



Knowle CE Primary Academy

Medium Term Plan: SCIENCE




YEAR: 3

TERM: Autumn Term 1:1

TITLE: Rocks

	COHERENCE & CREDIBILITY	CREATIVITY - Working Scientifically	COMPASSION & Appreciation of Significant Scientists	COMMUNITY
REVISION / REMIND / REVISIT - Builds on ..	<p>NC Links</p> <ul style="list-style-type: none"> To compare and group different types of rocks To describe in simple terms how fossils are formed To recognise that soils are made from rocks and organic matter <p>Key Learning</p> <ul style="list-style-type: none"> Rock is a naturally occurring material. There are different types of rock e.g. sandstone, limestone, slate etc. which have different properties. Rocks can be hard or soft. They have different sizes of grain or crystal and they may absorb water. Rocks can be different shapes and sizes (stones, pebbles, boulders). Soils are made up of pieces of ground down rock which may be mixed with plant and animal material (organic matter). The type of rock, size of rock piece and the amount of organic matter affect the property of the soil. Some rocks contain fossils. Fossils were formed millions of years ago. When plants and animals died, they fell to the seabed. They became covered and squashed by other material. Over time the dissolving animal and plant matter is replaced by minerals from the water. <p>Vocabulary</p> <p>Rock, stone, pebble, boulder, grain, crystals, layers, hard, soft, texture, absorb water, soil, fossil, marble, chalk, granite, sandstone, slate, soil, peat, sandy/chalk/clay soil</p>	<ul style="list-style-type: none"> Observe rocks closely Classify rocks in a range of ways based on their appearance <p><i>'Can you use the identification key to find out the names of each rock in your collection?'</i></p> <ul style="list-style-type: none"> Devise a test to investigate the hardness of a range of rocks/how much water different rocks absorb <p><i>'Which rock type is the most absorbent?'</i></p> <ul style="list-style-type: none"> Observe soils closely <p><i>How many different ways can you group our soil samples?'</i></p> <ul style="list-style-type: none"> Research using secondary sources how fossils are formed 	<ul style="list-style-type: none"> William Buckland Richard Owen Mary Annings 	

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		<p><i>'How are fossils formed?'</i></p> 		
<p>ASSESSMENT CRITERIA</p> <p>Knowledge:</p> <ul style="list-style-type: none"> • Can name some types of rock and give physical features of each • Can explain how a fossil is formed • Can explain that soils are made from rocks and also contain living/dead matter <p>Working Scientifically:</p> <ul style="list-style-type: none"> • Identifying and classifying: Can classify rocks in a range of different ways using appropriate vocabulary - • Can devise tests to explore the properties of rocks and use data to rank the rocks • Can present in different ways their understanding of how fossils are formed e.g. in role play, comic strip, chronological report, stop-go animation etc. <p>Can identify plant/animal matter and rocks in samples of soil</p>				



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YEAR: 3

TERM: Autumn Term 1:2

TITLE: Light

	COHERENCE & CREDIBILITY	CREATIVITY - Working Scientifically	COMPASSION & Appreciation of Significant Scientists	COMMUNITY
REVISION / REMIND / REVISIT - Builds on ...	<p>NC Links</p> <ul style="list-style-type: none"> To recognise that they need light in order to see things and that dark is the absence of light To notice that light is reflected from surfaces To recognise that light from the sun can be dangerous and that there are ways to protect their eyes To recognise that shadows are formed when light from a light source is blocked by an opaque object To find patterns in way size of shadows changes <p>Key Learning</p> <ul style="list-style-type: none"> We see objects because our eyes can sense light. Dark is the absence of light. We cannot see anything in complete darkness. Some objects, for example the sun, light bulbs and candles are sources of light. Objects are easier to see if there is more light. Some surfaces reflect light. Objects are easier to see when there is less light if they are reflective. The light from the sun can damage our eyes and therefore we should not look directly at the sun and can protect our eyes by wearing sunglasses or sunhats in bright light. Shadows are formed on a surface when an opaque or translucent object is between a light source and the surface and blocks some of the light. The size of the shadow depends on the position of the source, object and surface. 	<ul style="list-style-type: none"> Explore how shadows vary as the distance between a light source, an object or surface is changed (<i>use this to raise questions, begin to look for naturally occurring patterns and draw simple conclusions</i>) <p>How does the size of a shadow change during the day? </p> <p>'Does the distance between the light source and object affect the length of the shadow formed?' </p> <p>Which pair of sunglasses will be best at protecting our eyes?' </p> <p>How would you organize these objects into</p>	<ul style="list-style-type: none"> James Watt 	

