National Curriculum Science Key Knowledge, Concepts and Working Scientifically Progression Map 2024-2026

	EYFS/Year 1		Year 2/3		Year 4/5/6	
	A (2025-26)	**B (2024-25)**	**A (2025-26)**	**B (2024-25)**	**A (2025-26)**	**B (2024-25)**
	EYFS **Understanding of the world** **The Natural World** Explore the natural world around them, make observations and drawing pictures of animals and plants. 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. Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.		**Animals inc. humans** **Year 2** Feeding and Exercise • 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 • 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.	**Growing Plants** **Year 2** • 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	**Animals inc. humans** **Year 4** Human Nutrition • 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. **Our Bodies** **Year 6** • 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.	**Living Things** **Year 4** Grouping Living Things • 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. **Classifying Living Things** **Year 6** • 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 animals based on specific characteristics.
Biology	**Parts of Animals** **Year 1** • 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.	**Plants** **Year 1** • 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.				
		Animals inc. humans **Year 1** Types of Animals • identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals • identify and name a variety of common	**Animals inc. Humans** **Year 3** Movement and Feeding • identify that animals, including humans, need the right types and amount of nutrition, and	**Plants** **Year 3** What Plants Need • explore the requirements of plants for life and growth (air,	**Evolution and Inheritance** **Year 6** This unit also links to Y3 Rocks and Soils. • recognise that living things have changed over time and that fossils	**Life Cycles** **Year 5** • describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird • describe the life process of

		animals that are carnivores, herbivores and omnivores.	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.	light, water, nutrients from soil, and room to grow) and how they vary from plant to plant.	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	reproduction in some plants and animals • describe the changes as humans develop to old age.
			Living Things **Year 2** • explore and compare the differences between things that are living, dead, and things that have never been alive • notice that animals, including humans, have offspring which grow into adults.			
			Living Things and their Habitats **Year 2** • 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 • identify and name a variety of plants and animals in		**Living Things** **Year 4** Dangers to Living Things • recognise that environments can change and that this can sometimes pose dangers to living things • construct and interpret a variety of food chains, identifying producers, predators and prey.	

			their habitats, including micro-habitats.			
			Plants **Year 3** Parts of Plants This unit also links to Y5 Life Cycles. • identify and describe the functions of different parts of flowering plants: roots, stem/ trunk, leaves and flowers • 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.			
Physics	**Seasonal changes** **Year 1** • observe changes across the four seasons • observe and describe weather associated with the seasons and how day length varies.			**Magnets and Forces** **Year 3** • compare how things move on different surfaces • notice that some forces need contact between two objects, but 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,	**Electricity** **Year 4** • 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	**Earth and Space** **Year 5** • 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

				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.	lamp lights in a simple series circuit • recognise some common conductors and insulators, and associate metals with being good conductors. **Changing Circuits** **Year 6** • 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 & Shadows **Year 3** Light and Shadows • recognise that they need light in order to see things and that dark is the absence of light • 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 a solid object • find		**Forces** **Year 5** • explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object • 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

				patterns in the way that the size of shadows change.		
						Light and Sight **Year 6** • recognise that light appears to travel in straight lines • 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 • 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. **Sound** **Year 4** • 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
Chemistry	**Identifying Materials** **Year 1** • 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.	**Everyday materials** **Year 1** Comparing Materials • 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 simple physical properties.		**Year 2** **Changing Shape** • find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.	**Separating Mixtures** **Year 5** Best taught before Y5 Types of Change. • know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution • use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating.	**Materials** **Year 5** • 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 • give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic
				Rocks and Soils **Year 3** This unit also links to Y6 Evolution and Inheritance. • 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.	**Changes of State** **Year 4** • 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 **Types of Change** **Year 5** • 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.	
			Year 2 **Uses of everyday materials** Uses of Materials • identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.			
Longitudinal Study	**Seasonal changes** **Year 1** • observe changes across the four seasons • observe and describe weather associated with the seasons and how day length varies.	**Seasonal changes** **Year 1** • observe changes across the four seasons • observe and describe weather associated with the seasons and how day length varies.	**Habitats** **Year 2** • identify and name a variety of plants and animals in their habitats, including micro-habitats. Bug Hotel	**Habitats** **Year 2** • identify and name a variety of plants and animals in their habitats, including micro-habitats. Hedgerow		**Review and celebration** **Year 6** Identifying scientific evidence that has been used to support or refute ideas or arguments.
	Plants **Year 1** • identify and name a variety of common wild and garden plants, including deciduous and evergreen trees	**Plants** **Year 1** • identify and name a variety of common wild and garden plants, including deciduous and evergreen trees	**Growing Plants** **Year 2** • observe and describe how seeds and bulbs grow into mature plants • find out and describe how plants need water, light and a suitable	**Growing Plants** **Year 2** • observe and describe how seeds and bulbs grow into mature plants • find out and describe how plants need water, light and a		

