



Subject Progression Grid for Science



Working Scientifically

Year Group	Key Skills	Key Vocabulary
Year 1	- To be able to recognise that questions can be answered in different ways. - To be able to ask simple questions. - To be able to use simple scientific language. - To be able to talk about what I have found out. - To be able to gather and record data in different ways. - To be able to use simple equipment to make measurements. - To be able to observe closely. - To be able to compare things by sorting and grouping. - To be able to perform simple (comparative) tests.	question answer observe equipment identify classify sort group record describe compare
Year 2		
Year 3	- To be able to ask my own questions and use different ways to answer them. - To be able to suggest improvements and raise further questions. - To be able to use relevant scientific language. - To be able to draw simple conclusions and make predictions for new values. - To be able to explain what I have found out in writing and when speaking. - To be able to gather, record, classify and present data in different ways, including drawings, labelled diagrams, keys, bar charts and tables. - To be able to use different equipment to measure accurately in standard units. - To be able to use and make careful observations. - To be able to set up my own simple (comparative and fair) tests.	research scientific enquiry comparative test fair test careful observation accurate measurement explanations thermometer data logger data, gather, record, interpret conclusions, predictions bar charts, tables, diagrams, keys, labels similarities/differences changes evidence improve secondary sources
Year 4		
Year 5	- To be able to ask different kinds of questions. - To be able to use results to make predictions and set up more tests (including fair tests). - To be able to use relevant scientific language and illustrations. - To be able to report and present findings using speaking and writing including displays and presentations. - To be able to decide how to record data and results (scientific diagrams, labels, classification, keys, tables, scatter, bar and line graphs). - To be able to use different scientific equipment to measure with precision. I take repeat readings when appropriate. - To be able to decide what observations and measurements to make. - To be able to set up fair tests when necessary.	plan variables measurements accuracy precision repeat scientific diagrams, scatter graphs, line graphs, classification keys. fair tests report, present conclusions, causal relationships, explanations identify, classify, describe patterns support, refute, argue
Year 6		

EYFS

Year Group	Unit of Study	Key Knowledge	Key Skills	Key Vocabulary
EYFS	Working Scientifically		- To be able to question why things happen. - To be able to have their own ideas. - To be able to test their own ideas. - To be able to start using some science words. - To be able to talk about things like animals, plants, natural and found objects. - To be able to create simple representations of people and objects. - To be able to use simple tools. - To be able to use senses and look closely. - To be able to notice some things which are similar and some things which are different.	science observe similarity difference autumn winter spring summer seasons melting freezing weather animal plant senses push pull
	Understanding of the World (Birth to Three)	To know some simple properties of materials.	- To be able to explore materials with different properties. - To be able to explore natural materials indoor and outdoor. - To be able to explore and respond to different natural phenomena.	
	Understanding of the World (3-4 years)	- To know that living things need respect and to be cared for. - To know key features of the life cycle for a plant and animal. - To know that materials have differences.	- To be able to use all their senses in hands-on exploration of natural materials. - To be able to explore the collections of materials with similar/different properties. - To be able to talk about what they see, using a range of vocabulary. - To be able to explore how things work. - To be able to plant seeds and care for growing plants. - To be able to explore and talk about different forces they can feel. - To be able to talk about the differences between materials and the changes they notice.	
	Understanding of the World (Reception) This also includes The Early Learning Goals for: - The Natural World - Managing Self - Listening, Attention and Understanding.	- To know their senses. - To know the effect of changing seasons. - To know some similarities and differences between the natural world around them and contrasting environments. - To know some important processes and changes in the natural world around them (states of matter and seasons).	- To be able to explore the natural world around them. - To be able to describe what they see, hear and feel whilst outside. - To be able to make observations. - To be able to draw pictures of animals and plants. - To be able to draw on experiences and what has been read in class. - To be able to manage basic hygiene and personal needs (understanding the importance of healthy food choices). - To be able to make comments about things that are heard and then ask questions about them.	

