

Science Year 3

Key Threshold Concepts	<u>Scientific attitudes</u>
<ul style="list-style-type: none"> • Science is about working objectively, modifying explanations to take account of new evidence and ideas and subjecting results to peer review. • Living things can be classified into broad groups based on similarities and differences. • Everyday materials can be grouped together on the basis of their properties • Some changes result in the formation of new materials and this is not usually reversible 	<ul style="list-style-type: none"> • Understand the world scientifically by exploring, talking about, testing and developing ideas about everyday phenomena and the relationships functions and interactions between living things and familiar environments

Working Scientifically Key Skills		
Experimental skills and investigations	Analysis and Evaluation	Measurement
<ul style="list-style-type: none"> • I can ask relevant questions and using different types of scientific enquiries to answer them • I can setting up simple practical enquiries, comparative and fair tests • 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 	<ul style="list-style-type: none"> • I can report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions • 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 findings • I can use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions. 	<ul style="list-style-type: none"> • I can make systematic and careful observations and where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers

Scientific Enquiry Skills				
Observation over time	Pattern Seeking	Identifying, classifying and grouping	Comparative and Fair Testing	Research
<ul style="list-style-type: none"> • I can talk about things changing and decide when questions can be answered by observing over time • I can decide what observations to make, how often and what equipment to use • I can use a range of equipment to collect data using standard measures • I can make records using tables and bar charts • I can interpret graphs produced by data loggers 	<ul style="list-style-type: none"> • I can talk about where patterns may be found and decide when questions can be answered by pattern seeking • I can decide on which sets of data to collect, what observations to make and what equipment to use • I can use a range of equipment to collect data using standard measures • I can make records using tables, bar charts and simple scatter graphs 	<ul style="list-style-type: none"> • I can talk about criteria to use to sort and classify things • I can decide what equipment to use to identify and classify things • I can talk about things that can be grouped and decide when questions can be answered by sorting and classifying • I can carry out simple tests to sort and classify according to properties or behaviour • I can use Carroll diagrams and Venn diagrams to sort things • I can use simple keys and branching databases to identify things • I can make simple branching data bases(keys) for things that have clear differences 	<ul style="list-style-type: none"> • I can talk about links between cause and effect and with help pose a fair test question • I can plan a fair test • I can suggest ways to improve fair tests • I can decide what data to collect • I can use a range of equipment to collect data using standard measures • I can draw simple conclusions from fair tests • I can talk about and explain, simple causal relationships using some scientific language 	<ul style="list-style-type: none"> • I can talk about how things are and the way they work and decide when questions can be answered by research using secondary sources • I can use information sources to find the information needed • I can use data from other pupils • I can record what I have found out in my own words • I can present information in different ways • I can draw conclusions from what I have found out from different sources • I can talk about what the information and data means using scientific language

Vocabulary					
<ul style="list-style-type: none"> • Identify • investigate • observation 	<ul style="list-style-type: none"> • graph • measure • diagram • patterns • predict 	<ul style="list-style-type: none"> • data • improve • thermometer, data logger • compare 	<ul style="list-style-type: none"> • similarity • classify • construct • interpret • key 	<ul style="list-style-type: none"> • Conclusion • fair • comparative and fair test 	<ul style="list-style-type: none"> • Evidence • systematic • accurate measurements

- relevant
- questions
- scientific enquiry
- secondary sources

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Key Knowledge				
Y3				
Biology		Chemistry	Physics	
Plants	Animals including Humans	Rocks	Light	Forces
<ul style="list-style-type: none"> I know the functions of different parts of flowering plants: roots, stem/trunk, leaves and flower I know 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 I know the way in which water is transported within plants. I know the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. 	<ul style="list-style-type: none"> I know 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 I know that humans and some other animals have skeletons and muscles for support, protection and movement. 	<ul style="list-style-type: none"> I know the names of different types of rocks. I know the simple physical properties of rocks and know how to group them together on the basis of their properties and appearance. I know that fossils are formed with things that have lived are trapped within rock I know that soils are made from rocks and organic matter 	<ul style="list-style-type: none"> I know that light is needed in order to see things and that dark is the absence of light I know that light is reflected from surfaces I know that light from the sun can be dangerous and that there are ways to protect our eyes I know that shadows are formed when the light from a light source is blocked by a solid object I know that the size of shadows change and explain why. 	<ul style="list-style-type: none"> I know how things move on different surfaces I know some forces need contact between two objects but magnetic forces can act at a distance I know how magnets attract or repel each other and attract some materials and not others. I know a variety of everyday materials that are attracted to a magnet and are magnetic. I know a variety of materials that are not attracted to a magnet and are not magnetic. I know magnets have two poles I know whether two magnets will attract or repel each other, depending on which poles are facing.
Vocabulary				
<p>structure – flowering plants, roots, stem/ trunk, leaves, flowers</p> <p>function – nutrition, support, reproduction, makes own food</p> <p>requirements for life and growth – air, light, water, nutrients from the soil, room to grow, fertiliser, temperature, absorb</p> <p>life cycle - flowers pollination, seed formation, seed dispersal, transported</p>	<p>nutrition, vitamins, minerals, fat, protein, nutrients, Protein, Vitamins, Minerals, Fat</p> <p>Dietary fibre, Balanced diet, carbohydrates, fibre water</p> <p>skeletons - support, protection, skulls – brain ribs – heart, lungs joint muscles- movement, pull, contract relax Brain</p> <p>Blood vessels, Heart ,Skull, Ribs, Spine, Backbone, ,Joints, Sockets, Bones ,Tendons</p> <p>Vertebrates</p> <p>Invertebrates</p> <p>Endoskeleton</p> <p>exoskeleton</p>	<p>Rock, Stone, Pebble, Boulder, Absorb water</p> <p>Soil</p> <p>Fossil, Grains, Crystals, Layers , Texture</p> <p>Molten magma</p> <p>marble, chalk, granite, sandstone, slate</p> <p>sandy soil, clay soil, chalky soil, peat</p> <p>Erosion, Particles, Physical properties, Porous</p> <p>Permeable / impermeable</p>	<p>light, see, dark, reflect, reflective, surface, natural, star, Sun, Moon, artificial, torch, candle, lamp, translucent, transparent</p> <p>Block / absorb, Direction of light, Opaque</p> <p>Translucent, Bright, Dim, Light beam, sunlight</p> <p>Light spectrum, shadow, absence,</p>	<p>force, push, pull, open, surface, magnet, magnetic, attract, repel, magnetic, poles, north, south, metal, iron, steel, gravity, Direction of force, Air resistance, streamlined, Friction, Force-meter, Strength, Bar magnet</p> <p>Ring magnet, Horse-shoe magnet, Newton,</p> <p>Magnetic materials – iron, steel, nickel</p> <p>Not magnetic – aluminium, copper, gold, silver, wood, plastic</p>