

Progression of Skills and Knowledge Science

Exploring/ Problem solving		Observing over time	Sorting, classifying and identifying	Fair and comparative testing	Pattern seeking	Researching and analysing secondary sources
Year Group	Skills Working scientifically			Knowledge		
Year 3	<ul style="list-style-type: none">Asking relevant questions and using different types of scientific enquiries to answer them.			Animals Including Humans <ul style="list-style-type: none">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 eatIdentify that humans and some other animals have skeletons and muscles for support, protection and movement Light <ul style="list-style-type: none">recognise that they need light in order to see things and that dark is the absence of lightnotice that light is reflected from surfacesrecognise that light from the sun can be dangerous and that there are ways to protect their eyesrecognise that shadows are formed when the light from a light source is blocked by an opaque objectfind patterns in the way that the size of shadows change Rocks and Fossils <ul style="list-style-type: none">compare and group together different kinds of rocks on the basis of their appearance and simple physical propertiesdescribe in simple terms how fossils are formed when things that have lived are trapped within rockrecognise that soils are made from rocks and organic		
	<ul style="list-style-type: none">Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment.					
	<ul style="list-style-type: none">Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions.					
	<ul style="list-style-type: none">Setting up simple practical enquiries, comparative and fair tests.Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.					
	<ul style="list-style-type: none">Recording findings using simple scientific language, bar charts, and tables.Identifying differences, similarities or changes related to simple scientific ideas and processes.					
	<ul style="list-style-type: none">Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.Using straightforward scientific evidence to answer					

	<p>questions or to support their findings.</p>	<p>matter.</p> <p>Properties and changes of materials</p> <ul style="list-style-type: none">• 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, 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 <p>Plants</p> <ul style="list-style-type: none">• identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers• explore 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 <p>Plants (flowers, pollination and seeds)</p> <ul style="list-style-type: none">• Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.
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Year 4	<ul style="list-style-type: none">Asking relevant questions and using different types of scientific enquiries to answer them			Electricity (4E) <ul style="list-style-type: none">identify common appliances that run on electricityconstruct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzersidentify 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 batteryrecognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuitrecognise some common conductors and insulators, and associate metals with being good conductors States of Matter (4SM) <ul style="list-style-type: none">compare and group materials together, according to whether they are solids, liquids or gasesobserve 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 Sound (4S) <ul style="list-style-type: none">identify how sounds are made, associating some of them with something vibratingrecognise that vibrations from sounds travel through a medium to the ear		
	<ul style="list-style-type: none">Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers.					
	<ul style="list-style-type: none">Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions.Identifying differences, similarities or changes related to simple scientific ideas and processes					
	<ul style="list-style-type: none">Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tablesReporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions					
	<ul style="list-style-type: none">Setting up simple practical enquiries, comparative and fair tests					
	<ul style="list-style-type: none">Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questionsUsing straightforward scientific evidence to answer questions or to support their findings.					

		<ul style="list-style-type: none"> • 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 <p>Living things and their habitats (4LvH)</p> <ul 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 <p>Animals, including humans (4AH)</p> <ul style="list-style-type: none"> • 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 • construct and interpret a variety of food chains, identifying producers, predators and prey. <p>Living things and their habitats (4LvH)</p> <ul style="list-style-type: none"> • recognise that environments can change and that this can sometimes pose dangers to living things.
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Year 5	<ul style="list-style-type: none">Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.			Earth & Space <ul style="list-style-type: none">Describe the movement of the Earth, and other planets, relative to the Sun in the solar systemDescribe the movement of the Moon relative to the EarthDescribe the Sun, Earth and Moon as approximately spherical bodiesUse the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky Forces <ul style="list-style-type: none">Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling objectIdentify the effects of air resistance, water resistance and friction, that act between moving surfacesRecognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect Properties and changes of materials <ul style="list-style-type: none">Compare and group together everyday materials on the basis of their properties, including their hardness, transparency, and conductivity (electrical and thermal)Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic		
	<ul style="list-style-type: none">Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.					
	<ul style="list-style-type: none">Identifying scientific evidence that has been used to support or refute ideas or arguments.					
	<ul style="list-style-type: none">Using test results to make predictions to set up further comparative and fair tests.					
	<ul style="list-style-type: none">Recording results using scientific diagrams and labels.					
	<ul style="list-style-type: none">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.					

		<p>Properties and changes of materials</p> <ul style="list-style-type: none"> • Compare and group together everyday materials on the basis of their properties, including their solubility and response to magnets • 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 • 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 <p>Living things and their habitats</p> <ul style="list-style-type: none"> • Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird • Describe the life process of reproduction in some plants and animals <p>Animals (including humans)</p> <ol style="list-style-type: none"> a. Describe the changes as humans develop to old age
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Year 6	<ul style="list-style-type: none">Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.			Light <ul style="list-style-type: none">Recognise that light appears to travel in straight linesUse 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. Electricity <ul style="list-style-type: none">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. Living Things and their Habitats <ul style="list-style-type: none">Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals.Give reasons for classifying plants and animals based on specific characteristics.		
	<ul style="list-style-type: none">Recording results using scientific diagrams and labels.					
	<ul style="list-style-type: none">Identifying scientific evidence that has been used to support or refute ideas or arguments.					
	<ul style="list-style-type: none">Using test results to make predictions to set up further comparative and fair tests					
	<ul style="list-style-type: none">Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate					
	<ul style="list-style-type: none">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.					

		<p>Evolution and Inheritance</p> <ul style="list-style-type: none"> • 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. <p>Animals (including humans)</p> <ul style="list-style-type: none"> • 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. <p>Science of Sport – second look science</p> <p>Living Things and their Habitats</p> <ul style="list-style-type: none"> • describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals. <p>Properties of Materials</p> <ul style="list-style-type: none"> • compare and group together everyday materials on the basis of their properties. • give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic. <p>Forces</p> <ul style="list-style-type: none"> • explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.
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