Animals and Humans (Science enquiries are highlighted in yellow)

Year Group	Unit of Study	Key Knowledge	Key Skills	Key Vocabulary
Year 1	Animals, including humans	- To name and identify the basic parts of the human body. - To know which part of the body links to each sense. - To name and identify common animals.	- To be able to describe and compare the structure of common animals. - To be able to draw and label the basic parts of a human body. - To be able to group (identify and classify) animals. (carnivores, herbivores and omnivores or fish, amphibians and reptiles etc.) - To be able to gather and record facts about animals (research) - To be able to gather information about the world through our senses. - To be able to observe over time using senses.	mammal, reptile, amphibian, fish, bird pets carnivore, herbivore, omnivore taste, sight, touch, smell, hear Basic parts of the body (head, ear, nose, mouth, eye, neck, chest, arm, hand etc.)
Year 2	Animals, including humans	- To know that animals have offspring which then grow into adults. - To name the needs of animals (including humans) for survival. - To know that animals obtain their food from plants and other animals. - To name different sources of food. - To know the importance of exercise, eating the right amount of food and hygiene.	- To be able to explain what a human/animal needs to survive. - To be able to explain what would happen if their basic needs were not met. Research for both of the above points. - To be able to identify and classify foods which are 'animal', 'plant' or 'both'. - To be able to perform a comparative test to see what food an animal/human likes. - To be able to create a day plan for exercise and food.	offspring grow adults nutrition reproduce survival exercise hygiene water food air
Year 3	Movement and Feeding	- To identify that animals (including humans) need the right amount of nutrition. - To know that animals and humans do not make their own food. - To know that nutrition comes from what you eat. - To know that humans and some animals have a skeleton and muscles for support, protection and movement.	- To be able to create a balanced food plate and explain what each part is needed for. - To be able to explain why humans need muscles. - To be able to compare similarities and differences between humans using pattern seeking.	nutrition, vitamins, minerals fat, protein, carbohydrates, fibre, water skeleton, movement, protection, muscles, bones, joints vertebrates, invertebrates diet, healthy
Year 4	Animals, including humans	- To know the basic parts of the digestive system in humans. - To know the name of the different teeth in humans and what their function is.	- To be able to describe how we digest food. - To be able to explain what each type of tooth does.	digest digestive system mouth tongue transports

			To be able to create a practical enquiry or test on the impact of liquids/food on teeth.	oesophagus, stomach, acid, enzymes, small intestine, large intestine incisor, canine, molar, premolar
Year 5	Animals, including humans	- To know the changes that occur when humans turn to old age. - To know the process of reproduction in some plants and animals.	- To be able to compare different life cycles. - To be able to describe reproduction in some plants and animals. - To observe the lifecycle of something living or that grows (As we get older...).	development life cycle puberty grow mass length reproduction sexual asexual
Year 6	Animals, including humans	- To name the main parts of the human circulatory system. - To know the ways that nutrients and water are transported within animals, including humans. - To know that diet, exercise, drugs and lifestyle has an impact on the body and how it functions. - To know that fossils provide information about animals which lived in the past. - To know that living things change over time. - To know that living things produce offspring of the same kind, but can vary and are not identical to their parents. - To know that animals adapt to suit their environment and adaption may lead to evolution.	- To be able to describe the functions of the heart, blood vessels and blood. - To be able to investigate pulse rate at a rest and during exercise (pattern seeking). - To explain how nutrients and water are transported through the body. - To be able to research scientific evidence and support or refute ideas. - To be able to research adaptations over time or research one element of evolution.	internal organs, heart, lungs, liver, kidney, brain muscle digest circulatory system, heart, blood, blood vessels lifestyle, nutrients, diet, exercise, drugs, alcohol, substance evolution, inheritance, adaptation

Living Things (Science enquiries are highlighted in yellow)

Year Group	Unit of Study	Key Knowledge	Key Skills	Key Vocabulary
Year 1				
Year 2	Living Things and their Habitats	- To know the scientific word for 'home' is a habitat. - To know that most living things live in something called a habitat. - To name a variety of animals and plants within their habitat, including micro-habitats. - To know that most living things live in an environment that will meet their basic needs (food, shelter, safety).	- To be able to describe/research how a habitat meets the needs of an animal or plant. - To be able to identify animals and plants within their habitats. - To be able to compare the differences between things that are living, dead or have been living (identify and classify). - To be able to create a simple food chain. - To be able to look for patterns, for example, 'As we get older...'	living, dead, habitats, micro-habitats, food, food chain, healthy, shelter, alive, conditions. hot/warm/cold dry/damp/wet bright/shade/dark
Year 3				
Year 4	Living Things and their Habitats	- To know that living things can be grouped in different ways. - To know that environments change and can create dangers to living things. - To know what a food chain shows and the different parts involved (producer, prey and predators).	- To be able to create a classification key to group, identify and name a variety of living things in their local and wider environment (identify and classify). - To be able to research the foods that different animals eat to create a variety of food chains. - To be able to set up comparative and fair tests to investigate how animals are impacted by their environment. - To be able to research how different natural causes can impact living things.	environment vertebrate danger invertebrate plants, flowering and non-flowering human impact deforestation nature reserves litter producer prey predator classification key food chain
Year 5				
Year 6	Living Things and their Habitats	To know that animals, plants and micro-organisms can be grouped by observable characteristics and by their similarities and differences.	- To be able to describe how living things (micro-organisms, plants and animals) can be classified into broad groups according to their observable characteristics and based on similarities and differences. - To provide detailed answers for classifying plants and animals based on specific characteristics (identify and classify). - To be able to observe similarities and differences between groups of species.	micro-organisms classification invertebrates characteristics similarities differences

