



St Mark's CE Primary School Science Curriculum Map: Working Scientifically

	Nursery/Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Working Scientifically	<p>Understanding of the World</p> <ul style="list-style-type: none"> Children know about similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another. They make observations of animals and plants and explain why some things occur and talk about changes. 	<p>Sticky Knowledge:</p> <ul style="list-style-type: none"> Ask questions such as, "Why are flowers different colours?" Set up a test to see which materials keep things warmest, know if the test has been successful and say what has been learned Explain to someone what has been learned and draw conclusions from the questions asked Use measures appropriate to Year 1 	<p>Sticky Knowledge:</p> <ul style="list-style-type: none"> Ask questions such as, "How long are roots of tall trees?" Use equipment to observe changes to the local area over the year Use microscopes to find out more about small creatures and plants Know how to set up a fair test Classify or group things according to a given criteria Draw conclusions from fair tests Use measures appropriate to Year 2 	<p>Sticky Knowledge:</p> <ul style="list-style-type: none"> Ask questions Make observations related to shadows and plants Conduct comparative and fair tests, explaining why a test is fair Use measures appropriate to Year 3 Group information according to common factors Present findings using written explanations and diagrams Make sense of findings and draw conclusions 	<p>Sticky Knowledge:</p> <ul style="list-style-type: none"> Ask questions Use research to find out answers to questions Set up and carry out fair and comparative tests, explaining why it is fair Use measures appropriate to Year 4 Gather and record information Present findings using written explanations and diagrams Use plausible reasons when making predictions Make sense of findings and draw conclusions 	<p>Sticky Knowledge:</p> <ul style="list-style-type: none"> Set up fair tests and enquiry based investigations Know what the variables are in a given enquiry Use measures appropriate to Year 5 Use a range of scientific instruments Record data in a variety of ways Create new investigations taking account of previous learning Evaluate findings Draw clear conclusions and make links to other work 	<p>Sticky Knowledge:</p> <ul style="list-style-type: none"> Know which type of investigation is needed Set up fair and enquiry based tests Identify variables Justify which variable has been isolated Record and present data in a variety of ways Make predictions using prior investigative work Draw clear conclusions and relate to other work in the class Give examples of something they've focused on when supporting a scientific theory
		<p>NC Knowledge</p> <ul style="list-style-type: none"> asking simple questions and recognising that they can be answered in different ways observing closely, using simple equipment performing simple tests identifying and classifying using their observations and ideas to suggest answers to questions gathering and recording data to help in answering questions 	<p>NC Knowledge</p> <ul style="list-style-type: none"> asking relevant questions and using different types of scientific enquiries to answer them setting up simple practical enquiries, comparative and fair tests making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers gathering, recording, classifying and presenting data in a variety of ways to help in answering questions recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions identifying differences, similarities or changes related to simple scientific ideas and processes using straightforward scientific evidence to answer questions or to support their findings. 	<p>NC Knowledge</p> <ul style="list-style-type: none"> planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs using test results to make predictions to set up further comparative and fair tests reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations identifying scientific evidence that has been used to support or refute ideas or arguments 			

St Mark's CE (A) Primary School
Science Curriculum Map: Living Things and their Habitats



