Skills and Knowledge Progression
Science: Year 5

Standard	Working at the expected standard (emerging, developing, secure)				Working at greater depth within the expected standard
Working Scientifically	Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.				Pupils can use and apply scientific knowledge and skills with **increasing independence:** 1. Answer questions using evidence gathered from different types of scientific enquiry. 2. Identify and manage variables. 3. Consider how by modifying instrument or technique, measurements can be improved. 4. Identify situations in which taking repeat readings will improve the quality of evidence. 5. Use labelled diagrams to show complex outcomes. 6. Use various ways, as appropriate, to record complex evidence. 7. Draw a conclusions, indicate how trustworthy they are. 8. Identify how an idea is supported or refuted by evidence.
	Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.				
	Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.				
	Using test results to make predictions to set up further comparative and fair tests.				
	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.				
	Identifying scientific evidence that has been used to support or refute ideas or arguments.				
Living Things and Their Habitats	1. Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. 2. Describe the life process of reproduction in some plants and animals.				1. Suggest why some ways of grouping living things may be more useful than others, e.g. why grouping by number of legs is an easy aid to identification. 2. Devise own classification keys to group living things. 3. Describe examples of living things adapting to environmental change, e.g. urban foxes, and examples of extinction due to environmental change.
Animals including humans	1. Describe the changes as humans develop to old age.				Linked to RSE
Properties and Changes of Materials	1. Sort and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets.				1. Recognise that some materials (e.g. toothpaste) cannot be easily classified as solid. liquid or gas. 2. Apply the relationship between rate of evaporation with temperature to everyday contexts.. Suggest patterns in which kinds of materials change state at higher or lower temperatures.
	2. Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution.				
	3. Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating.				

	4. Explain, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic.				
	5. Provide reasoned justifications for their views.				
	6. Show that dissolving, mixing and changes of state are reversible changes.				
	7. 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.				
Earth and Space	1. Describe the movement of the Earth, and other planets, relative to the Sun in the solar system.				1. Identify that the further out a planet is, the longer its orbit is around the Sun. 2. Relate the Moon's orbit of the Earth to the Earth's orbit of the Sun. 3. Recognise that many heavenly bodies are approximately spherical. 4. Explain the effect of a planet in the solar system rotating at a different rate to Earth.
	5. Describe the movement of the Moon relative to the Earth.				
	6. Describe the Sun, Earth and Moon as approximately spherical bodies.				
	7. Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.				
Forces	1. Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object				1. Recognise that gravity acts between all masses, e.g. the Sun and the Earth. 2. Identify ways in which forces that oppose motion may be useful (e.g. bicycle handlebar grips) or a nuisance (e.g. bicycle chain). 3. Explain, with reference to everyday contexts, why a force multiplier might be useful.
	2. Know the effects of air resistance, water resistance and friction, that act between moving surfaces				
	3. Know that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.				