



Science Overview

Scientific Thinking							
Concept	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
To work scientifically	I know how to ask simple questions and make observations	I know how to 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 know how to 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 know how to ask relevant questions I know how to 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	I know how to ask relevant questions I know how to 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	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
		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.	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.	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.	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.	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.	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.

Biology							
Concept	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
To understand plants	I know how to identify plants and flowers in the garden I know how to 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>Seasons</i> I know how to observe and describe how seeds and bulbs grow into mature plants - <i>Seasons</i>	I know how to identify and name a variety of common plants and trees - <i>Seasons</i> I know how to observe and describe how seeds and bulbs grow into mature plants - <i>Seasons</i> I know how to identify and describe the basic structure of a variety of common flowering plants - <i>Seasons</i> I know how to find out and describe how plants need water, light and a suitable temperature to grow and stay healthy - <i>Seasons</i>		I know how to explore the requirements of plants for life and growth and how this varies from plant to plant – <i>Amazing Americas + World Traveller.com</i> I know how to investigate the way in which water is transported within plants – <i>Amazing Americas</i> I know how to explore the role of flowers in the life cycle of a plant – <i>Amazing Americas</i>		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 know how to identify and name insects (minibeasts) we would find in the garden I know how to 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>Our World</i> I know how to identify and name a variety of plants and animals in	I know how to identify and name a variety of plants and animals in their habitats, including microhabitats – <i>Our World</i> I know how to identify and name a variety of common animals	I know how to identify that animals, including humans need the right types and amounts of nutrition and that they know they make their own food – getting nutrition from what they eat – <i>The Greeks</i>		I know how to describe changes as humans develop to old age - <i>Water Worlds</i> I know how to identify and name the main parts of the human circulatory system and describe their functions - <i>Water Worlds</i>	

		<p>their habitats, including microhabitats – Our World</p> <p>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 – Superheroes</p>	<p>that are carnivores, herbivores and omnivores – Our World</p> <p>I know how to describe and compare the structure of a variety of common animals – Our World</p> <p>I know how animals and humans have offspring with grow to adults – Our World</p> <p>I know how to describe the importance for humans of exercise, eating right and hygiene - Superheroes</p> <p>I know how to investigate and describe the basic needs of animals and humans for survival – Our World & Superheroes</p>	<p>I know how to construct and interpret a variety of food chains, identifying producers, predators and prey – World Traveller.com</p> <p>I know how to describe the simple functions and parts of the digestive system in humans – The Greeks</p> <p>I know how to identify the different types of teeth in humans and their simple functions – The Greeks</p> <p>I know how to identify that humans and some animals have skeletons and muscles for support, protection and movement – The Greeks</p>		<p>I know how to recognise the importance of diet, exercise, drugs and lifestyle on the way the human body functions - Water Worlds</p> <p>I know how to describe the ways in which nutrients and water are transported within animals and humans - Water Worlds</p>	
To investigate living things	<p>I know how to explore natural habitats found in gardens</p> <p>I know how to describe the basic life cycles of garden plants and animals</p>		<p>I know how to identify that most living things live in habitats to which they are suited and describe how the different habitats meet an animal's needs – Our World</p> <p>I know how to identify and name a variety of plants and animals in their habitats and describe how simple food chains work – Our World</p>	<p>I recognise that living things can be grouped in a variety of ways – Word Traveller.com</p> <p>I know how to explore and use classification keys – Word Traveller.com</p> <p>I know how to recognise that environments change and this know sometimes pose dangers to specific habitats – Word Traveller.com + Amazing Americas</p>		<p>I know how to describe the different life cycles of mammals, amphibians, insects and birds - Our Wonderous World</p> <p>I know how to describe the process of reproduction in some plants and animals - Our Wonderous World</p> <p>I know how to describe how living things are classified into broad groups according to common observable characteristics - Our Wonderous World</p> <p>I know how to give reasons for classifying plants and animals based on specific characteristics - Our Wonderous World</p>	
To understand evolution and inheritance					<p>I know how to identify how plants and animals resemble their parents in many features - Amazing Americas</p> <p>I know how to recognise that 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 – The Stone Age</p> <p>(I know how to identify how animals and plants are suited to and adapt to their environment in different ways – World Traveller.com (desert) + Amazing Americas (Rainforest))</p>		<p>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 – The Victorians</p> <p>I know how to recognise that living things produce offspring of the same kind, but normally offspring vary - The Victorians</p> <p>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 - The Victorians</p>