	Nursery/Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
All Living Things and their Habitats	<p>Understanding of the World</p> <ul style="list-style-type: none"> Children know about similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another. They make observations of animals and plants and explain why some things occur and talk about changes. 	<p><i>Links from other Y1 science topics:</i></p> <p>Sticky Knowledge:</p> <ul style="list-style-type: none"> Know and name a variety of common wild and garden plants (Plants) Know and name the petals, stem, leaves and root of a plant (Plants) Know how to classify a range of animals by amphibian, reptile, mammal, fish and birds (AIH) <p>NC Knowledge/Skills:</p> <ul style="list-style-type: none"> identify and name a variety of common wild and garden plants, including deciduous and evergreen trees (Plants) identify and describe the basic structure of a variety of common flowering plants, including trees (Plants) identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals (AIH) identify and name a variety of common animals that are carnivores, herbivores and omnivores (AIH) 	<p>Question: What could be inside the egg? (Summer Term)</p> <p>Sticky Knowledge:</p> <ul style="list-style-type: none"> Classify things by living, dead or never lived Know how a specific habitat provides for the basic needs of things living there Match living things to their habitat Name some different sources of food for animals Know about and explain a simple food chain <p>NC Knowledge/Skills:</p> <ul style="list-style-type: none"> explore and compare the differences between things that are living, dead, and things that have never been alive 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 identify and name a variety of plants and animals in their habitats, including microhabitats 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>Vocab: dinosaur, indigenous, rivers, woodland, ponds, sea, rainforest, desert, species, habitat, living, dead, predator, prey</p>	<p><i>Links from other Y3 science topics:</i></p> <p>Sticky Knowledge:</p> <ul style="list-style-type: none"> Know the function of different parts of flowering plants and trees (Plants) <p>NC Knowledge/Skills:</p> <ul style="list-style-type: none"> explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal (Plants) 	<p>Question: Which wild animals and plants thrive in your locality? (Autumn 1)</p> <p>Sticky Knowledge:</p> <ul style="list-style-type: none"> Use classification keys to group, identify and name living things Know how changes to an environment could endanger living things <p>NC Knowledge/Skills:</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>Vocab: vertebrates, fish, amphibians, mammals, birds, reptiles, invertebrates, snails, slugs, worms, spiders, insects, environment, habitat, predator, prey</p>	<p>Question: Do all living things start life as an egg? (Autumn 2)</p> <p>Sticky Knowledge:</p> <ul style="list-style-type: none"> Know the life cycle of different living things e.g. mammal, amphibian, insect and bird Know the differences between different life cycles Know the process of reproduction in plants Know the process of reproduction in animals <p>NC Knowledge/Skills:</p> <ul style="list-style-type: none"> describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird describe the life process of reproduction in some plants and animals <p>Vocab: mammals, reproduction, reptiles, birds, mammals, amphibians, fish, vertebrates, invertebrates</p>	<p>Question: Could Spiderman really exist? (Autumn 2)</p> <p>Sticky Knowledge:</p> <ul style="list-style-type: none"> Classify living things into broad groups according to observable characteristics and based on similarities and differences Know how living things have been classified Give reasons for classifying plants and animals in a specific way <p>NC Knowledge/Skills:</p> <ul style="list-style-type: none"> describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals give reasons for classifying plants and animals based on specific characteristics <p>Vocab: microorganism, vertebrates, invertebrates, species, fungi, bacteria, monera, protista, algae, Linnaeus, classification</p>

St Mark's CE (A) Primary School
Science Curriculum Map: Animals (Including Humans)



