



Working Scientifically			
	Questioning	Practical skills, observation, planning	Recording, summarising and evaluating.
Year 3	Asking relevant questions and using different types of scientific enquiries to answer them.	<p>Setting up simple practical enquiries, comparative and fair tests</p> <p>Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers</p>	<p>Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions</p> <p>Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables</p> <p>Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions</p> <p>Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions</p> <p>Identifying differences, similarities or changes related to simple scientific ideas and processes.</p> <p>Using straightforward scientific evidence to answer questions or to support their findings.</p>

Year 3 – Animals including humans	
Recall	<p><b>Materials and states of matter- Year 2</b></p> <p>Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses</p> <p>Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching</p>

	Vocabulary: squashing, bending, twisting, stretching, material, use, solid, change, shape, reduce, reuse, recycle, properties, identify, groups
End Point Disciplinary Knowledge  (National Curriculum Statements)	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.
Sequence of Learning / Contextual Knowledge	<ul style="list-style-type: none"> <li>• Identify that humans have bones for support, protection and movement</li> <li>• Discuss how bones affect what we can do</li> <li>• Identify that humans have muscles for support, protection and movement</li> <li>• Identify that some other animals have bones for support protection and movement</li> <li>• Understand hat animals including humans, need the right type of nutrition</li> </ul>
Coverage within school:	<ul style="list-style-type: none"> <li>• Year 1</li> <li>• Year 2</li> <li>• Year 3</li> <li>• Year 4</li> <li>• Year 5</li> <li>• Year 6</li> </ul>
Key Vocabulary	Joints, tendons, muscles, invertebrates, vertebrates, organs, healthy, alive, protein, carbohydrates, saturated fats, unsaturated fats, energy, vitamins, minerals, fibre, water.
Teacher Assessment	
Possible Misconceptions	Children may have misconceptions about the bones in our body and where they are. They may think we have fewer bones and that the bones do not cover our whole body. Children may also think that animals have the same skeleton as humans. Children may have misconceptions about muscles. Some children think that only males have muscles but children need to understand that all humans have muscles in order to move. Children may have misconceptions about the word diet. We need to explain that a diet just means what an animal eats e.g. a shark's diet is smaller fish. Some children may have heard this term used when people want to lose weight.
Class Teacher notes (to inform next year, not to be published online)	

## Year 3 – Rocks

<p>Recall</p>	<p><b>Living things and their habitats- Year 2</b></p> <p>Explore and compare the differences between things that are living, dead, and things that have never been alive.</p> <p>Identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other</p> <p>Identify and name a variety of plants and animals in their habitats, including microhabitats</p> <p>Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food.</p> <p>Vocabulary- living, dead, never been alive, habitat, microhabitat, food chain, predator, prey, producer.</p>
<p>End Point  <b>Disciplinary Knowledge</b>          (National Curriculum Statements)</p>	<p>Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties.</p> <p>Describe in simple terms how fossils are formed when things that have lived are trapped within rock.</p> <p>Recognise that soils are made from rocks and organic matter.</p>
<p>Sequence of Learning / Contextual Knowledge</p>	<ul style="list-style-type: none"> <li>• Compare and group together different kinds of rocks on the basis of their appearance</li> <li>• Compare and group together different kinds of rocks on the basis of their physical properties</li> <li>• Explain how some rocks are formed</li> <li>• Explain how the Earth is made up of different layers of rocks and soils</li> <li>• Investigate different soils</li> </ul>

	<ul style="list-style-type: none"> <li>Describe how fossils are formed when things that have lived are trapped within rock</li> </ul>
Coverage within school:	<ul style="list-style-type: none"> <li>Year 3</li> </ul>
Key Vocabulary	Mesomorphic, igneous, sedimentary, fossils, soils, organic matter, sedimentation, magma, lava, permeable, impermeable, fossilisation, erosion, palaeontology
Teacher Assessment	
Possible Misconceptions	Children may think that all rocks are the same and all soils are the same. Children may not know that rocks are formed over time, they might just think that they have always been there. Children may not think that the Earth is made fully of different types of rock. Children may struggle to grasp that the centre of the Earth is molten rock as they will only understand rocks as being hard and strong.
Class Teacher notes (to inform next year, not to be published online)	

Year 3 – Light	
Recall	<p><b>Animals including humans- Year 2</b></p> <p>Compare how animals from different classifications, including humans, have offspring which grow into adults</p> <p>Find out about and describe the basic needs of animals, including humans, for survival (water, food and air)</p> <p>Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.</p> <p>Vocabulary- fish, amphibians, reptiles, birds, mammals, offspring, hygiene, exercise, water, food, air.</p>
End Point	Recognise that they need light in order to see things and that dark is the absence of light.

