Leasingham St. Andrew's Church of England Primary School

'Everything you do, do in love'

Science Skills Progression

		Scientific Thinking						
Concept	Pre-School	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
I know how to work scientifically	I know how to talk about what I can see using a wide range of vocabulary	I know to ask simple questions and make observations	I can ask simple questions and make predictions based on observations I know how to perform simple tests and observe closely to gather and record results	I can ask simple questions and make predictions based on observations I know how to perform simple tests and observe closely to gather and record results KS1 are taught to use practical scientific methods, processes and skills considering observations using simple equipment; to suggest answers to questions; identifying and classifying plus gathering and recording data.	I can ask relevant questions I can set up simple practical enquiries and fair tests I know how to make accurate measurements . I know how to record my findings using simple language, drawings, labelled diagrams, bar charts and tables These skills are covered across the various topics covered in particular the Romans topic where a focus is on specific types of scientists and investigations linked to these. KS2 builds on the procedural knowledge gained in KS1 and develops these concepts further using more advanced equipment e.g data loggers; presenting results in a variety of ways e.g bar charts and recording labelled drawings.	I can ask relevant questions. I know how to set up simple practical enquiries and fair tests I can make accurate measurements. I know how to record my findings using simple language, drawings, labelled diagrams, bar charts and tables. These skills are covered across the various topics covered in particular the Romans topic where a focus is on specific types of scientists and investigations linked to these. KS2 builds on the procedural knowledge gained in KS1 and develops these concepts further using more advanced equipment e.g data loggers; presenting results in a variety of ways e.g bar charts and recording labelled drawings.	I know how to plan enquiries including variables. I know how to use appropriate techniques and apparatus. I know how to take accurate measurements. I know how to record data using scientific diagrams and labels, classification keys, graphs and models.	I know how to plan enquiries including variables. I know how to use appropriate techniques and apparatus. I know how to take accurate measurements. I know how to record data using scientific diagrams and labels, classification keys, graphs and models. I know how to report findings as well as explanations of results. I know how to present findings in written form, displays and other presentations. I know how to use test results to make predictions and set up further fair tests.

		Biology						
Concept	Pre-School	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
To understand plants	I know how to plant seeds and care for growing plants. I can begin to understand the key features of the life cycles of a plant	I can identify plants and flowers in the garden. I can begin to understand the key features of the life cycles of a plant.	I know how to identify and name a variety of common plants and trees. I know how to observe and describe how seeds and bulbs grow in to mature plants	I know how to identify and name a variety of common plants and trees. I know how to observe and describe how seeds and bulbs grow in to mature plants. I know how to identify and describe the basic structure of a variety of common flowering plants. I know how to find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.	I know how to explore the requirements of plants for life and growth and how this varies from plant to plant – Amazing Americas I know how to investigate the way in which water is transported within plants – Amazing Americas I know how to explore the role of flowers in the life cycle of a plant – Amazing Americas.	.	I know how to relate knowledge of plants to studies of all living things.	I know how to relate knowledge of plants to studies of all living things. I know how to relate knowledge of plants to studies of evolution and inheritance.
To understand animals and humans	I can begin to care for the natural environment and living things	I can identify and name insects (mini beasts) we would find in the garden. I can link animals to seasons	I know how to identify and name a variety of common animals that are birds, fish, amphibians, reptiles, mammals and invertebrates.	I can identify and name a variety of plants and animals in their habitats, including microhabitats. I can identify and name a variety of common animals that are	I can identify that animals, including humans need the right types and amounts of nutrition and that they cannot make their own food – getting nutrition from what they eat – The Greeks	I can construct and interpret a variety of food chains, identifying producers, predators and prey – World Traveller.com	I can describe changes as humans develop to old age I can identify and name the main parts of the human circulatory system and describe their functions	

			I know how to identify and name a variety of plants and animals in their habitats, including microhabitats. I know how to identify, name, draw and label the basic parts of the human body and say which part is associated with each sense.	carnivores, herbivores and omnivores I know how to describe and compare the structure of a variety of common animals. I know animals and humans have offspring with grow to adults. I can describe the importance for humans of exercise, eating right and hygiene. I know how to investigate and describe the basic needs of animals and humans for survival.	I can describe the simple functions and parts of the digestive system in humans – The Greeks. I know that humans and some animals have skeletons and muscles for support, protection and movement – The Greeks.	I know how to identify the different types of teeth in humans and their simple functions – The Romans	I can recognise the importance of diet, exercise, drugs and lifestyle on the way the human body functions I know how to describe the ways in which nutrients and water are transported within animals and humans	
To investigate living things	I can begin to care for the natural environment and living things	I can explore natural habitats found in gardens. I can describe basic life cycles of garden plants and animals		I know that most living things live in habitats to which they are suited and describe how the different habitats meet an animal's needs. I know the name of a variety of plants and animals in their habitats and know how to describe how simple food chains work	.I know how to recognise that environments change and this can sometimes pose dangers to specific habitats – Amazing Americas.	I know that living things can be grouped in a variety of ways – Word Traveller.com. I know how to explore and use classification keys – Word Traveller.com	I know how to describe the different life cycles of mammals, amphibians, insects and birds. I know and can describe the process of reproduction in some plants and animals. I know and can describe how living things are classified in to broad groups according to common observable characteristics. I know and can give reasons for classifying plants and animals based on specific characteristics.	
To understand evolution and inheritance					I know how to identify how plants and animals resemble their parents in many features - Amazing Americas. I know how living things have changed over time and that fossils and other sources of information help us identify living things who lived on the Earth long ago – Stone Age. I know how to identify how animals and plants are suited to and adapt to their environment in different ways – Amazing Americas (Rainforest).			I know how to recognise that living things have changed over time and fossils provide information about living things that inhabited the Earth millions of years ago. I know how to recognise that living things produce offspring of the same kind, but normally offspring vary. I know how to identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.

