



Science KS2 National Curriculum Content Mapping

Progression in Science I am a Scientist



To enable pupils to broaden their scientific view of the world around them.
To explore, talk about, test and develop ideas about everyday phenomena and the relationships between living things and familiar environments, and by beginning to develop their ideas about functions, relationships and interactions.
To ask their own questions about what they observe and make some decisions about which types of scientific enquiry are likely to be the best ways of answering them, including observing changes over time, noticing patterns, grouping and classifying things, carrying out simple comparative and fair tests and finding things out using secondary sources of information.
To draw simple conclusions and use some scientific language, first, to talk about and, later, to write about what they have found out.

National Curriculum KS2

Working Scientifically	Plants	Animals including Humans	Living things and their habitats	Rocks	Light	Sound	Electricity	Forces and Magnets	States of Matter
<ul style="list-style-type: none"> Ask relevant questions and use different types of scientific enquiries to answer them. Set up simple practical enquiries, comparative and fair tests. Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. Gather, record, classify and present data in a variety of ways to help in answering questions. Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables. Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions. Identify differences, similarities or changes related to simple scientific ideas and processes. Use straightforward scientific evidence to answer questions or to support their findings. 	<p>Year 3</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. explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. <p>Understand the relationship between plant structure and function: the idea that every part has a job to do. Explore questions that focus on the role of the roots and stem in nutrition and support, leaves for nutrition and flowers for reproduction. Sc1 - Compare the effect of different factors on plant growth, for example, the amount of light, the amount of fertiliser; discovering how seeds are formed by observing the different stages of plant life cycles over a period of time; looking for patterns in the structure of fruits that relate to how the seeds are dispersed. Observe how water is transported in plants, for example, by putting cut, white carnations into coloured water and observing how water travels up the stem to the flowers.</p>	<p>Year 3</p> <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 eat. Identify that humans and some other animals have skeletons and muscles for support, protection and movement. <p>To learn about the importance of nutrition and should be introduced to the main body parts associated with the skeleton and muscles, finding out how different parts of the body have special functions. Sc1 - Identify and group animals with and without skeletons and observing and comparing their movement; exploring ideas about what would happen if humans did not have skeletons. Compare and contrast the diets of different animals (including their pets) and decide ways of grouping them according to what they eat. Research different food groups and how they keep us healthy and design meals based on what they find out.</p> <p>Year 4</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>Know the main body parts associated with the digestive system, for example, mouth, tongue, teeth, oesophagus, stomach and small and large intestine and explore questions that help them to understand their special functions. Sc1 - Compare the teeth of carnivores and herbivores, and suggesting reasons for differences; finding out what damages teeth and how to look after them. Draw and discuss their ideas about the digestive system and compare them with models or images.</p>	<p>Year 4</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. Recognise that environments can change and that this can sometimes pose dangers to living things. <p>Use the local environment throughout the year to raise and answer questions that help them to identify and study plants and animals in their habitat. Identify how the habitat changes throughout the year. Explore possible ways of grouping a wide selection of living things that include animals and flowering plants and non-flowering plants. Begin to put vertebrate animals into groups such as fish, amphibians, reptiles, birds, and mammals; and invertebrates into snails and slugs, worms, spiders, and insects. Plants can be grouped into categories such as flowering plants (including grasses) and non-flowering plants, such as ferns and mosses. Explore examples of human impact (both positive and negative) on environments, for example, the positive effects of nature reserves, ecologically planned parks, or garden ponds, and the negative effects of population and development, litter or deforestation. Sc1 - Use and make simple guides or keys to explore and identify local plants and animals; making a guide to local living things; raising and answering questions based on their observations of animals and what they have found out about other animals that they have researched.