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	Vocabulary Light, light source, dark, absence of light, transparent, translucent, opaque, shiny, matt, surface, shadow, reflect, mirror, sunlight, dangerous	<i>transparent, translucent and opaque?</i>		
	ASSESSMENT CRITERIA Knowledge: <ul style="list-style-type: none"> • Can describe how we see objects in light and can describe dark as the absence of light • Can state that it is dangerous to view the sun directly and state precautions used to view the sun, for example in eclipses • Can define transparent, translucent and opaque • Can describe how shadows are formed by objects blocking light. Working Scientifically: <ul style="list-style-type: none"> • Can describe and demonstrate how shadows are formed by blocking light • Can describe, demonstrate and make predictions about patterns in how shadows vary 			



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YEAR: 3
humans

TERM: Spring Term 2:1, Summer Term 3:2

TITLE: Animals, including

REVISION / REMIND / REVISIT – Builds on Year 1 and 2 Animals, including humans	COHERENCE & CREDIBILITY	CREATIVITY – Working Scientifically	COMPASSION & Appreciation of Significant Scientists	COMMUNITY
	<p>NC Links</p> <ul style="list-style-type: none"> Identify that animals including humans need right type and amount of nutrition Identify that humans and other animals have skeletons and muscles for support, protection and movement <p>Key Learning</p> <ul style="list-style-type: none"> Animals, unlike plants which can make their own food, need to eat in order to get the nutrients they need. Food contains a range of different nutrients that are needed by the body to stay healthy – carbohydrates including sugars, protein, vitamins, minerals, fibre, fat, sugars, water. A piece of food will often provide a range of nutrients. Humans and some other animals have skeletons and muscles which help them move and provide protection and support <p>Vocabulary</p> <p>Nutrition, nutrients, carbohydrates, sugars, protein, vitamins, minerals, fibre, fat, water, skeleton, bones, muscles, support, protect, move, skull, ribs, spine, muscles, joints</p>	<ul style="list-style-type: none"> Use food labels to explore the nutritional content of a range of food items <i>How many different ways can you group these foods by their nutrients?</i>  Use secondary sources to research the parts and functions of the skeleton <i>What bones make up our skeleton and what are their roles?</i>  Investigate pattern seeking questions such as: <i>Can people with longer legs run faster? Can people with bigger hands catch a ball better?</i>  <p><i>Research questions: Why do different types of vitamins keep us healthy and which foods can we find them in? +</i></p>	<p>Research career as a food scientist. What do they do? (Link with supermarkets)</p>	<ul style="list-style-type: none"> Canapés sold to raise money for charity in Summer Active Science - Food Chain Chase/Food Chain Dash/Skeleton Treasure Hunt/Skeleton Relay/Body Build Scavenge

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		<i>'How did James Lind explain the cause of scurvy and what was his evidence?'</i>			
ASSESSMENT CRITERIA Knowledge: <ul style="list-style-type: none">• Can name the nutrients found in food• Can state that to be healthy we need to eat the right types of food to give us the correct amount of these nutrients• Can name some bones that make up their skeleton giving examples that support, help them move or provide protection• Can describe how muscles and joints help them to move Working Scientifically: <ul style="list-style-type: none">• Can classify food into those that are high or low in particular nutrients - '• Use their data to look for patterns (or lack of) when answering their enquiry question					



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YEAR: 3

TERM: Spring Term 2:2

TITLE: Forces and Magnets

	COHERENCE & CREDIBILITY	CREATIVITY - Working Scientifically	COMPASSION & Appreciation of Significant Scientists	COMMUNITY
REVISION / REMIND / REVISIT - Builds on ...	<p>NC Links</p> <ul style="list-style-type: none"> To compare how things move on different surfaces To notice how some forces need contact but magnetic forces act a distance To observe how magnets attract or repel some materials and not others To describe magnets as having two poles To predict whether magnets will attract or repel To 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>Key Learning</p> <ul style="list-style-type: none"> A force is a push or a pull. When an object moves on a surface, the texture of the surface and the object affect how it moves. It may help the object to move better or it may hinder its movement e.g. ice skater compared to walking on ice in normal shoes. A magnet attracts magnetic material. Iron and nickel and other materials containing these e.g. stainless steel, are magnetic. The strongest parts of a magnet are the poles. Magnets have two poles - a north pole and a south pole. If two like poles e.g. two north poles, are brought together they will push away from each other - repel. If two unlike poles e.g. a north and south, are brought together they will pull together - attract. For some forces to act there must be contact e.g. a hand opening a door, the wind pushing the trees. Some forces can act at a distance 	<ul style="list-style-type: none"> Carry out investigations to explore how objects move on different surfaces e.g. spinning tops/coins, rolling balls/cars, clockwork toys, soles of shoes etc. <p><i>Which surface is best to stop you slipping?</i></p>  <ul style="list-style-type: none"> Classify materials according to whether they are magnetic <p><i>Can you classify these metals as magnetic or not magnetic?</i></p>  <p><i>Does the size and shape of a magnet affect how strong it is?</i></p> 	Isaac Newton	