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

			I know how to identify and compare the suitability of a variety of everyday materials for particular uses – Traditional Tales 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 – Traditional Tales	within sedimentary rock – Stone Age I know how to recognise that soils are made from rocks and organic matter – Stone Age	I know how to identify the part played by evaporation and condensation in the water cycle and link the rate of evaporation to temperature – World Traveller.com	state are reversible but that some changes result in the formation of new materials and that this kind of change is not reversible – The Egyptians I know how to group together materials based on evidence from comparative fair tests – The Egyptians I know how to give reasons based on evidence from fair tests for the particular uses of materials – The Egyptians	
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Physics							
Concept	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
To understand the Earth's movement in space	I know how to explore and experience the changing seasons I know how to understand the effect of changing seasons	I know how to observe changes across the four seasons and describe weather associated with the seasons - Seasons	I know how to observe changes across the four seasons and describe weather associated with the seasons - Seasons I know how to observe the apparent movement of the sun during the day - Seasons			I know how to describe the movement of the Earth and other planets relative to the sun - Space I know how to describe the movement of the moon relative to the Earth - Space I know how to describe the Sun, Earth and Moon as approximately spherical bodies - Space I know how to use the idea of the Earth's rotation to explain day, night and the apparent movement of the sun across the sky - Space I know how to use the idea of the Earth's rotation to explain day, night and the apparent movement of the stars across the night sky - Space	
To understand light and seeing	I know how to explore how light travels using natural light sources I know how to explore my senses		I know how to observe and name a variety of light sources I know how to explain that we see things because light travels from them to our eyes		I know how to recognise that we need light to see and that darkness is the absence of light – Fun of the Fair I know how light is reflected from surfaces – Fun of the Fair I know how light from the sun can be dangerous for my eyes and skin – Fun of the Fair + World Traveller.com I know how to recognise how shadows are formed and find patterns in the way they change – Fun of the Fair		I know how to understand that light travels in straight lines – Invaders & Settlers I know how to explain that objects are seen because they give out or reflect light into the eyes – Invaders & Settlers I know how to 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 – Invaders & Settlers
To investigate sound and hearing	I know how to explore my senses			I know how to identify how sounds are made, associating them with something vibrating – Amazing Americas I know how to recognise that vibrations from sounds travel through a medium to the ear – Amazing Americas			I know how to find patterns between the pitch of a sound and features of the object that produced it – Invaders & Settlers I know how to find patterns between the volume of a sound and the strength of the vibrations that produced it – Invaders & Settlers I know how to recognise that sounds get fainter as the distance from the source increases – Invaders & Settlers
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 how to identify common appliances that run on electricity – Fun of the Fair I know how to construct a simple circuit and identify and name its basic parts – Fun of the Fair I know how to identify whether or not a lamp will light on a circuit based on if it is complete or not – Fun of the Fair I know how to recognise common conductors and insulators – Fun of the Fair		I know how to associate the brightness of the lamp or volume of a buzzer with the number and voltage of cells – The Victorians I know how to compare and give reasons for variations in how components function – The Victorians I know how to use recognised symbols when representing a simple circuit in a diagram – The Victorians

<p>To understand movement, forces and magnets</p>	<p>I know how to observe and interact with forces</p>			<p>I know how to compare how things move on different surfaces – Fun of the Fair I know how to discuss the fact that some forces need contact between two objects but magnetic forces can act at a distance – Fun of the Fair + Rotten Romans I know how to observe how magnets attract or repel each other and attract some materials and not others – Fun of the Fair + Rotten Romans I know how to compare and group objects based on their magnetism – Fun of the Fair + Rotten Romans I know how to describe magnets as having two poles and use my knowledge to predict attraction or repulsion – Fun of the Fair + Rotten Romans</p>		<p>I know how to describe magnets as having two poles - Space I know how to predict whether two magnets will attract or repel- Space I know how to identify the effect of drag forces e.g. water resistance and friction - Space I understand that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect - Space I know how to explain that unsupported objects fall towards the Earth because of gravity - Space</p>	
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