	Nursery/Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Animals (Including Humans)	<p>Understanding of the World</p> <ul style="list-style-type: none"> Children know about similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another. They make observations of animals and plants and explain why some things occur and talk about changes. 	<p>Question: Why are humans not like tigers? (Autumn Term)</p> <p>Sticky Knowledge:</p> <ul style="list-style-type: none"> Know how to classify a range of animals by amphibian, reptile, mammal, fish and birds Know and classify animals by what they eat (carnivore, herbivore and omnivore) Know how to sort by living and non-living things <p>NC Knowledge/Skills:</p> <ul style="list-style-type: none"> identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals identify and name a variety of common animals that are carnivores, herbivores and omnivores describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets) identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense <p>Vocab: fish, amphibian, reptiles, birds, mammals, carnivore, herbivore, omnivore, tame, wild, nocturnal</p>	<p>Question: How will 5 a day help me to be healthy? (Spring 1)</p> <p>Sticky Knowledge:</p> <ul style="list-style-type: none"> Know the basic stages in a life cycle for animals (including humans) Know why exercise, a balanced diet and good hygiene are important for humans <p>NC Knowledge/Skills:</p> <ul style="list-style-type: none"> notice that animals, including humans, have offspring which grow into adults find out about and describe the basic needs of animals, including humans, for survival (water, food and air) describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene <p>Vocab: healthy, diet, adult, baby, offspring, exercise, proteins, carbohydrates, fats, nutrition, survival, hygiene</p>	<p>Question: How can Lionel Messi move so quickly? (Summer Term)</p> <p>Sticky Knowledge:</p> <ul style="list-style-type: none"> Know about the importance of a nutritious, balanced diet Know how nutrients, water and oxygen are transported within animals and humans Know about the skeletal and muscular system <p>NC Knowledge/Skills:</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>Vocab: nutrition, skeleton, muscles, diet, joint, pelvis, cartilage, rib cage, tendon, skull, spine, bones, movement</p>	<p>Question: What happens to the food we eat? (Autumn 2)</p> <p>Sticky Knowledge:</p> <ul style="list-style-type: none"> Identify and name the parts of the human digestive system Know the functions of the organs in the human digestive system Identify and know the different types of human teeth Know the functions of different human teeth Use and construct food chains to identify producers, predators and prey. <p>NC Knowledge/Skills:</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>Vocab: pancreas, oesophagus, intestine, organ, molars, canine, incisor, food chain, predators, prey, salivary gland</p>	<p>Question: How different will you be when you are as old as your grandparents? (Spring 1)</p> <p>Sticky Knowledge:</p> <ul style="list-style-type: none"> Create a timeline to indicate stages of growth in humans <p>NC Knowledge/Skills:</p> <ul style="list-style-type: none"> describe the changes as humans develop to old age <p>Vocab: gestation, classification, precision, reproduction, teenager, adult, toddler, baby, elderly, obese, embryo, development, growth</p>	<p>Question: What would a journey through your body be like? (Autumn 1)</p> <p>Sticky Knowledge:</p> <ul style="list-style-type: none"> Identify and name the main parts of the human circulatory system Know the function of the heart, blood vessels and blood Know the impact of diet, exercise, drugs and lifestyle on health Know the ways in which nutrients and water are transported in animals, including human <p>NC Knowledge/Skills:</p> <ul style="list-style-type: none"> identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function describe the ways in which nutrients and water are transported within animals, including humans <p>Vocab: blood, blood vessels, veins, arteries, drugs, atriums, circulatory, cardiovascular, capillaries, pulse, ventricles, oxygenated, deoxygenated, valve</p>

St Mark's CE (A) Primary School
Science Curriculum Map: Electricity



	Nursery/Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Electricity	<p>Understanding of the World</p> <ul style="list-style-type: none"> Children know about similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another. They make observations of animals and plants and explain why some things occur and talk about changes. 				<p>Question: How could we cope without electricity for one day? (Spring 1)</p> <p>Sticky Knowledge:</p> <ul style="list-style-type: none"> Identify and name appliances that require electricity to function Construct a series circuit Identify and name to components in a series circuit Predict and test whether a lamp will light within a circuit Know the function of a switch Know the difference between a conductor and insulator, giving examples of each <p>NC Knowledge/Skills:</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>Vocab: circuit, buzzers, conductor, insulator, battery, cells, switch, socket, appliance, wires, bulbs, series</p>		<p>Question: Could you be the next Nintendo apprentice? (Spring Term)</p> <p>Sticky Knowledge:</p> <ul style="list-style-type: none"> Compare and give reasons why components work and do not work in a circuit Draw circuit diagrams using correct symbols Know how the number and voltage of cells in a circuit links to the brightness of a lamp or the volume of a buzzer <p>NC Knowledge/Skills:</p> <ul style="list-style-type: none"> associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches use recognised symbols when representing a simple circuit in a diagram <p>Vocab: conductor, insulator, socket, series circuits, cells, volts, generator, turbine, fuses, amps</p>

St Mark's CE (A) Primary School
Science Curriculum Map: Evolution and Inheritance