Plants (Science enquiries are highlighted in yellow)

Year Group	Unit of Study	Key Knowledge	Key Skills	Key Vocabulary
Year 1	Plants	- To know the name of common garden and wild plants and identify them. - To know the basic structure of a variety of common flowering plants (leaf, flower, root, stem). - To know that some trees have special names for plant parts, for example, trunk and branch.	- To be able to provide a description of a common flowering plant. - To be able to use observational skills to recognise that some things change over time, for example, the size of a plant. - To be able to identify two variables in an investigation, for example, water and light when investigating plant growth (comparative tests or pattern seeking). - To be able to listen to someone speaking about plants. (secondary research).	plant wild garden deciduous evergreen trunk branch leaf leaves root bud flowers blossom petal stem seeds
Year 2	Plants	- To know that plants need water, sunlight and a suitable temperature to grow and stay healthy. - To know that seeds and bulbs come from plants. - To know that plant growth takes a long time and the plants can change their appearance over time as they grow. - To know that plants and seeds have the potential to grow into their parent plant. - To know that plants can produce seeds and new plants without human intervention.	- To be able to observe and describe how seeds and bulbs grow in mature plants (observation over time). - To be able to describe the basic needs of a plant. - To be able to sort seeds from non-seeds (identify and classify). - To be able to use secondary sources (visitor) to ask questions and hold a conversation about plants (secondary research).	germination healthy reproduction grow temperature light water mature bulb
Year 3	What Plants Need and Parts of Plants	- To know that a plant is a living thing. - To know that plants have some things in common. - To know that not all plants have flowers. - To know that each part of a plant has a different job. - To know the requirements of plants for life and growth (air, light, water, nutrients and room to grow). - To know that the requirements for each plant might vary (amount of water and size of plant pot etc.). - To know that the flower of a plant is where reproduction occurs.	- To be able to label the main parts of a plant. - To be able to investigate and then describe the way in which water is transported within plants. - To be able to describe some forms of seed dispersal. - To be able to set up simple comparative and fair tests to compare the effect of soil, water, fertilisers and space on plant growth (pattern seeking). - To be able to use equipment to measure water, soil and seeds needed in different investigations. - To be able to make careful observations to see how a plant changes over time.	structure function nutrition support reproduction life growth fertiliser life cycle flowers pollination seed formation seed dispersal requirements
Year 4				
Year 5				
Year 6				

Materials and Changes of State (Science enquiries are highlighted in yellow)

