Chestnuts PRIMARY SCHOOL

Inspiring Futures through Learning

Science Progression Document

Working Scientifically							
Curriculum Strand	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	ELG - To make comments about what they have heard and ask questions to clarify their understanding -To offer explanations for why things might happen, making use of recently introduced vocabulary	To observe closely, using simple equipment (magnifying glasses to look at plants) To identify (e.g. different types of plants) and classify (e.g. pictures of types of trees into two circles) To identify (e.g. basic parts of plants – template to label the picture) To ask simple questions (e.g. about physical properties of materials) To use observations to verbally suggest answers to questions.(e.g. about physical properties) To classify (e.g. sorting everyday materials into pre prepared diagram) To gather and record data (e.g. about the weather) in a pre-drawn table.	To ask simple questions and recognise they can be answered in different ways (e.g. what does a plant need to grow? What happens if it doesn't have these things?) To perform simple tests (e.g. growing plants in different conditions) To observe closely To gather and record data to help in answering questions (e.g. record their own data, using a given table) To use their observations and ideas to suggest answers to their questions (e.g. concluding what plants need to grow) To identify and classify (e.g. sort objects into living, dead and things that have never been alive)	To ask relevant questions To set up comparative tests to investigate them To make systematic and careful observations and, where appropriate, take accurate measurements using standard measurements (cm, N, g, ml, m) To gather, record and present data (bar graph, tally) in simple ways to help in answering questions To record findings using simple scientific language, drawings, labelled diagrams, bar charts and tables To report on findings from enquiries, including oral explanations or presentations of results and conclusions To use results to draw simple conclusions and suggest improvements To identify similarities and differences related to simple scientific ideas and processes To use straightforward scientific evidence to answer questions	To ask relevant questions To set up fair tests to investigate questions To make systematic and careful observations and, where appropriate, take accurate measurements using standard measurements (g, kg, C,) To gather, record, classify and present data (line graph, scatter graph, pie charts) in simple ways to help in answering questions To record findings using simple scientific language, drawings, labelled diagrams, bar charts and tables To report on findings from enquiries, including written explanations or displays of results and conclusions To use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions To identify similarities, differences and changes related to simple scientific ideas and processes To use straightforward scientific evidence to support their findings	To plan different types of scientific enquiries to answer questions, including recognising variables where necessary To take measurements, using a range of scientific equipment, with increasing accuracy and precision To record data and results of increasing complexity using scientific diagrams and labels, tables, scatter graphs and line graphs To use test results to make predictions To report findings from enquiries, including conclusions, causal relationships and explanations of results, in oral and written forms To identify scientific evidence that has been used to support or refute ideas or arguments	To plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary To take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate To record data and results of increasing complexity using scientific diagrams and labels, tables, classification keys, scatter graphs and line graphs To use test results to make predictions to set up further comparative or fair tests To reporting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations To use scientific evidence that has been used to support or refute ideas or arguments

Biology – Plants							
Curriculum Strand	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	ELG - To explore the natural world around them, making observations and drawing pictures of animals and plants	To identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. To identify and describe the basic structure of a variety of common flowering plants including trees	To observe and describe how seeds and bulbs grow into mature plants To find out and describe how plants need water, light and a suitable temperature to grow and stay healthy	To identify and describe the functions of different parts of flowering plants: roots, stem or trunk, leaves and flowers To 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 To investigate the way in which water is transported within plants To explore the part that the flower plays the life cycle of flowering plants including pollination, seed formation and seed dispersal			

Biology – Animals, including humans							
Curriculum Strand	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	ELG - To explore the natural world around them, making observations and drawing pictures of animals and plants	To identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals To identify and name a variety of common animals that are carnivores, herbivores and omnivores To describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets) To identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense	To notice that animals, including humans, have offspring which grow into adults To find out about and describe the basic needs of animals, including humans, for survival (water, food and air) To describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene	To 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 To identify that humans and some other animals have skeletons and muscles for support, protection and movement	To describe the simple functions of the basic parts of the digestive system in humans To identify the different types of teeth in humans and their simple functions To construct and interpret a variety of food chains, identifying producers, predators and prey	To describe the changes as humans develop to old age	To identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood To recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function To describe the ways in which nutrients and water are transported within animals, including humans

Biology – Living Things and Their Habitats							
Curriculum Strand	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	ELG - To know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class		To explore and compare the differences between things that are living, dead, and things that have never been alive To 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 To identify and name a variety of plants and animals in their habitats, including micro-habitats To 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		To recognise that living things can be grouped in a variety of ways To explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment To recognise that environments can change and that this can sometimes pose dangers for living things	To describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird To describe the life process of reproduction in some plants and animal	To 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 To give reasons for classifying plants and animals based on specific characteristics

Biology – Evolution and Inheritance							
Curriculum Strand	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
							To recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago To recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents To identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution

Chemistry – Materials, Rocks and States of Matter							
Curriculum Strand	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	ELG – To understand some important processes and changes in the natural world around them, including the seasons and changing states of matter	To distinguish between an object and the material from which it is made To identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock To describe the simple physical properties of a variety of everyday materials To compare and group together a variety of everyday materials on the basis of their simple physical properties	To identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses To find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching	To compare and group together different kinds of rocks on the basis on their appearance and simple physical properties To describe in simple terms how fossils are formed when things have lived are trapped within rocks To recognise that soils are made from rocks and organic matter	To compare and group materials together, according to whether they are solids, liquids of gases To 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 To identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature	To 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 To know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution To use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating To give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic To demonstrate that dissolving, mixing and changes of state are reversible changes To 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	

Physics – Seasonal Changes							
Curriculum Strand	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	ELG – To know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class To understand some important processes and changes in the natural world around them, including the seasons and changing states of matte	To observe changes across the four seasons To observe and describe weather associated with the seasons and how day length varies					

Physics - Light							
Curriculum Strand	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
				To recognise that they need light in order to see things and that dark is the absence of light To notice that light is reflected from surfaces To recognise that light from the sun can be dangerous and that here are ways to protect their eyes To recognise that shadows are formed when the light source is blocked by a solid object To find patterns in the way that the size of shadows change.			To recognise that light appears to travel in straight lines To 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 To 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 To use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them

Physics - Sound							
Curriculum Strand	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
					To identify how sounds are made, associating some of them with something vibratingTo recognise the vibrations from sounds travel through a medium to the ear To find patterns between the volume of a sound and features of the object that produced it To find patterns between the pitch of a sound and features of the object that produced it To recognise that sounds get fainter as the distance from the sound increases		

Physics – Forces, including Magnets							
Curriculum Strand	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	ELG – To understand some important processes and changes in the natural world around them, including the seasons and changing states of matter			To compare how things move on different surfaces To notice that some forces need contact between two objects, but magnetic forces can act at a distance To observe how magnets attract or repel each other and attract some materials and not others To compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials To describe magnets as having two poles To predict whether two magnets will attract or repel each other, depending on which poles are facing		To explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object To identify the effects of air resistance and friction, that act between moving surfaces To recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect	

Physics - Electricity							
Curriculum Strand	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
					To identify common appliances that run electricity To construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers To 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 To recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit To recognise some common conductors and insulators, and associate metals with being good conductors		To associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit To 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 To use recognised symbols when representing a simple circuit in a diagram

Physics – Earth and Space							
Curriculum Strand	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
						To describe the movement of the Earth, and other planets, relative to the Sun in the solar system To describe the movement of the Moon relative to the Earth To describe the Sun, Earth and Moon as approximately spherical bodies To use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky	