



## Working Scientifically

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

Investing in

the UNIQUENESS

of each individual

"I Am Fearfully And Wonderfully Made"  
– Psalms 139 v14

Plants	Animals Including Humans	Rocks	Light	Forces and Magnets
<ul style="list-style-type: none"> <li>• I can identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers</li> <li>• I can 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</li> <li>• I can investigate the way in which water is transported within plants</li> <li>• I can explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.</li> </ul>	<ul style="list-style-type: none"> <li>• I can 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</li> <li>• I can identify that humans and some other animals have skeletons and muscles for support, protection and movement.</li> </ul>	<ul style="list-style-type: none"> <li>• I can compare and group together different kinds of rocks on the basis of their appearance and simple physical properties</li> <li>• I can describe in simple terms how fossils are formed when things that have lived are trapped within rock</li> <li>• I can recognise that soils are made from rocks and organic matter.</li> </ul>	<ul style="list-style-type: none"> <li>• I can recognise that they need light in order to see things and that dark is the absence of light</li> <li>• I can notice that light is reflected from surfaces</li> <li>• I can recognise that light from the sun can be dangerous and that there are ways to protect their eyes</li> <li>• I can recognise that shadows are formed when the light from a light source is blocked by a solid object</li> <li>• I can find patterns in the way that the size of shadows change.</li> </ul>	<ul style="list-style-type: none"> <li>• I can compare how things move on different surfaces</li> <li>• I can notice that some forces need contact between two objects, but magnetic forces can act at a distance</li> <li>• I can observe how magnets attract or repel each other and attract some materials and not others</li> <li>• I can 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</li> <li>• I can describe magnets as having two poles</li> <li>• I can predict whether two magnets will attract or repel each other, depending on which poles are facing.</li> </ul>

## Guidance

Plants	Animals Including Humans	Rocks	Light	Forces and Magnets
<p>Pupils should be introduced to the relationship between structure and function: the idea that every part has a job to do. They should explore questions that focus on the role of the roots and stem in nutrition and support, leaves for nutrition and flowers for reproduction.</p> <p><b>Note:</b> Pupils can be introduced to the idea that plants can make their own food, but at this stage they do not need to understand how this happens.</p>	<p>Pupils should continue 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.</p>	<p>Linked with work in geography, pupils should explore different kinds of rocks and soils, including those in the local environment.</p>	<p>Pupils should 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. They should think about why it is important to protect their eyes from bright lights. They should look for, and measure, shadows, and find out how they are formed and what might cause the shadows to change.</p> <p><b>Note:</b> Pupils should be warned that it is not safe to look directly at the Sun, even when wearing dark glasses.</p>	<p>Pupils should 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). They should explore the behaviour and everyday uses of different magnets (for example, bar, ring, button and horseshoe).</p>

### Working Scientifically

Pupils might work scientifically by: comparing 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. They might 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.

Pupils might work scientifically by: identifying and grouping animals with and without skeletons and observing and comparing their movement; exploring ideas about what would happen if humans did not have skeletons. They might compare and contrast the diets of different animals (including their pets) and decide ways of grouping them according to what they eat. They might research different food groups and how they keep us healthy and design meals based on what they find out.

Pupils might work scientifically by: 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. Pupils might research and discuss the different kinds of living things whose fossils are found in sedimentary rock and explore how fossils are formed. Pupils could 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. They can raise and answer questions about the way soils are formed.

Pupils might work scientifically by: looking for patterns in what happens to shadows when the light source moves or the distance between the light source and the object changes.

Pupils might work scientifically by: comparing how different things move and grouping 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; exploring 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; identifying how these properties make magnets useful in everyday items and suggesting creative uses for different magnets.