</p>	<p>Year 3</p> <ul style="list-style-type: none"> Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties. Describe in simple terms how fossils are formed when things that have lived are trapped within rock. Recognise that soils are made from rocks and organic matter. <p>Explore different kinds of rocks and soils, including those in the local environment. Sc1 - Observing rocks, including those used in buildings and gravestones, and exploring how and why they might have changed over time; using a hand lens or microscope to help them to identify and classify rocks according to whether they have grains or crystals, and whether they have fossils in them. Research and discuss the different kinds of living things whose fossils are found in sedimentary rock and explore how fossils are formed. Explore different soils and identify similarities and differences between them and investigate what happens when rocks are rubbed together or what changes occur when they are in water. Raise and answer questions about the way soils are formed.</p>	<p>Year 3</p> <ul style="list-style-type: none"> Recognise that they need light in order to see things and that dark is the absence of light. Notice that light is reflected from surfaces recognise that light from the sun can be dangerous and that there are ways to protect their eyes. Recognise that shadows are formed when the light from a light source is blocked by an opaque object. Find patterns in the way that the size of shadows change. <p>Explore what happens when light reflects off a mirror or other reflective surfaces, including playing mirror games to help them to answer questions about how light behaves. Think about why it is important to protect their eyes from bright lights. Look for, and measure, shadows, and find out how they are formed and what might cause the shadows to change. Sc1 - Look for patterns in what happens to shadows when the light source moves or the distance between the light source and the object changes.</p>	<p>Year 4</p> <ul style="list-style-type: none"> Identify how sounds are made, associating some of them with something vibrating. Recognise that vibrations from sounds travel through a medium to the ear. 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>Explore and identify the way sound is made through vibration in a range of different musical instruments from around the world; and find out how the pitch and volume of sounds can be changed in a variety of ways. Sc1 - Find patterns in the sounds that are made by different objects such as saucepan lids of different sizes or elastic bands of different thicknesses. They might make earmuffs from a variety of different materials to investigate which provides the best insulation against sound. They could make and play their own instruments by using what they have found out about pitch and volume.</p>	<p>Year 4</p> <ul style="list-style-type: none"> Identify common appliances that run on electricity Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers Identify 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 Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit Recognise some common conductors and insulators, and associate metals with being good conductors. <p>Construct simple series circuits, trying different components, for example, bulbs, buzzers and motors, and including switches, and use their circuits to create simple devices. Draw the circuit as a pictorial representation, not necessarily using conventional circuit symbols at this stage; these will be introduced in year 6. Learn about precautions for working safely with electricity. Sc1 - Observe patterns, for example, that bulbs get brighter if more cells are added, that metals tend to be conductors of electricity, and that some materials can and some cannot be used to connect across a gap in a circuit.</p>	<p>Year 3</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>Observe that magnetic forces can act without direct contact, unlike most forces, where direct contact is necessary (for example, opening a door, pushing a swing). Explore the behaviour and everyday uses of different magnets (for example, bar, ring, button and horseshoe). Sc1 - Compare how different things move and group them; raising questions and carrying out tests to find out how far things move on different surfaces and gathering and recording data to find answers their questions. Explore the strengths of different magnets and finding a fair way to compare them; sorting materials into those that are magnetic and those that are not; looking for patterns in the way that magnets behave in relation to each other and what might affect this, for example, the strength of the magnet or which pole faces another. Identify how these properties make magnets useful in everyday items and suggesting creative uses for different magnets.</p>	<p>Year 4</p> <ul style="list-style-type: none"> Compare and group materials together, according to whether they are solids, liquids or gases Observe 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. <p>Explore a variety of everyday materials and develop simple descriptions of the states of matter (solids hold their shape; liquids form a pool not a pile; gases escape from an unsealed container). Observe water as a solid, a liquid and a gas and should note the changes to water when it is heated or cooled Sc1 - Group and classify a variety of different materials; exploring the effect of temperature on substances such as chocolate, butter, cream (for example, to make food such as chocolate crispy cakes and ice-cream for a party). Research the temperature at which materials change state, for example, when iron melts or when oxygen condenses into a liquid. Observe and record evaporation over a period of time, for example, a puddle in the playground or washing on a line, and investigate the effect of temperature on washing drying or snowmen melting.</p>