Year Group	Unit of Study	Key Knowledge	Key Skills	Key Vocabulary
Year 1	Everyday Materials	- To know the names of some simple properties that a material might have. - To know that the name of an object and the name of the material is not the same thing. - To know the name of a variety of everyday materials (wood, plastic, glass, rock and metal).	- To be able to describe and observe simple properties of everyday materials. - To be able to group materials together on the basis of their simple physical properties (identify and classify). - To be able to set up a comparative test to investigate properties.	Material, property, object wood, plastic, glass, metal, rock, water, brick, fabric hard, soft, stretchy, stiff, shiny, dull, rough, smooth, bendy, waterproof, absorbent
Year 2	Uses of Everyday Materials	- To know that some objects can be changed in shape by squashing, bending, twisting and stretching. - To know that some objects are made from more than one material. - To know that some materials are twisted together and this can make them stronger.	- To be able to compare materials and explain which material is suitable for a job. - To be able to explain why a material is not suitable for a certain job. Classify materials in order of their ability to bend. - To be able to set up a comparative test to compare one property (strength) between different materials. - To be able to use findings from an investigation to design a product suitable for its job. - To be able to choose an appropriate way to record findings from an investigation.	squashing, bending, stretching, twisting suitable, not suitable stronger changed
Year 3				
Year 4	States of Matter	- To know that a material can be a solid, liquid or gas. - To know that materials can change when different temperatures are applied. - To know what condensation and evaporation means. - To know how evaporation links to temperature.	- To be able to group materials together based on whether they are solids, liquids or gases (identify and classify). - To be able to observe carefully how materials change when they are heated or cooled. - To be able to measure the temperature at which materials can change in degrees Celsius. - To be able to describe the water cycle. - To set up comparative and fair tests for condensation/evaporation. - To take accurate measurements using data loggers and thermometers.	evaporation condensation melt solid liquid freeze gas container heated cooled degrees Celsius thermometer water cycle water vapour
Year 5	Properties and Changes to Materials	- To know that mixtures can be separated. - To know that some materials will dissolve in a liquid. - To know that dissolving, mixing and changes of state are reversible changes. - To know that some changes of state are not reversible. - To know that some changes of state create new materials. - To know different properties which materials can be grouped in (hardness, solubility, transparency, conductivity)	- To be able to set up a fair test when investigating materials which dissolve in a liquid. - To be able to decide how mixtures might be separated through filtering, sieving and evaporating. - To be able to describe how to recover a substance from a solution. - To be able to show that dissolving, mixing and changes of state are reversible. - To be able to explain how some changes create new materials which are no longer reversible. - To be able to group materials together based on their properties and response to magnets (identify and classify). - To be able to conduct fair tests to provide evidence for particular uses of everyday materials. - To be able to record findings within a graph.	hardness, solubility, transparency, conductivity dissolve, solution, separate, filter, sieving. irreversible, burning, rusting conductivity, insulation chemist chemical
Year 6				

Rocks and Soils (Science enquiries are highlighted in yellow)

Year Group	Unit of Study	Key Knowledge	Key Skills	Key Vocabulary
Year 1				
Year 2				
Year 3	Rocks and Soil	- To know there are different types of rocks. - To know the names of different groups that rocks can be grouped in owing to their appearance/properties. - To know that rocks cover the Earth. - To know rocks are formed in different ways. - To know that rocks can be broken down over time, for example, weathering. - To know what soil is made from. - To know what a fossil is.	- To be able to compare and group together different rocks on the basis of their appearance and physical properties (identify and classify). - To be able to describe how a fossil is formed. - To be able to observe that soil is made from different elements. - To be able to use research to identify rocks or samples of rocks and compare them. - To be able to compare different soils. - To be able to set up a fair test to investigate the properties of soil and rocks.	organic matter fossil grains crystals sedimentary appearance physical properties hard, soft, shiny, dull, rough, smooth, absorbent uses
Year 4				
Year 5				
Year 6				

Earth and Space (Science enquiries are highlighted in yellow)

Year Group	Unit of Study	Key Knowledge	Key Skills	Key Vocabulary
Year 1	Seasonal Changes	- To know the name and characteristics of the four seasons. - To know that the length of a day can vary and this links to the length of daylight. - To know what the weather is in each season.	- To be able to observe changes across the four seasons (observation over time). - To be able to describe the change in appearance of trees over time (observations). - To be able to list the weather associated with the different seasons. - To be able to use simple equipment to take basic measurements linking to the weather.	months (January, February, March, April, May, June, July, August, September, October, November, December) day daytime wind rain snow hail sleet fog cold hot
Year 2				
Year 3				
Year 4				
Year 5	Earth and Space	- To know that the Sun, Earth and Moon are spherical bodies. - To know there are planets within the solar system and they orbit around the Sun. - To know how we get day and night. - To know that the Sun does not move in the sky. - To know that the moon moves around the Earth.	- To be able to describe the movement of the Earth, and other planets, relative to the Sun. - To be able to research some of the planets or spherical bodies. - To be able to use the Earth's rotation to explain day and night and the apparent movement of the Sun across the sky. - To be able to describe the movement of the Moon in relation to Earth. - To be able to observe over time the position of shadows throughout the day and how this can make the Sun look like it moves within the sky.	Star Sun Moon planet sphere satellite orbit axis astronomer spherical
Year 6				

Electricity (Science enquiries are highlighted in yellow)