		Chemistry						
Concept	Pre-School	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
To investigate materials	I can use my senses to explore natural materials. I can explore naturally occurring changes in state.	I know how to use my senses to explore natural materials. I know and can talk about the differences between materials and changes.	I know and can distinguish between an object and the material from which it is made. I know how to identify and name a variety of everyday materials as well as describe their simple physical properties,	I know and can identify and name a variety of everyday materials as well as describe their simple physical properties. I know how to compare and group a variety of everyday materials on the basis of their simple physical properties. I know how to identify and compare the suitability of a	I know how to compare and group different kinds of rocks based on simple physical properties – Stone Age. I know how to relate the properties of rocks to their formation – igneous or sedimentary – Stone Age. I know how to describe how fossils are formed when things that have lived are trapped	I know how to compare and group materials according to whether they are solids, liquids or gases – World Traveller.com. I can observe some materials change state of matter when heated or cooled and measure the temperature at which this happens – World Traveller.com. I know how to identify the part played by evaporation and	I know and understand how some materials will dissolve in liquid to form a solution and describe how to recover a substance from a solution. I know how to use knowledge of solids, liquids and gases to decide how mixtures might be separated including filtering, sieving and evaporating. I know how to demonstrate that dissolving, mixing and changes of state are reversible but that some changes result in the formation of	

				variety of everyday materials for particular uses. I know how to find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.	within sedimentary rock – Stone Age. I know how to recognise that soils are made from rocks and organic matter – Stone Age.	condensation in the water cycle and link the rate of evaporation to temperature – World Traveller.com.	new materials and that this kind of change is not reversible. I know how to group together materials based on evidence from comparative fair tests. I know and can give reasons based on evidence from fair tests for the particular uses of materials.	

		Physics						
Concept	Pre-School	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
To understand the Earth's movement in space	I can use my senses to explore the weather linked to the changing seasons	I can explore and experience the changing seasons. I know and understand the effect of changing seasons.	I can observe changes across the four seasons and describe weather associated with the seasons.	I know how to observe changes across the four seasons and describe weather associated with the seasons. I can observe the apparent movement of the sun during the day			I know and can describe the movement of the Earth and other planets relative to the sun. I know and can describe the movement of the moon relative to the Earth. I know and can describe the Sun, Earth and Moon as approximately spherical bodies. I know and can use the idea of the Earth's rotation to explain day, night and the apparent movement of the sun across the sky. I know and can use the idea of the Earth's rotation to explain day, night and the apparent movement of the stars across the night sky. I can describe the Earth's movement around the sun and the moon relative to Earth I understand what the stars are.	
To understand light and seeing	I can explore light and shadows	I know and can explore how light travels using natural light sources. I know and can explore my senses.		I know how to observe and name a variety of light sources. I know and can explain that we see things because light travels from them to our eyes.	I know and recognise that we need light to see and that darkness is the absence of light I know light is reflected from surfaces I know light from the sun can be dangerous for my eyes and skin I know and recognise how shadows are formed and find patterns in the way they change	.		I know and understand that light travels in straight lines. I know and can explain that objects are seen because they give out or reflect light in to the eyes. I know and can explain how shadows have the same shape as the objects that cast them and predict the size of shadows when the position of a light source changes.
To investigate sound and hearing	I can explore my senses	I can explore my senses				I know how to identify how sounds are made, associating them with something vibrating – Making Connections I know and recognise that vibrations from sounds travel through a medium to the ear – Making Connections I know and recognise that sounds get fainter as the distance from the source increases. I know how to find patterns between the pitch of a sound and features of the object that produced it. I know how to find patterns between the volume of a sound and the strength of the vibrations that produced it.		

To understand electrical circuits				I know how to identify common appliances that run on electricity. I know how to construct a simple series electrical circuit.		I know and can identify common appliances that run on electricity – Making Connections I know how to construct a simple circuit and identify and name its basic parts – Making Connections I know how to identify whether or not a lamp will light on a circuit based on if it is complete or not – Making Connections I know how to recognise common conductors and insulators – Making Connections		I know and can associate the brightness of the lamp or volume of a buzzer with the number and voltage of cells. I know and can compare and give reasons for variations in how components function. I know and can use recognised symbols when representing a simple circuit in a diagram.
To understand movement, forces and magnets	I can explore and talk about different forces I can feel	I can observe and interact with forces			I know how to compare how things move on different surfaces – I know and can discuss the fact that some forces need contact between two objects but magnetic forces can act at a distance – I know how to observe how magnets attract or repel each other and attract some materials and not others – I know how to compare and group objects based on their magnetism – I know how to describe magnets as having two poles and use my knowledge to predict attraction or repulsion –		I know how to describe magnets as having two poles. I can predict whether two magnets will attract or repel. I know and can identify the effect of drag forces e.g. water resistance and friction. I know and understand that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect. I know how to explain that unsupported objects fall towards the Earth because of gravity.	