Science Topics Y1

Working Scientifically

Can I ask simple scientific questions?
Can I recognise that questions can be answered in different ways?
Can I use simple equipment to make observations?
Can I carry out simple tests?
Can I identify and classify things?
Can I suggest what I have found out from my observations?
Can I gather and record data?
Can I use simple data to answer questions?

Seasonal Changes

Can I observe the changes across all seasons? (What would you wear? How would you feel? What would you see?)
Can I observe weather associated with the seasons and how length of day varies? (Opportunity to use charts and table to read and record data collected)

Animals including humans

Can I identify, name, draw and label the basic parts of the human body?
Can I say which part of the body is associated with which sense?
Can I use my senses to compare different textures, sounds and smells? (Blind tasting, can you guess the sound? What is in the bag just by touching it, what am I?)
Can I name a variety of animals including fish, amphibians, reptiles, birds and mammals?
Can I sort animals into categories?
Can I describe and compare the structure of a variety of animals?
Comparing similarities and differences between types of animals (e.g. a fish and snake both have a tail, are they the same? Venn diagrams – allow pupils to determine the categories but then justify their groups)
Can I classify and name animals as herbivores, carnivores and omnivores? (Lots of opportunities for singing and actions here)

Plants

Can I identify and name a variety of common wild and garden plants including deciduous and evergreen trees? (Photos or trees and plants, learning walks around the school with identification charts or books)
Can I name the petals, stem, leaf and root of a plant? (Use poetry)
Can I name the roots, trunk, branches and leaves of a tree? (BP resource – Jack and the Beanstalk)
Can I keep a record of how plants grow over time? (Time lapse videos, growing, observing and measuring classroom plants

Uses of Everyday Materials

Can I distinguish between an object and the material from which it is made?

Can I identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock?

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Can I describe the simple physical properties of everyday materials? Can I compare and group together a variety of everyday materials on the basis of their simple physical properties?		

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Science Topics Y3

Working Scientifically

Can I ask relevant questions and use different types of scientific enquiries to answer them?
Can I set up simple practical enquiries, comparative and fair tests?
Can I make systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers?
Can I gather, record, classify and present data in a variety of ways to help in answering questions?
Can I record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables?
Can I report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions?
Can I use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions?
Can I identify differences, similarities or changes related to simple scientific ideas and processes?
Can I use straightforward scientific evidence to answer questions or to support my findings?

Plants

Can I identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers
Can I 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.

Can I investigate the way in which water is transported within plants?
Can I explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal?

Animals including humans

Can I 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 eat?

Can I identify that humans and some other animals have skeletons and muscles for support, protection and movement?

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Light Can I recognise that we need light in order to see things and that dark is the absence of light? Can I notice that light is reflected from surfaces? Can I recognise that light from the sun can be dangerous and that there are ways to protect our eyes? Can I recognise that shadows are formed when the light form a source is blocked by an opaque object? Can I find patterns in the way that the size of shadows change?	**Rocks** Can I compare and group together different kinds of rocks on the basis of their appearance and simple physical properties? Can I describe in simple terms how fossils are formed when things that have lived are trapped within rock? Can I recognise that soils are made from rocks and organic matter?	**Forces and Magnets** Can I explore and describe how objects move on different surfaces? Can I describe how some forces need contact between two objects, but some forces can act at distance ie magnetic forces? Can I observe how magnets attract or repel each other and attract some materials and not others? Can I 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? Can I describe magnets as having two poles and predict whether two magnets will attract or repel each other, depending on which poles are facing?

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Science Topics Y5

Working Scientifically

Can I plan different types of scientific enquiry?
Can I control variables in an enquiry?
Can I measure accurately and precisely using a range of equipment?
Can I record data and results using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs?
Can I use the outcome of test results to make predictions and set up a further comparative fair test?
Can I report findings from enquiries in a range of ways?
Can I explain a conclusion from an enquiry?
Can I explain causal relationships in an enquiry?
Can I relate the outcome from an enquiry to scientific knowledge in order to state whether evidence supports or refutes an argument or theory?
Can I read, spell and pronounce scientific vocabulary accurately?

Animals including humans

Can I describe the changes as humans develop to old age?

Earth and Space

Can I describe and explain the movement of the Earth and other planets relative to the Sun?
Can I describe and explain the movement of the Moon relative to the Earth?
Can I explain and demonstrate how night and day are created?
Can I describe the Sun, Earth and Moon (using the term spherical)?

Living things and their habitats

Can I describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird?
Can I describe the process of reproduction in some plants and animals?

Properties and changes of materials

Can I compare and group materials based on their properties (e.g. hardness, solubility, transparency, conductivity, [electrical & thermal], and response to magnets)?
Can I describe how a material dissolves to form a solution; explaining the process of dissolving?
Can I describe and show how to recover a substance from a solution?
Can I use knowledge of solids, liquids and gases to decide how mixtures might be separated?
Can I demonstrate how materials can be separated (e.g. through filtering, sieving and evaporating)?
Can I explain and demonstrate that some changes are reversible and some are not?

Forces

Can I explain that unsupported objects fall towards Earth because of the force of gravity acting between the Earth and the object?
Ca I identify the effects of air resistance, water resistance and friction that act between moving surfaces?
Can I recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect?

	Can I explain how some changes result in the formation of a new material and that this is usually irreversible? Can I explain the changes associated with burning and the action of acid on bicarbonate of soda? Can I discuss reversible and irreversible changes? Can I give evidenced reasons why materials should be used for specific purposes?	