<p><b>Disciplinary Knowledge</b></p> <p>(National Curriculum Statements)</p>	<p><b>Notice that light is reflected from surfaces.</b></p> <p>Recognise that light from the sun can be dangerous and that there are ways to protect their eyes.</p> <p><b>Recognise that shadows are formed when the light from a light source is blocked by an opaque object.</b></p> <p><b>Find patterns in the way that the size of shadows changes.</b></p>
<p>Sequence of Learning / Contextual Knowledge</p>	<ul style="list-style-type: none"> <li>• Recognise that there needs to be light in order to see things</li> <li>• Recognise that darkness is the absence of light</li> <li>• Notice that light is reflected from surfaces</li> <li>• Recognise that light from the Sun can be dangerous</li> <li>• Understand that there are ways to protect your eyes and skin from the Sun</li> <li>• Recognise that shadows are formed when light from a light source is blocked by an opaque object</li> <li>• Know that shadows take on the shape of the opaque object</li> <li>• Begin to find patterns in the way that the length of shadows change</li> <li>• Recognise that light is reflected from surfaces</li> </ul>
<p>Coverage within school:</p>	<ul style="list-style-type: none"> <li>• Year 3</li> <li>• Year 6</li> </ul>
<p>Key Vocabulary</p>	<p>Light, dark, pupil, source, UV light, natural light, manmade light, dangers, protection, shadow, opaque, transparent, translucent, reflection.</p>
<p>Teacher Assessment</p>	
<p>Possible Misconceptions</p>	<p>Children may think that the Moon and other shiny/reflective objects are light sources as they appear to shine however, they are not. The Moon reflects light from the Sun (it does not give on its own light) and cat's eyes, mirrors, reflective material on clothing also only reflect light (they are not light sources). Children may think that you see things because light comes out of your eyes. Misconceptions about shadows often centre around the position of the object, light source and shadow. The shadow always forms on the opposite side of the object from the light source; the shadow is a similar shape as the object and the base of the shadow always touches the object.</p>
<p>Class Teacher notes (to inform next year, not to be published online)</p>	

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Year 3 – Plants	
Recall	<p><b>Plants- Year 2</b></p> <p>Observe and describe how seeds and bulbs grow into mature plants.</p> <p>Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.</p> <p>Vocabulary- seeds, bulbs, water, light, temperature, growth</p>
End Point Disciplinary Knowledge (National Curriculum Statements)	<p>Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers.</p> <p>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> <p>Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.</p>
Sequence of Learning / Contextual Knowledge	<ul style="list-style-type: none"> <li>• Explore the requirements of plants for life and growth</li> <li>• Identify the parts of a plant</li> <li>• Identify, locate and describe the function of different parts of flowering plants</li> <li>• Identify, locate and describe the function of the roots in plants</li> <li>• Investigate the way in which water is transported within plants</li> <li>• Explore the part that flowers play in the life cycle of flowering plants, including pollination</li> <li>• Explore the part that flowers play in the life cycle of flowering plants, including seed formation and seed dispersal.</li> </ul>
Coverage within school:	<ul style="list-style-type: none"> <li>• Year 1</li> <li>• Year 2</li> </ul>

	<ul style="list-style-type: none"> <li>Year 3</li> </ul>
Key Vocabulary	Roots, stem/trunk, leaves, flowers, nutrients, air, light, pollination, seed formation, seed dispersal, stamen, sepal, petal, fertilisation
Teacher Assessment	
Possible Misconceptions	Children may not realise that plants are living things and that they can die. They may only think things with faces and brains are alive. Children may not know that plants have roots in the ground that help the plant. Children may think that all seeds look the same so we need to make sure that we allow them to explore and observe a variety of seeds and bulbs.
Class Teacher notes (to inform next year, not to be published online)	

Year 3 – Forces and Magnets	
Recall	<p><b>Seasonal Change- Year 1</b></p> <p>Observe changes across the four seasons</p> <p>Observe and describe weather associated with the seasons and how day length varies</p> <p>Vocabulary: Spring, Summer, Autumn, Winter, weather, day length, temperature</p>
End Point Disciplinary Knowledge (National Curriculum Statements)	<p>Compare how things move on different surfaces.</p> <p>Notice that some forces need contact between two objects, but magnetic forces can act at a distance.</p> <p>Observe how magnets attract or repel each other and attract some materials and not others.</p> <p>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.</p> <p>Describe magnets as having two poles</p>

	Predict whether two magnets will attract or repel each other, depending on which poles are facing.
Sequence of Learning / Contextual Knowledge	<ul style="list-style-type: none"> <li>• Compare how different things move</li> <li>• Compare how objects move on different surfaces</li> <li>• Explore how magnetic forces act at a distance</li> <li>• Compare and group various everyday materials based on whether they are attracted to a magnet</li> <li>• Predict whether two magnets will attract or repel each other, depending on which poles are facing</li> <li>• Experiment if all magnets are the same strength using simple scientific vocabulary</li> </ul>
Coverage within school:	<ul style="list-style-type: none"> <li>• Year 3</li> <li>• Year 5 (forces)</li> </ul>
Key Vocabulary	Friction, gravity, poles, repel, attract, metal, magnetic, non-magnetic, surfaces, rough, smooth, push, pull
Teacher Assessment	
Possible Misconceptions	<p>Children may think that <b>all metals are magnetic</b>. This is false, as only iron, nickel and cobalt are magnetic. Children might think that <b>all silver-coloured objects are attracted to a magnet</b>. This is not true, as aluminium is silver in colour but is not attracted to a magnet. Children might think that <b>bigger magnets are stronger than smaller magnets</b>.</p> <p>This is not true, as the size of the magnet is not directly related to its strength.</p>
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