

Skills and Knowledge Progression

Science: Year 4



Standard	Working at the expected standard (emerging, developing, secure)			Working at greater depth within the expected standard
Working Scientifically	Asking relevant questions and using different types of scientific enquiries to answer them.			Pupils can use and apply scientific knowledge and skills with increasing independence : <ol style="list-style-type: none"> 1. Recognise patterns that relate to scientific ideas. 2. Use evidence to produce a simple conclusion. 3. Use evidence to suggest further relevant investigations. 4. Develop relevant, testable questions. 5. Plan investigations using different types of scientific enquiry. 6. Set up comparative and fair tests. 7. Use various equipment, as instructed, repeatedly and with care. 8. Know the importance of using standard units and measure accurately. 9. Use words and diagrams to record findings. 10. Use various ways to record, group and display evidence. 11. Write a conclusion based on evidence.
	Setting up simple practical enquiries, comparative and fair tests.			
	Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers.			
	Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions.			
	Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables.			
	Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.			
	Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.			
	Identifying differences, similarities or changes related to simple scientific ideas and processes.			
Using straightforward scientific evidence to answer questions or to support their findings.				
States of Matter	1. Sort materials into solids, liquids and gases.			<ol style="list-style-type: none"> 1. Apply the relationship between rates of evaporation with temperature to everyday contexts. 2. Suggest patterns in which kinds of materials change state at higher or lower temperatures. 3. Recognise that some materials (e.g. toothpaste) cannot be easily classified as solid. Liquid or gas.
	4. Explain that heating causes melting, and cooling causes freezing.			
	5. Know the melting and freezing point of water.			
	6. Explain evaporation and condensation using practical examples.			
	7. Explain the effect of temperature on evaporation referring to their investigation.			
	8. Know the properties of solids, liquids and gases.			
	9. Explain that melting and freezing are opposite processes that change the state of a material.			
	10. Identify the melting and freezing point of several different materials.			
11. Know the stages of the water cycle.				
Electricity	1. Know common appliances that run on electricity.			<ol style="list-style-type: none"> 1. Compare and contrast appliances that run on mains electricity with those that run on batteries. 2. Identify the functions of components within a circuit.
	2. Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers.			

	<ol style="list-style-type: none"> Show 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. Know that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit. Know some common conductors and insulators, and associate metals with being good conductors. 				<ol style="list-style-type: none"> Investigate graphite as a conductor and relate to other materials. Explain why certain arrangements will not result in the bulb lighting. Explain how altering the location of a switch affects the operation of the circuit.
Animals including humans	<ol style="list-style-type: none"> Record 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. Record and interpret a variety of food chains, identifying producers, predators and prey. 				<ol style="list-style-type: none"> Construct the digestive system. Explain the functions of the digestive system. Identify the types and functions of teeth. Construct and interpret a variety of food chains.
Sound	<ol style="list-style-type: none"> Know how sounds are made, associating some of them with something vibrating. Describe that vibrations from sounds travel through a medium to the ear. Record patterns between the pitch of a sound and features of the object that produced it. Record patterns between the volume of a sound and the strength of the vibrations that produced it. Know that sounds get fainter as the distance from the sound source increases. 				<ol style="list-style-type: none"> Explain with reference to examples how sounds get fainter as the distance from the source increases. Identify generic features that cause the pitch of a note to be changed. Identify generic features that cause the volume of a note to be changed. Group sound-making objects in terms of how they make sounds. Compare the effectiveness of different media in terms of their ability to transmit sound. Explain with reference to examples how sounds get fainter as the distance from the source increases Identify generic features that cause the pitch of a note to be changed
All Living Things	<ol style="list-style-type: none"> 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. Recognise that environments can change and that this can sometimes pose dangers to living things. 				<ol style="list-style-type: none"> Explain the differences in the life cycles of a mammal, an amphibian, an insect and a bird Explain the life process of reproduction in some plants and animals. Give reasons for classifying plants and animals based on specific characteristics.