	Nursery/Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Evolution and Inheritance	<p>Understanding of the World</p> <ul style="list-style-type: none"> Children know about similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another. They make observations of animals and plants and explain why some things occur and talk about changes. 		<p><i>Links from other Y2 science topics:</i></p> <p>Sticky Knowledge:</p> <ul style="list-style-type: none"> Know how a specific habitat provides for the basic needs of things living there (LT&TH) <p>NC Knowledge/Skills:</p> <ul style="list-style-type: none"> 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 (LT&TH) 	<p><i>Links from other Y3 science topics:</i></p> <p>Sticky Knowledge:</p> <ul style="list-style-type: none"> Know how soil is made and how fossils are formed (Rocks) <p>NC Knowledge/Skills:</p> <ul style="list-style-type: none"> describe in simple terms how fossils are formed when things that have lived are trapped within rock (Rocks) 	<p><i>Links from other Y4 science topics:</i></p> <p>Sticky Knowledge:</p> <ul style="list-style-type: none"> Know how changes to an environment could endanger living things (LT&TH) <p>NC Knowledge/Skills:</p> <ul style="list-style-type: none"> recognise that environments can change and that this can sometimes pose dangers to living things (LT&TH) 		<p>Question: Have we always looked like this? (Summer 2)</p> <p>Sticky Knowledge:</p> <ul style="list-style-type: none"> Know how the Earth and living things have changed over time Know how fossils can be used to find out about the past Know about reproduction and offspring (that offspring normally vary) Know how animals and plants are adapted to suit their environment Link adaptation over time to evolution Know about evolution and can explain what it is <p>NC Knowledge/Skills:</p> <ul style="list-style-type: none"> recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution <p>Vocab: fossils, adaptation, offspring, evolution, inheritance, palaeontologist, characteristics, genetics, genes, chromosomes, genotype, Darwin</p>

St Mark's CE (A) Primary School
Science Curriculum Map: Forces



	Nursery/Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Forces	<p>Understanding of the World</p> <ul style="list-style-type: none"> Children know about similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another. They make observations of animals and plants and explain why some things occur and talk about changes. 		<p><i>Links from other Y2 science topics:</i></p> <p>Sticky Knowledge:</p> <ul style="list-style-type: none"> Know how materials can be changed by squashing, bending, twisting and stretching (Materials) <p>NC Knowledge/Skills:</p> <ul style="list-style-type: none"> find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching (Materials) 	<p>Question: Are you attractive enough? (Spring 1)</p> <p>Sticky Knowledge:</p> <ul style="list-style-type: none"> Know about and describe how objects move on different surfaces Know how a simple pulley works and use to lift an object Know how some forces require contact and some do not, giving examples Know about and explain how magnets attract and repel Predict whether magnets will attract or repel and give a reason <p>NC Skills/Knowledge:</p> <ul style="list-style-type: none"> compare how things move on different surfaces notice that some forces need contact between 2 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 2 poles predict whether 2 magnets will attract or repel each other, depending on which poles are facing <p>Vocab: magnets, magnetic, force, contact, attract, repel, friction, poles, push, pull, magnetic pole</p>		<p>Question: Can you feel the force? (Summer)</p> <p>Sticky Knowledge:</p> <ul style="list-style-type: none"> Know what gravity is and its impact on our lives Identify and know the effect of air and water resistance Identify and know the effect of friction Explain how levers, pulleys and gears allow a smaller force to have a greater effect <p>NC Skills/Knowledge:</p> <ul style="list-style-type: none"> explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object identify the effects of air resistance, water resistance and friction, that act between moving surfaces recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect <p>Vocab: friction, gravity, air resistance, water resistance, levers, pulleys, gears, parachute, Newton</p>	