Year Group	Unit of Study	Key Knowledge	Key Skills	Key Vocabulary
Year 1				
Year 2				
Year 3				
Year 4	Electricity	- To know the name of appliances that run on electricity. - To know the names of basic parts in a circuit (bulb, buzzer, switches, cells and wires). - To know a bulb will only light if there is a complete circuit with a battery. - To know some common conductors and insulators. - To associate metals as good conductors. - To know that a switch opens and closes a circuit.	- To be able to construct a simple series circuit. - To be able to predict if a bulb will work within a circuit. - To be able to explain how a switch will impact on a bulb working or not in a simple circuit. - To be able to complete a comparative and fair test to see if a material is a conductor or an insulator.	appliances electricity electrical circuit cell, wire, bulb, battery, buzzer, switch danger safety insulator conductor
Year 5				
Year 6	Light and Electricity	- To know the symbols used in a simple circuit. - To know that brightness and volume can be affected by the voltage within a circuit. - To know the on/off position of a switch will impact the circuit.	- To be able to create a diagram of a simple circuit by using symbols. - To be able to create an investigation to show the association of the brightness of a bulb and the volume of a buzzer with the amount of voltage in a circuit (pattern seeking). - To be able to compare variations in how components function (brightness of a bulb, volume of a buzzer, position of a circuit).	voltage brightness series circuit volume circuit diagram motor symbols

Light (Science enquiries are highlighted in yellow)

Year Group	Unit of Study	Key Knowledge	Key Skills	Key Vocabulary
Year 1				
Year 2				
Year 3	Light and Shadows	- To know that light allows us to see. - To know that darkness is the absence of light. - To know that light reflects off surfaces. - To know that shadows are formed when a light source is blocked by a solid object. - To know light from the sun can be dangerous. - To know ways that a human can protect their eyes from sunlight.	- To be able to find patterns in the way a shadow changes in size (pattern seeking). - To be able to set up simple comparative and fair tests to compare materials and how much light they let through. - To be able to make careful observations of shadows. - To be able to use equipment to measure shadows during investigations. - To be able to look for pattern on how shadows change.	light see dark reflect surface Sun shadow blocked solid sunlight dangerous protect
Year 4				
Year 5				
Year 6	Light and Electricity	- To know that light travels in straight lines. - To know different light sources. - To know some reflectors. - To know that light can be reflected from shiny surfaces. - To know that without light, we cannot see. - To know that different surfaces reflect light in different ways. - To know some materials let light through. - To know light cannot travel around a solid object. - To know light is blocked by opaque objects.	- To be able to explain how we see things (light travels from a light source to our eyes or from light sources to objects and then to our eyes). - To be able to use the knowledge that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye and to explain why shadows have the same shape as the objects that cast them. - To be able to use light sensors/data logging equipment accurately and precisely. - To be able to record observations accurately and choose the correct method to record.	light source travels straight object filters rainbow mirrors reflection

Forces (Science enquiries are highlighted in yellow)

Year Group	Unit of Study	Key Knowledge	Key Skills	Key Vocabulary
Year 1				
Year 2				
Year 3	Magnets and Forces	- To know that some forces require contact between two objects. - To know that magnetic force can occur without objects having contact. - To know that magnets have two poles. - To know some magnetic materials.	- To be able to compare how things move on different surfaces (fair test). - To be able to predict if two magnets will attract or repel, depending on which poles are facing each other. - To be able to observe how magnets attract or repel each other and attract some materials. - To be able to group together and compare a variety of materials on the basis of whether they are attracted to a magnet or not (identify and classify). - To be able to group together and investigate how different things move (identify and classify/fair test).	friction surface push pull magnetic contact attract repel pole north south
Year 4				
Year 5	Forces	- To know the force of gravity acts between the Earth and the falling object. - To know that air resistance, water resistance and friction act between two moving surfaces. - To know some mechanisms, allow a smaller force to have a greater impact.	- To be able to explain that unsupported objects fall towards the Earth. - To be able to describe the effects of air resistance, water resistance and friction. - To be able to measure with precision when using force metres. - To be able to create a fair test to explore water/air resistance. - To be able to look for patterns based on friction.	gravity water resistance air resistance mechanism lever pulley gear
Year 6				

Sound (Science enquiries are highlighted in yellow)

Year Group	Unit of Study	Key Knowledge	Key Skills	Key Vocabulary
Year 1				
Year 2				
Year 3				
Year 4	Sound	• To know how sounds are made. • To know sounds are made from vibrations. • To know that vibrations from a sound travel through a medium to the ear. • To know that sounds get fainter as the distance from the sound increases.	• To be able to find patterns between the pitch of a sound and features of the object that produces it (pattern seeking). • To be able to find patterns between the volume of the sound and the strength of the vibrations (pattern seeking). • To be able to investigate how sound travels through solid, liquid and gases (comparative and fair test). • To be able to measure sound using data logging equipment.	vibration medium pitch low high volume loud quiet wave faint distance
Year 5				
Year 6				