



St Martin's School, Dover

## Long Term Science Overview 2015-2016

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	How does it work?	Where have we come from?	How can we discover?	How can we discover?	What happens when...?	What if.....?
FS	<p><b><u>The following Science related EYFS Early Learning Goals are to be taught throughout the year.</u></b></p> <p><b><u>Understanding the world</u></b></p> <p><b>The World</b></p> <p>ELG - 22 - Children know about similarities and differences in relation to places, objects, materials and living things.</p> <p>ELG - 23 - They talk about the features of their own immediate environment and how environments might vary from one another.</p> <p>ELG - 24 - They make observations of animals and plants and explain why some things occur, and talk about changes.</p> <p><b>Technology</b></p> <p>ELG - 11 - Children recognise that a range of technology is used in places such as homes and schools.</p> <p>ELG - 12 - They select and use technology for particular purposes.</p> <p><b>Mathematics</b></p> <p><b>Shape, Space and Measure</b></p> <p>ELG - 30 - Children use everyday language to talk about size, weight, capacity, position, distance and time to compare quantities and objects and to solve problems.</p> <p><b>Communication and Language</b></p> <p><b>Understanding</b></p> <p>ELG - 20 - They answer 'how' and 'why' questions about their experiences and in response to stories or events.</p> <p><b>Speaking</b></p> <p>ELG - 38 - They use past, present and future forms accurately when talking about events that have happened or are to happen in the future.</p> <p>ELG - 39 - They develop their own narratives and explanations by connecting ideas or events.</p>					

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	How does it work?	Where have we come from?	How can we discover?	How can we discover?	What happens when...?	What if.....?
1	<p><b><u>Animals including humans</u></b></p> <p>identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals</p> <p>identify and name a variety of common animals that are carnivores, herbivores and omnivores</p> <p>ENGLISH CC LINK – LISTS/LEAFLETS: LOCAL AREA</p>	<p><b><u>Seasonal Changes</u></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>ENGLISH CC LINK – STORY WRITING: LIGHT AND DARK</p>	<p><b><u>Materials</u></b></p> <p>distinguish between an object and the material from which it is made</p> <p>identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock</p> <p>ENGLISH CC LINK – INFORMATION LEAFLETS: TOYS</p>	<p><b><u>Plants</u></b></p> <p>identify and name a variety of common wild and garden plants, including deciduous and evergreen trees</p> <p>Identify and describe the basic structure of a variety of common flowering plants, including trees.</p> <p>ENGLISH CC LINK – INFORMATION BOOKLETS/POETRY: CARRIBEAN ISLAND</p>	<p><b><u>Animals Including humans</u></b></p> <p>describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets)</p> <p>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> <p>ENGLISH CC LINK – POEMS/DIARY/EXPLANATION: LONDON</p>	<p><b><u>Materials</u></b></p> <p>describe the simple physical properties of a variety of everyday materials</p> <p>Compare and group together a variety of everyday materials on the basis of their simple physical properties.</p> <p>ENGLISH CC LINK– POEMS/ RECOUNTS/STORIES: TRANSPORT</p>

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2	<p><b><u>Animals including Humans</u></b></p> <p>Describe the simple functions of the basic parts of the digestive system in humans</p> <p>Identify the different types of teeth in humans and their simple functions</p> <p>Construct and interpret a variety of food chains, identifying producers, predators and prey.</p> <p>ENGLISH CC LINK – NON FICTION/STORY WRITING/DIARY ENTRY: Invaders and Settlers</p>	<p><b><u>Electricity</u></b></p> <p>Identify common appliances that run on electricity</p> <p>Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers</p> <p>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</p> <p>ENGLISH CC LINK – HISTORICAL STORIES/INFORMATION TEXTS: Invaders and Settlers</p>	<p><b><u>State of matter</u></b></p> <p>Compare and group materials together, according to whether they are solids, liquids or gases</p> <p>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)</p> <p>Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.</p> <p>ENGLISH CC LINK – LETTER WRITING/ ADVENTURE STORIES/ FACTUAL WRITING: Rivers - Thames and Amazon</p>	<p><b><u>Living things and their habitat</u></b></p> <p>Recognise that living things can be grouped in a variety of ways</p> <p>Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment</p> <p>Recognise that environments can change and that this can sometimes pose dangers to living things.</p> <p>ENGLISH CC LINK – EXPLANATION TEXT FROM ANOTHER CULTURE/PERSUASIVE WRITING/ The Americas</p>	<p><b><u>Electricity</u></b></p> <p>Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit</p> <p>Recognise some common conductors and insulators, and associate metals with being good conductors.</p> <p>ENGLISH CC LINK – BIOGRAPHY/DIARY/EXPLANATION TEXTS/DEBATE: The Industrial Revolution</p>	<p><b><u>Sound</u></b></p> <p>Identify how sounds are made, associating some of them with something vibrating</p> <p>recognise that vibrations from sounds travel through a medium to the ear</p> <p>Find patterns between the pitch of a sound and features of the object that produced it</p> <p>Find patterns between the volume of a sound and the strength of the vibrations that produced it</p> <p>Recognise that sounds get fainter as the distance from the sound source increases.</p> <p>ENGLISH CC LINK – DEBATE/POETRY AND PERFORMANCE/EXPLANATION/PRESENTATION: The Industrial Revolution</p>