St Mark's CE (A) Primary School
Science Curriculum Map: Light



	Nursery/Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Light	<p>Understanding of the World</p> <ul style="list-style-type: none"> Children know about similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another. They make observations of animals and plants and explain why some things occur and talk about changes. 	<p><i>Links from other Y1 science topics:</i></p> <p><i>Sticky Knowledge:</i></p> <p><i>NC Knowledge/Skills:</i></p> <ul style="list-style-type: none"> identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense (AIH) 		<p>Question: How far can you throw your shadow? (Summer 2)</p> <p>Sticky Knowledge:</p> <ul style="list-style-type: none"> Know that dark is the absence of light Know that light is needed in order to see and is reflected from a surface Know and demonstrate how a shadow is formed and explain how a shadow changes shape Know about the danger of direct sunlight and describe how to keep protected <p>NC Knowledge/Skills:</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>Vocab: Reflection, shadows, light source, opaque, refraction, periscope, nocturnal, convex, concave, mirror</p>			<p>Question: How can you light up your life? (Summer 1)</p> <p>Sticky Knowledge:</p> <ul style="list-style-type: none"> Know how light travels Know and demonstrate how we see objects Know why shadows have the same shape as the object that casts them Know how simple optical instruments work e.g.: periscope, telescope, binoculars, mirror, magnifying glass <p>NC Knowledge/Skills:</p> <ul style="list-style-type: none"> recognise that light appears to travel in straight lines use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them <p>Vocab: light wave, light source, concave, convex, filters, lens, retina, cornea, iris, pupil, spectrum</p>

St Mark's CE (A) Primary School
Science Curriculum Map: Materials (including Rocks)



	Nursery/ Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Materials (including Rocks)	<p>Understanding of the World</p> <ul style="list-style-type: none"> Children know about similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another. They make observations of animals and plants and explain why some things occur and talk about changes. 	<p>Question: What do aliens think of life on Earth? (Spring 2)</p> <p>Sticky Knowledge:</p> <ul style="list-style-type: none"> Know the name of the materials an object is made from Know about the properties of everyday materials <p>NC Knowledge/Skills:</p> <ul style="list-style-type: none"> distinguish between an object and the material from which it is made identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock describe the simple physical properties of a variety of everyday materials compare and group together a variety of everyday materials on the basis of their simple physical properties <p>Vocab: materials, wood, plastic, metal, solid, liquid, gas, stretch, stiff, bend, waterproof, shiny</p>	<p>Question: What is our school made of? (Autumn 2)</p> <p>Sticky Knowledge:</p> <ul style="list-style-type: none"> Know how materials can be changed by squashing, bending, twisting and stretching Know why a material might or might not be used for a specific job <p>NC Knowledge/Skills:</p> <ul style="list-style-type: none"> identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching <p>Vocab: metal, plastic, wood, squashing, bending, twisting, stretching, hard, soft, dull, rough, smooth, waterproof, absorbent, transparent, opaque</p>	<p>Question: What do rocks tell us about how the Earth was formed? (Spring 2)</p> <p>Sticky Knowledge:</p> <ul style="list-style-type: none"> Compare and group rocks based on their appearance and physical properties, giving reasons Know how soil is made and how fossils are formed Know about and explain the difference between sedimentary, metamorphic and igneous rock <p>NC Knowledge/Skills:</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>Vocab: fossil, soil, crystals, sedimentary, metamorphic, igneous, organic, sandstone, granite, marble</p>	<p>Question: How would we survive without water? (Summer Term)</p> <p>Sticky Knowledge:</p> <ul style="list-style-type: none"> Group materials based on their state of matter Know the temperature at which materials change state Know about and explore how some materials can change state Know the part played by evaporation and condensation in the water cycle <p>NC Knowledge/Skills:</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>Vocab: water vapour, condensation, precipitation, evaporation, substance, matter, lava, solid, liquid, gas, freezing, melting, heating, cooling</p>	<p>Question: Could you be the next CSI investigator? (Autumn 1)</p> <p>Sticky Knowledge:</p> <ul style="list-style-type: none"> Compare and group materials based on their properties Know and explain how a material dissolves to form a solution Know and show how to recover a substance from a solution Know and demonstrate how some materials can be separated Know and demonstrate that some changes are reversible and some are not Know how some changes result in the formation of a new material and that this is usually irreversible <p>NC Knowledge/Skills:</p> <ul style="list-style-type: none"> compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic demonstrate that dissolving, mixing and changes of state are reversible changes explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda <p>Vocab: solubility, conductivity, transparency, thermal evaporation, dissolve, bicarbonate of soda, thermal, filtering, melting, separate</p>	

