

WORKING SCIENTIFICALLY

Aspect	End of Year 1	End of Year 2	End of Year 3	End of Year 4	End of Year 5	End of Year 6
Asking and answering questions	Use everyday language/begin to use simple scientific words to ask or answer a scientific question.	Suggest ideas, ask simple questions and know that they can be answered/investigated in different ways including simple secondary sources, such as books and video clips.	Use ideas to pose questions, independently, about the world around them.	Suggest relevant questions and know that they could be answered in a variety of ways, including using secondary sources such as ICT. Answer questions using straight forward scientific evidence.	Raise different types of scientific questions, and hypotheses.	Pose/select the most appropriate line of enquiry to investigate scientific questions.
Investigating	Follow instructions to complete a simple test individually or in a group.	Do things in the correct order when performing a simple test and begin to recognise when something is unfair.	Discuss enquiry methods and describe a fair test.	Make decisions about different enquiries, including recognising when a fair test is necessary and begin to identify variables.	Plan a range of science enquiries, including comparative and fair tests.	Select and plan the most suitable line of enquiry, explaining which variables need to be controlled and why, in a variety of comparative and fair tests.
Observing	Observe objects, materials and living things and describe what they see.	Observe something closely and describe changes over time.	Make decisions about what to observe during an investigation.	Make systematic and careful observations.	Plan and carry out comparative and fair test, making systematic and careful observations.	Make their own decisions about which observations to make, using test results and observations to make predictions or set up further comparative or fair tests.
Equipment and measuring	Use simple, non-standard measurements in a practical task.	Use simple equipment, such as hand lenses or egg timers to take measurements, make observations and carry out simple tests.	Take accurate measurements using standard units.	Take accurate measurements using standard units and use a range of equipment, including thermometers and data loggers.	Take measurements using a range of scientific equipment with increasing accuracy and precision.	Choose the most appropriate equipment in order to take measurements, explaining how to use it accurately
Identifying and classifying	Sort and group objects, materials and living things, with help, according to simple observational features.	Decide, with help, how to group materials, living things and objects, noticing changes over time and beginning to see patterns.	Talk about criteria for grouping, sorting and categorising, beginning to see patterns and relationships.	Identify similarities/ differences/ changes when talking about scientific processes. Use and begin to create simple keys.	Use and develop keys to identify, classify and describe living things and materials.	Identify and explain patterns seen in the natural environment.
Recording and reporting findings	Talk about their findings and explain what they have found out.	Gather data, record and talk about their findings, in a range of ways, using simple scientific vocabulary.	Record their findings using scientific language and present in note form, writing frames, diagrams, tables and charts.	Choose appropriate ways to record and present information, findings and conclusions for different audiences (e.g. displays, oral or written explanations).	Record data and results of increasing complexity using scientific diagrams, labels, classification keys, tables, bar and line graphs and models.	Choose the most effective approach to record and report results, linking to mathematical knowledge.
Analysing data	Use every day or simple scientific language to ask and/or answer a question on given data.	Identify simple patterns and/or relationships using simple comparative language.	Gather, record and use data in a variety of ways to answer a simple question.	Identify, with help, changes, patterns, similarities and differences in data to help form conclusions. Use scientific evidence to support their findings.	Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas.	Identify and explain causal relationships in data and identify evidence that supports or refutes their findings, selecting fact from opinion.
Drawing conclusions	Explain, with help, what they think they have found out.	Use simple scientific language to explain what they have found out.	Draw, with help, simple conclusion based on evidence from an enquiry or observation.	Use recorded data to make predictions, pose new questions and suggest improvements for further enquiries.	Use a simple mode of communication to justify their conclusions on a hypothesis. Begin to recognise how scientific ideas change over time.	Identify validity of conclusion and required improvement to methodology. Discuss how scientific ideas develop over time.