			temperature to grow and stay healthy	suitable temperature to grow and stay healthy		

Working Scientifically		
Year 1/2	Year 3/4	Year 5/6
• To ask simple questions and recognize that they can be answered in different ways. • To observe closely, using simple equipment. • To perform simple tests. • To identify and classify using observations and ideas to suggest answers to questions. • To gather and record data to help in answering questions.	• To ask relevant questions and use different types of scientific enquiries to answer them. • To set up simple practical enquiries, comparative and fair tests. • To make systematic and careful observations and, where appropriate take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. • To gather, record, classify and present data in a variety of ways to help in answering questions. • To record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables. • To report on findings from enquiries, including oral and written explanations, displays or	• To plan different types of scientific enquiries to answer questions, including recognizing and controlling variables. • To take measurements using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. • To record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. • To use test results to make predictions to set up further comparative and fair tests. • To report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations.

	presentations of results and conclusions. • To use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions. • To identify similarities, differences or changes related to simple scientific ideas and processes. • To use straightforward scientific evidence to answer questions or to support their findings.	• To identify scientific evidence that has been used to support or refute ideas or arguments.

Learning Objectives

Composite Learning Skills

National Curriculum Requirements

Working Scientifically KS1

General	Observing changes over time	Comparative and fair tests	Identifying and classifying	Looking for naturally occurring patterns and relationships	Researching using secondary sources
Demonstrate curiosity, e.g. ask why?' or 'how?' about the world around them.	Understand that we can gather information about the world through our senses.	When prompted, say what is happening/has happened to things or events.	Sort and match objects and living things in their own way.	Notice what has changed when observing things or events.	Use simple secondary sources, e.g. books, film, internet, to find information.
Understand the concept of 'a question'.	Understand that observation involves all of the senses.	With help, make changes and say what has changed.	Sort and group objects and living things in different ways.	Talk about what they have found out or what they think may happen.	Use information from secondary sources to help answer a question.
Be able to ask a question.	Use simple equipment provided, e.g. hand lenses, to make more accurate observations.	Be able to compare features of two objects.	Recognise similarities and differences.	Begin to recognise links between observations and answers to questions.	Be able to record their findings in charts.

Be able to suggest one way of finding an answer to a question.	Recognise that some observable features may change over time, e.g. the size of a plant.	Be able to identify two variables in an investigation, e.g. water and light when investigating plant growth.	Use simple observable features to compare objects or living things.	With help, begin to notice patterns and relationships.	**Gathering and recording data to help in answering questions.**
Understand that some questions can be answered by testing.	**Observing closely, using simple equipment.**	Suggest a practical way to find something out.	Be able to describe how they sorted objects.	Begin to use simple scientific language to talk about what they have found out.	Make some independent choices about appropriate ways to record data.
With help, identify evidence that can be used to answer questions.	Use a range of equipment correctly to observe and measure.	Be able to identify things to measure and things to observe.	Use observable features of objects to identify them.	Be able to communicate their ideas to a range of audiences in a variety of ways.	Select the best way of presenting information from a range of options.
Present evidence they have collected in simple tables, charts or diagrams.	Be able to select appropriate equipment to observe.	Be able to set up a comparative test.	**Identifying and classifying.**	**Using their observations and ideas to suggest answers to questions.**	
Asking simple questions and recognising that they can be answered in different ways.		**Performing simple tests.**	Begin to classify and identify by linking observable features to already known objects or things.	Use evidence to suggest answers to questions and make predictions.	
Be able to suggest more than one way of finding an answer to a question, e.g. by research, by testing.		Start to recognise when a test is not fair and suggest improvements.	Explain which observable features have led them to classify in a particular way.	Say whether what happened was what they expected.	
Suggest 'testable questions' that can be answered in classroom investigations.					

