Recognise that sounds get fainter as the distance from the sound source increases		
States of matter						
Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
				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		
Materials						
Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	Distinguish between an object and the material from which it is made	Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses			Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets	
	Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock	Find out and describe how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching			Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution	
	Describe the simple physical properties of a variety of everyday materials				Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating	
	Compare and group together a variety of everyday materials on the basis of their simple physical properties				Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday	

					materials, including metals, wood and plastic	
					Demonstrate that dissolving, mixing and changes of state are reversible changes	
					Explain that some changes result in the formation 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	
Analyse data						
Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Make observations of animals and plants and explain why some things occur	Start to discuss what they have found out	Discuss what they have found out	Use results to draw simple conclusions and make predictions	Use results to draw simple conclusions, make predictions, suggest improvements and raise further questions	Use test results to make predictions to set up further tests (comparative/fair)	Use test results to make predictions to set up further tests (comparative/fair) and explain reasoning
Talk about changes			Identify similarities, differences, changes related to scientific processes and ideas	Explain similarities, differences, changes related to scientific processes and ideas	Identify scientific evidence that has been used to support/refute arguments	Interpret scientific evidence that has been used to support/refute arguments
Ask questions						
Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	Start to ask and suggest answers to simple scientific questions	Ask and raise their own scientific questions	Ask relevant scientific questions and suggest how to answer eg practical test vs secondary sources	Generate and answer scientific questions using evidence	Use science experiences to plan different types of enquiry	Plan different types of scientific enquiry in order to answer questions

	Use first-hand practical experiences to find answers	Use first-hand practical experiences to find answers	Develop different types of scientific enquiry	Select most appropriate type of scientific enquiry		Use science experiences to explore ideas and raise different types of question
Gather data						
Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	Begin to gather and record data simply using pictures and words	Gather and record data using diagrams, words and charts	Gather, record and present data in variety of ways eg drawings, labelled diagrams, charts	Gather, record, classify and present data in a wide variety of ways eg drawings, labelled diagrams, charts	Record data/results of increasing complexity using diagrams, classification keys, tables, bar and line graphs	Decide how to record data/results of increasing complexity using diagrams, classification keys, tables, scatter graphs, bar and line graphs
			Report on findings orally and in writing using scientific language	Report on findings orally and in writing using scientific language to answer questions	Report and present findings from enquiries, examining causal relationships and reliability of results	Report and present findings from enquiries, examining causal relationships and reliability of results
Make observations						
Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Make observations of animals and plants and explain why some things occur	Start to observe closely	Observe closely	Develop skills of systematic observation	Make systematic observations	Independently decide which observations to make	Independently decide which observations to make
Talk about changes						
Perform tests						
Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	Perform simple tests with support	Perform simple tests	Set up simple practical enquiries	Suggest, set up and carry out simple practical enquiries	Recognise and control variables where necessary	Recognise and control variables where necessary
			Understand comparative and fair tests	Understand comparative and fair tests		Explain which variables need to be controlled and why

Use equipment						
Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	Begin to use simple equipment eg egg timers, hand lenses	Use simple equipment eg hand lenses, egg timers	Use range of equipment to measure accurately eg data-loggers, thermometers	Confidently use range of equipment to measure accurately eg data-loggers, thermometers	Take measurements using a range of scientific equipment with accuracy and precision	Take measurements using a range of scientific equipment with accuracy and precision, taking repeat readings where appropriate