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3	<p><b><u>Rocks</u></b></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>ENGLISH CC LINK – NON FICTION/NON CHRONOLOGICAL REPORTS/STORIES: Volcanoes and Earthquakes</p>	<p><b><u>Forces and Magnets</u></b></p> <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>ENGLISH CC LINK – STORIES/INFORMATION TEXTS: Stone, Bronze, Iron Age</p>	<p><b><u>Animals Including humans</u></b></p> <p>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</p> <p>Identify that humans and some other animals have skeletons and muscles for support, protection and movement.</p> <p>ENGLISH CC LINK – INSTRUCTIONS/FACT SHEET/DIARY: Romans in Britain</p>	<p><b><u>Light</u></b></p> <p>Recognise that they need light in order to see things and that dark is the absence of light</p> <p>Notice that light is reflected from surfaces.</p> <p>Recognise that light from the sun can be dangerous and that there are ways to protect their eyes</p> <p>Recognise that shadows are formed when the light from a light source is blocked by a solid object</p> <p>Find patterns in the way that the size of shadows change.</p> <p>ENGLISH CC LINK – STORIES FROM OTHER CULTURES/PERSUASIVE WRITING/FACTUAL WRITING: Europe – Focus on Italy</p>	<p><b><u>Forces and Magnets</u></b></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> <p>Predict whether two magnets will attract or repel each other, depending on which poles are facing.</p> <p>ENGLISH CC LINK – FANTASY STORIES/SETTING/CHARACTERS /NON SENSE POEMS: Weird and Wonderful</p>	<p><b><u>Plants</u></b></p> <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</p> <p>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> <p>ENGLISH CC LINK – POETRY/INFORMATION TEXTS: Flowering Plants</p>

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4	<p><b><u>Animals including Humans</u></b></p> <p>Describe the simple functions of the basic parts of the digestive system in humans</p> <p>Identify the different types of teeth in humans and their simple functions</p> <p>Construct and interpret a variety of food chains, identifying producers, predators and prey.</p> <p>ENGLISH CC LINK – NON FICTION/STORY WRITING/DIARY ENTRY: Invaders and Settlers</p>	<p><b><u>Electricity</u></b></p> <p>Identify common appliances that run on electricity</p> <p>Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers</p> <p>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</p> <p>ENGLISH CC LINK – HISTORICAL STORIES/INFORMATION TEXTS: Invaders and Settlers</p>	<p><b><u>State of matter</u></b></p> <p>Compare and group materials together, according to whether they are solids, liquids or gases</p> <p>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)</p> <p>Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.</p> <p>ENGLISH CC LINK – LETTER WRITING/ ADVENTURE STORIES/ FACTUAL WRITING: Rivers - Thames and Amazon</p>	<p><b><u>Living things and their habitat</u></b></p> <p>Recognise that living things can be grouped in a variety of ways</p> <p>Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment</p> <p>Recognise that environments can change and that this can sometimes pose dangers to living things.</p> <p>ENGLISH CC LINK – EXPLANATION TEXT/STORIES FROM ANOTHER CULTURE/PERSUASIVE WRITING/ The Americas</p>	<p><b><u>Electricity</u></b></p> <p>Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit</p> <p>Recognise some common conductors and insulators, and associate metals with being good conductors.</p> <p>ENGLISH CC LINK – BIOGRAPHY/DIARY/EXPLANATION TEXTS/DEBATE: The Industrial Revolution</p>	<p><b><u>Sound</u></b></p> <p>Identify how sounds are made, associating some of them with something vibrating recognise that vibrations from sounds travel through a medium to the ear</p> <p>Find patterns between the pitch of a sound and features of the object that produced it</p> <p>Find patterns between the volume of a sound and the strength of the vibrations that produced it</p> <p>Recognise that sounds get fainter as the distance from the sound source increases.</p> <p>ENGLISH CC LINK – DEBATE/ POETRY AND PERFORMANCE/EXPLANATION/ PRESENTATION: The Industrial Revolution</p>