KNOWLEDGE VOCABULARY

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<p>Animals including humans Fish, Reptiles, Mammals, Birds, Amphibians (+ examples of each) Herbivore, Omnivore, Carnivore, Leg, Arm, Elbow, Head, Ear, Nose, Back, Wings, Beak</p>	<p>Animals including humans Survival, Water, Air, Food, Adult, Baby, Offspring, Kitten, Calf, Puppy, Exercise, Hygiene</p>	<p>Animals including humans Movement, Muscles, Bones, Skull, Nutrition, Skeletons,</p>	<p>Animals including humans Mouth, Tongue, Teeth, Oesophagus, Stomach, Small Intestine, Large Intestine, Herbivore, Carnivore, Canine, Incisor, Molar</p>	<p>Animals including humans Foetus, Embryo, Womb, Gestation, Baby, Toddler, Teenager, Elderly, Growth, Development, Puberty</p>	<p>Animals including humans Circulatory, Heart, Blood Vessels, Veins, Arteries, Oxygenated, Deoxygenated, Valve, Exercise, Respiration</p>
<p>Plants Deciduous, Evergreen trees, Leaves, Flowers (blossom), Petals, Fruit, Roots, Bulb, Seed, Trunk, Branches, Stem</p>	<p>Plants Seeds, Bulbs, Water, Light, Temperature, Growth</p>	<p>Plants Air, Light, Water, Nutrients, Soil, Reproduction, Transportation, Dispersal, Pollination, Flower</p>	<p>Living things and their habitats Vertebrates, Fish, Amphibians, Reptiles, Birds, Mammals, Invertebrates, Snails, Slugs, Worms, Spiders, Insects, Environment, Habitats</p>	<p>Living things and their habitats Mammal, Reproduction, Insect, Amphibian, Bird, Offspring</p>	<p>Living things and their habitats Classification, Vertebrates, Invertebrates, Micro-organisms, Amphibians, Reptiles, Mammals, Insects</p>
<p>Everyday Materials Wood, Plastic, Glass, Paper, Water, Metal, Rock, Hard, Soft, Bendy, Rough, Smooth</p>	<p>Living things and their habitats Living, Dead, Habitat, Energy, Food chain, Predator, Prey,</p>	<p>Rocks Fossils, Soils, Sandstone, Granite, Marble, Pumice, Crystals, Absorbent</p>	<p>States of Matter Solid, Liquid, Gas, Evaporation, Condensation, Particles, Temperature, Freezing, Heating</p>	<p>Properties and changes of materials Hardness, Solubility, Transparency, Conductivity, Magnetic, Filter, Evaporation, Dissolving, Mixing</p>	<p>Evolution and Inheritance Fossils, Adaptation, Evolution, Characteristics, Reproduction, Genetics</p>
<p>Seasonal Changes Summer, Spring, Autumn, Winter, Sun, Day, Moon, Night, Light, Dark</p>	<p>Everyday materials and their uses Hard, Soft, Stretchy, Stiff, Shiny, Dull, Rough, Smooth, Bendy, Waterproof, Absorbent, Opaque, Transparent Brick, Paper, Fabrics, Squashing, Bending, Twisting, Stretching Elastic, Foil</p>	<p>Light Light, Shadows, Mirror, Reflective, Dark, Reflection</p>	<p>Sound Volume, Vibration, Wave, Pitch, Tone, Speaker</p>	<p>Earth and Space Earth, Sun, Moon, Axis, Rotation, Day, Night, Phases of the Moon, star, constellation</p>	<p>Light Refraction, Reflection, Light, Spectrum, Rainbow, Colour</p>
		<p>Forces and magnets Magnetic, Force, Contact, Attract, Repel, Friction, Poles, Push, Pull</p>	<p>Electricity Cells, Wires, Bulbs, Switches, Buzzers, Battery, Circuit, Series, Conductors, Insulators</p>	<p>Forces Air resistance, Water resistance, Friction, Gravity, Newton, Gears, Pulleys</p>	<p>Electricity Cells, Wires, Bulbs, Switches, Buzzers, Battery, Circuit, Series, Conductors, Insulators, Amps, Volts, Cell</p>