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	<p>e.g. magnetism. The magnet does not need to touch the object that it attracts.</p> <p>Vocabulary</p> <p>Force, push, pull, twist, contact force, non-contact force, magnetic force, magnet, strength, bar magnet, ring magnet, button magnet, horseshoe magnet, attract, repel, magnetic material, metal, iron, steel, poles, north pole, south pole</p>			
	<p>ASSESSMENT CRITERIA</p> <p>Knowledge:</p> <ul style="list-style-type: none"> • Can give examples of forces in everyday life • Can give examples of objects moving differently on different surfaces • Can name a range of types of magnets and show how the poles attract and repel • Can draw diagrams using arrows to show the attraction and repulsion between the poles of magnets <p>Working Scientifically:</p> <ul style="list-style-type: none"> • Can use their results to describe how objects move on different surfaces • Can use their results to make predictions for further tests e.g. it will spin for longer on this surface than that, but not as long as it spun on that surface • Can use classification evidence to identify that some metals but not all are magnetic 			



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YEAR: 3 TERM: Summer Term 3:1

TITLE:

Plants

REVISION / REMIND / REVISIT - Builds on Year 1 and 2 Plants	COHERENCE & CREDIBILITY	CREATIVITY - Working Scientifically	COMPASSION & Appreciation of Significant Scientists	COMMUNITY
	<p>NC Links</p> <ul style="list-style-type: none"> To identify and describe functions of different parts of flowering plants To explore the requirements for life and growth To investigate how water is transported within plants To explore life cycle of flowering plants <p>Key Learning</p> <ul style="list-style-type: none"> Many plants, but not all, have roots, stems/trunks, leaves and flowers/blossom. The roots absorb water and nutrients from the soil and anchor the plant in place. The stem transports water and nutrients/minerals around the plant and holds the leaves and flowers up in the air to enhance photosynthesis, pollination and seed dispersal. The leaves use sunlight and water to produce the plant's food. Some plants produce flowers which enable the plant to reproduce. Pollen, which is produced by the male part of the flower, is transferred to the female part of other flowers (pollination). This forms seeds, sometimes contained in berries or fruits which are then dispersed in different ways. Different plants require different conditions for germination and growth <p>Vocabulary</p>	<ul style="list-style-type: none"> Observe the effect of putting cut white carnations or celery in coloured water (<i>help make decisions about what observations to make</i>) <p><i>What happens to celery when it is left in a glass of coloured water?</i></p>  <ul style="list-style-type: none"> Research different types of seed dispersal Classify seeds in a range of ways including by how they are dispersed <p><i>How many different ways can you group our seed collection?'</i></p>  <ul style="list-style-type: none"> Create a new species of flowering plant (<i>to show understanding of parts of the plant - end of unit assessment</i>) 		<p>Plants for poverty</p> <p>Active Science - Tree and Plant Structure/Tree Structure Team Build/Tree Water/Pollen Grab</p>

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	<p>Photosynthesis, pollen, insect/wind pollination, seed formation, seed dispersal - wind dispersal, animal dispersal, water dispersal</p>	<p><i>'Which conditions help bean plants grow to produce healthy beans?'</i></p> 		
	<p>ASSESSMENT CRITERIA</p> <p>Knowledge:</p> <ul style="list-style-type: none"> • Can explain the function of the parts of a flowering plant • Can describe the life cycle of flowering plants, including pollination, seed formation, seed dispersal, and germination • Can give different methods of pollination and seed dispersal, including examples <p>Working Scientifically:</p> <ul style="list-style-type: none"> • Can explain observations made during investigations • Can look at the features of seeds to decide on their method of dispersal • Can draw and label a diagram of their created flowering plant to show its parts, their role and the method of pollination and seed dispersal 			