Learning Objectives

Composite Learning Skills

National Curriculum Requirements

Working Scientifically LKS2

General/asking questions	Observing changes over time	Comparative and fair tests	Identifying and classifying	Looking for naturally occurring patterns and relationships	Recording and reporting findings	Researching and using secondary sources
Be able to raise their own questions about the world around them.	Make observations about everyday phenomena.	Suggest a practical way to find something out.	Use simple observable features to compare objects or living things.	Recognise links between observations and answers to questions.	Use notes, simple tables and standard units.	Use information from secondary sources to help answer a question.

Be able to suggest one way of finding an answer to a question.	Decide what is important or relevant to observe.	Make decisions about which practical method is best to find something out.	Be able to group objects and living things in different ways.	Notice patterns and relationships.	Help to make decisions about how to record and analyse data.	Recognise when and how secondary sources might help answer questions that cannot be answered through practical investigations.
Understand that some questions may not be relevant to enquiries.	Make increasingly careful observations.	Be able to identify two variables in an investigation, e.g. water and light when investigating plant growth.	Talk about criteria for grouping, sorting and classifying.	Look for naturally occurring patterns and relationships and decide what data to collect to identify them.	Make independent choices about appropriate ways to record data.	
Be able to suggest more than one way of finding an answer to a question, e.g. by research, by testing.	Make systematic observations.	Be able to set up a comparative test.	Use observable features of objects to identify them.	Be able to collect data from their own observations and measurements.	**Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables.**	
Suggest 'testable questions' that can be answered in classroom investigations.	Decide for how long to make observations.	Recognise when a simple fair test is necessary to answer a scientific question.	Use simple keys.	With help, look for changes, patterns, similarities and differences in their data.	Use relevant scientific language to discuss their ideas.	
Recognise alternative methods of scientific enquiry used to find answers to questions.	Use a range of equipment correctly to observe and measure.	Be able to identify variables to measure and variables to observe.	Begin to classify and identify by linking observable features to already known objects or things.	Use patterns in their data to draw simple conclusions and answer questions.	Communicate findings in ways that are appropriate to different audiences.	
Make own decisions about which method of enquiry is best to answer a question.	Be able to select appropriate equipment to observe and measure.	With others, help to set up a fair test.	Begin to classify by behavioural features, e.g. conducts electricity, is magnetic.	Use evidence to answer questions and make predictions.	Identify relevant evidence used to draw conclusions.	
Asking relevant questions and using different types of scientific enquiries to answer them.	Use new equipment such as dataloggers appropriately.	Start to recognise when a test is not fair and suggest improvements.	Explain which observable or behavioural features have led them to classify in a particular way.	Say whether what happened was what they expected.	**Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions.**	
Be able to refine a question.	Accurately use standard measures.	**Setting up simple practical enquiries, comparative and fair tests.**	**Identifying differences, similarities or changes related to simple scientific ideas or processes.**	With support, identify new questions arising from the data.	**Using straightforward scientific evidence to answer questions or to support their findings.**	