St Mark's CE (A) Primary School
Science Curriculum Map: Plants



	Nursery/Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Plants	<p>Understanding of the World</p> <ul style="list-style-type: none"> Children know about similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another. They make observations of animals and plants and explain why some things occur and talk about changes. 	<p>Question: Which birds and plants would we find in our local area/How does your garden grow? (Summer Term)</p> <p>Sticky Knowledge:</p> <ul style="list-style-type: none"> Know and name a variety of common wild and garden plants Know and name the petals, stem, leaves and root of a plant Know and name the roots, trunk, branches and leaves of a tree <p>NC Knowledge/Skills:</p> <ul style="list-style-type: none"> identify and name a variety of common wild and garden plants, including deciduous and evergreen trees identify and describe the basic structure of a variety of common flowering plants, including trees <p>Vocab: buds, bulbs, deciduous, evergreen, trunk, vegetable, wild plants, environment, blossom, petals, branches, flowers</p>	<p>Question: How can we be green-fingered? (Spring)</p> <p>Sticky Knowledge:</p> <ul style="list-style-type: none"> Know and explain how seeds and bulbs grow into plants Know what plants need in order to grow and stay healthy (water, light and suitable temperature) <p>NC Knowledge/Skills:</p> <ul style="list-style-type: none"> observe and describe how seeds and bulbs grow into mature plants find out and describe how plants need water, light and a suitable temperature to grow and stay healthy <p>Vocab: roots, crown, deciduous, evergreen, blossom, bulb, trunk, stem, woodland, habitat, oxygen, growth</p>	<p>Question: How did that blossom become an apple? (Autumn 1)</p> <p>Sticky Knowledge:</p> <ul style="list-style-type: none"> Know the function of different parts of flowering plants and trees <p>NC Knowledge/Skills:</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>Vocab: roots, stem, nutrients, pollination, seed dispersal, fertiliser, seed formation, stigma, anther, soil, flower, air, light, water</p>	<p><i>Links from other Y4 science topics:</i></p> <p>Sticky Knowledge:</p> <ul style="list-style-type: none"> Use classification keys to group, identify and name living things (LT&TH) Know how changes to an environment could endanger living things (LT&TH) <p>NC Knowledge/Skills:</p> <ul style="list-style-type: none"> recognise that living things can be grouped in a variety of ways (LT&TH) explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment (LT&TH) recognise that environments can change and that this can sometimes pose dangers to living things (LT&TH) 	<p><i>Links from other Y5 science topics:</i></p> <p>Sticky Knowledge:</p> <p>NC Knowledge/Skills:</p> <ul style="list-style-type: none"> describe the life process of reproduction in some plants and animals (LT&TH) 	<p><i>Links from other Y6 science topics:</i></p> <p>Sticky Knowledge:</p> <ul style="list-style-type: none"> Classify living things into broad groups according to observable characteristics and based on similarities and differences (LT&TH) Give reasons for classifying plants and animals in a specific way (LT&TH) <p>NC Knowledge/Skills:</p> <ul style="list-style-type: none"> describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals (LT&TH) give reasons for classifying plants and animals based on specific characteristics (LT&TH)