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5	<p><b><u>Properties and the changes of materials</u></b></p> <p>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</p> <p>Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution</p> <p>Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating</p>	<p><b><u>Earth and Space</u></b></p> <p>Describe the movement of the Earth, and other planets, relative to the Sun in the solar system</p> <p>Describe the movement of the Moon relative to the Earth</p> <p>Describe the Sun, Earth and Moon as approximately spherical bodies</p> <p>Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.</p>	<p><b><u>Forces</u></b></p> <p>Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object</p> <p>Identify the effects of air resistance, water resistance and friction, that act between moving surfaces</p>	<p><b><u>Living things and their habitats</u></b></p> <p>Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird</p> <p>Describe the life process of reproduction in some plants and animals.</p> <p>Animals including humans</p> <p>Describe the changes as humans develop to old age.</p>	<p><b><u>Properties and the changes of materials</u></b></p> <p>Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic</p> <p>Demonstrate that dissolving, mixing and changes of state are reversible changes</p> <p>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>	<p><b><u>Forces</u></b></p> <p>Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.</p>

	<p>ENGLISH CC LINK – NON CHRONOLOGICAL REPORTS/ADVENTURE STORIES/ INSTRUCTIONS: Ancient Egypt</p>	<p>ENGLISH CC LINK – INFORMATION BOOKLET/SCIENCE FICTION STORY/ DEBATE: Space</p>	<p>ENGLISH CC LINK – STORY FROM ANOTHER CULTURE/INFORMATION TEXT/POEM: Mexico and Mayan Culture</p>	<p>ENGLISH CC LINK – STORIES WITH A MESSAGE FROM OTHER CULTURES/CHRONOLOGICAL REPORTS/RECIPES : Mexico and Mayan Culture</p>	<p>ENGLISH CC LINK – BIOGRAPHY/ EXPLANATION TEXTS/DETECTIVE STORY/POETRY : The Wonderful World of Chemistry</p>	<p>ENGLISH CC LINK – INFORMATION TEXT/DIARY/EXPLANATION TEXT/ ADVENTURE STORY: Mountains</p>
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6	<p><b><u>Animals Including humans</u></b></p> <p>Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood</p> <p>Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function</p> <p>Describe the ways in which nutrients and water are transported within animals, including humans.</p> <p>ENGLISH CC LINK – AUDIENCE&amp; PURPOSE/INTERVIEWS/ EXPLANATION: History of St. Martin’s</p>	<p><b><u>Electricity</u></b></p> <p>Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit</p> <p>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</p> <p>Use recognised symbols when representing a simple circuit in a diagram.</p> <p>ENGLISH CC LINK – RESEARCH/ INTERVIEWS/DOCUMENTARY/ MAGAZINE: History of St. Martin’s</p>	<p><b><u>Lights</u></b></p> <p>Recognise that light appears to travel in straight lines</p> <p>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</p> <p>ENGLISH CC LINK – STORIES FROM ANOTHER CULTURE/PLAYS/ POETRY/CHRONOLOGICAL REPORT: Ancient Greece</p>	<p><b><u>Living things and their habitats</u></b></p> <p>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</p> <p>Give reasons for classifying plants and animals based on specific characteristics.</p> <p>ENGLISH CC LINK – STORIES FROM ANOTHER CULTURE/ PERSUASIVE WRITING/ADVENTURE STORIES: The Far East</p>	<p><b><u>Light</u></b></p> <p>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</p> <p>Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.</p> <p>ENGLISH CC LINK – TRIP PLANNING/DIARY/ CHRONOLOGICAL REPORT/NON CHRONOLOGICAL REPORT/DEBATE: The Isle of Wight</p>	<p><b><u>Evolution and Inheritance</u></b></p> <p>Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago</p> <p>Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents</p> <p>Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.</p> <p>ENGLISH CC LINK – BIOGRAPHY/WRITER’S STYLE/ FLASHBACKS/INTERVIEWS: The Colour Blue</p>