Draw simple conclusions and talk about what they have found out using some scientific language.	**Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers.**	Be able to develop features of a test to give a better outcome.	Be able, independently, to use simple databases or keys to identify or classify living things, objects or events.	Make predictions for new values within or beyond the data they have collected.	Use scientific language and facts to describe processes and what they have observed.	
Draw simple conclusions and write about what they have found out using some scientific language.	Use an increasing range of standard measures accurately.			Find ways of improving what they have already done.	Explain findings reported and recorded using more complex scientific language.	
Use relevant scientific language to discuss their ideas.	Explain why particular equipment chosen is appropriate to the task.			Link results to their own experiences.		
Use relevant scientific language to communicate their findings.				**Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.**		
Communicate their ideas in ways that are appropriate for different audiences.				Recognise when a result seems unusual when compared with other values.		
Use a variety of written communication methods, e.g. guides, keys, drawings and other pictorial representations which are suggested to them.				Identify when repeated results are necessary.		
Choose their own way of communicating ideas to different audiences.						
Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.						

Learning Objectives

Composite Learning Skills

National Curriculum Requirements

Working Scientifically UKS2

General	Observing and measuring (and observing over time)	Comparative and fair tests	Identifying and classifying	Looking for naturally occurring patterns and relationships	Recording and reporting findings	Researching using secondary sources
Explore and talk about their own ideas.	Make their own decisions about what observations to make, what measurements to use and for how long to make them, and whether to repeat them.	Select and plan the most appropriate type of scientific enquiry to use to answer scientific questions.	Be able, independently, to use simple databases or keys to identify or classify living things, objects or events.	Identify patterns that might be found in the natural environment.	Decide how to record data from a choice of familiar approaches.	Recognise which secondary sources will be most useful to research their ideas and begin to separate opinion from fact.
Ask pertinent questions.	Choose the most appropriate equipment to make measurements and explain how to use it accurately.	Recognise when and how to set up comparative and fair tests and explain which variables need to be controlled and why.	Be able to discuss reasons why living things are placed in one group and not another.	Systematically investigate the relationship between phenomena, e.g. light and shadows.	Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas and talk about how scientific ideas have developed over time.	Use secondary sources, e.g. internet links to research objects, events and phenomena that cannot be experienced in the classroom, e.g. planetary movements, animals from around the world.
Explore ideas and raise different kinds of questions about scientific phenomena.	Recognise that some measurements or observations may need to be repeated.	Be able to state clearly which is the change variable and which is the measurement variable in a fair test.	Suggest reasons for similarities and differences.	Look for different causal relationships in their data and identify evidence that refutes or supports their ideas.	Decide on the most appropriate method to present findings graphically, e.g. using a line graph or bar chart for different types of data.	Gather and record data to help in answering questions.
Refine a scientific question so that it can be tested.	Repeat observations or measurements appropriately.	Systematically identify the effect of changing one variable at a time.	Begin to understand that broad groupings, such as micro-organisms, plants and animals can be subdivided.	Analyse functions, relationships and interactions more systematically.	Justify what type of presentation is appropriate to use.	

Understand that some scientific questions cannot be answered by a particular investigation.	Be able to select appropriate ranges or intervals of measurements.	Recognise that some variables may be more significant than others in investigations.	Identify the positive aspects and limitations of some forms of classification.	Find out about how scientific ideas have changed and developed over time as new evidence is discovered, e.g. ideas about the solar system.	Explain findings using data to identify causal relationships.	
Be able to suggest changes to questions following collection/analysis of data.	Explain how repeating measurements impacts on data collection.	Be able to justify their choice of method as being appropriate to answer their investigative question.	Use and develop keys and other information records to identify, classify and describe living things and materials.	Recognise when evidence supports an idea or not.	**Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.**	
Understand a range of enquiries can be used together to explore an answer to a question.	Recognise when measurements or data are unreliable and be able to take steps to improve this.	Be able to use their results to identify when further tests and observations might be needed.	Create more complex forms of classification tools, e.g. databases, branching keys.	Be able to identify and offer explanations for anomalous results.	**Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations.**	
Recognise key aspects of a scientific question.	**Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.**	Compare their own results with others' and suggest reasons why there may be differences.	Create and use a variety of sources to identify and classify living things, objects and phenomena.	**Identifying scientific evidence that has been used to support or refute ideas or arguments.**		
		Recognise the limitations of tests.				
		Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.				
		Using test results to make predictions to set up further comparative and fair tests.				