St Mark's CE (A) Primary School
Science Curriculum Map: Seasonal Changes



	Nursery/Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Seasonal Changes	<p>Understanding of the World</p> <ul style="list-style-type: none"> Children know about similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another. They make observations of animals and plants and explain why some things occur and talk about changes. 	<p>Question: How are the seasons different? (Spring 1)</p> <p>Sticky Knowledge:</p> <ul style="list-style-type: none"> Name the seasons and know about the type of weather in each season <p>NC Skills/Knowledge:</p> <ul style="list-style-type: none"> observe changes across the 4 seasons observe and describe weather associated with the seasons and how day length varies <p>Vocab: spring, summer, autumn, winter, seasons, changes, day, night, moon</p>		<p><i>Links from other Y3 science topics:</i></p> <p>Sticky Knowledge:</p> <ul style="list-style-type: none"> Know about the danger of direct sunlight and describe how to keep protected (Light) <p>NC Knowledge/Skills:</p> <ul style="list-style-type: none"> recognise that light from the sun can be dangerous and that there are ways to protect their eyes (Light) 		<p><i>Links from other Y5 science topics:</i></p> <p>Sticky Knowledge:</p> <ul style="list-style-type: none"> Know and demonstrate how night and day are created (Space) <p>NC Knowledge/Skills:</p> <ul style="list-style-type: none"> use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky (Space) 	

St Mark's CE (A) Primary School
Science Curriculum Map: Sound



	Nursery/Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Sound	<p>Understanding of the World</p> <ul style="list-style-type: none"> Children know about similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another. They make observations of animals and plants and explain why some things occur and talk about changes. 	<p><i>Links from other Y1 science topics:</i></p> <p><i>Sticky Knowledge:</i></p> <p><i>NC Knowledge/Skills:</i></p> <ul style="list-style-type: none"> <i>identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense (AIH)</i> 	<p>Question: Where did that rocket come from? (Autumn 1)</p> <p>Sticky Knowledge:</p> <ul style="list-style-type: none"> Know and name a variety of sources of sound Know that we hear with our ears Know that sounds get fainter the further away you are from them <p>NC Skills/Knowledge (non-statutory unit)</p> <ul style="list-style-type: none"> observe and name a variety of sources of sound, noticing that we hear with our ears recognise that sounds get fainter as the distance from the sound source increases <p>Vocab: volume, ears, sounds, noisy, high, low, loud, quiet, silence, music, musical instrument</p>		<p>Question: Why is the sound of music enjoyed by so many? (Spring 2)</p> <p>Sticky Knowledge:</p> <ul style="list-style-type: none"> Know how sound is made, associating them with vibrating Know how sound travels from a source to our ears <p>NC Skills/Knowledge:</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>Vocab: vibrating, pitch, volume, insulation, outer ear, middle ear, inner ear, cochlea, auditory, frequency, hammer</p>		

St Mark's CE (A) Primary School
Science Curriculum Map: Space



	Nursery/Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Space	<p>Understanding of the World</p> <ul style="list-style-type: none"> Children know about similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another. They make observations of animals and plants and explain why some things occur and talk about changes. 	<p><i>Links from other Y1 science topics:</i></p> <p>Sticky Knowledge:</p> <ul style="list-style-type: none"> Name the seasons and know about the type of weather in each season (Seasonal Changes) <p>NC Skills/Knowledge:</p> <ul style="list-style-type: none"> observe changes across the 4 seasons (Seasonal Changes) observe and describe weather associated with the seasons and how day length varies (Seasonal Changes) 				<p>Question: Will we ever send another human to the moon? (Summer 2)</p> <p>Sticky Knowledge:</p> <ul style="list-style-type: none"> Know about and explain the movement of the Earth and other planets relative to the sun Know about and explain the movement of the Moon relative to the Earth Know and demonstrate how night and day are created Describe the Sun, Earth and Moon <p>NC Skills/Knowledge:</p> <ul style="list-style-type: none"> describe the movement of the Earth and other planets relative to the sun in the solar system describe the movement of the moon relative to the Earth describe the sun, Earth and moon as approximately spherical bodies use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky <p>Vocab: orbit, solar system, astronomical, planet, rotation, spherical, crescent moon, gibbous moon, eclipse, lunar, solar, axis, constellation</p>	