



Elton Primary School and Nursery

Science Overview

Scheme used : My Rising Stars - Switched on Science

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Nursery	Seasonal changes across the year					
	<u>Unit 7 - Dinosaurs</u> Children will develop their understanding of grouping dinosaurs according to criteria such as teeth, claws, spikes and wings. They will also develop their ability to find out information about dinosaurs, including their habitat, camouflage and ideas about how they became extinct. They will learn that we know dinosaurs existed because people have found their remains as fossils, bones and fossilised dinosaur poos (coprolites), thus introducing children to early ideas of evidence as well as specific types of scientists, such as palaeontologists. <u>Unit 18- Biscuit Bars</u> Children develop their ability to sort objects	<u>Unit 5 - Pets and Vets</u> Children will begin to realise that humans are a type of animal that has the same needs as other animals; they will think about the importance of exercise, food and health care for all animals. <u>Unit 16 - Whatever the Weather</u> The activities in this unit will help children to notice and talk about change over time. Initially they will be making simple comparisons about the temperature and weather conditions. Gradually, however, they can be supported to make and record simple measurements; children will get the most out of this unit if they have access to a	<u>Unit 2 - Slimy Things</u> In this unit, children experience a range of liquids and semi-liquids, helping them to understand differences in consistency and how they behave, e.g. how runny (viscous) they are. By offering children two different substances simultaneously they have the opportunity to compare similarities and differences. <u>Unit 3 - Mud Glorious Mud</u> The aim is to develop children's understanding of soil as a natural material, which, when water is added, changes its consistency and properties. Children explore this by adding more or less water or soil and other materials such as sand,	<u>Unit 15 - Pirates</u> This unit focuses on four main areas: • Floating and sinking, through problem solving to make pirate boats and rafts. • Sorting and identifying materials, through sifting and using magnets. • Sorting and identifying animals, particularly from habitats such as the sea and rainforest. • Supporting the development of children's understanding of different foods and changes in materials during cooking, by designing and cooking pirate food.	<u>Unit 7 - Dinosaurs</u> Children will develop their understanding of grouping dinosaurs according to criteria such as teeth, claws, spikes and wings. They will also develop their ability to find out information about dinosaurs, including their habitat, camouflage and ideas about how they became extinct. They will learn that we know dinosaurs existed because people have found their remains as fossils, bones and fossilised dinosaur poos (coprolites), thus introducing children to early ideas of evidence as well as specific types of scientists, such as palaeontologists. <u>Units 10 - Light Magic</u>	<u>Unit 15 - Pirates</u> This unit focuses on four main areas: • Floating and sinking, through problem solving to make pirate boats and rafts. • Sorting and identifying materials, through sifting and using magnets. • Sorting and identifying animals, particularly from habitats such as the sea and rainforest. • Supporting the development of children's understanding of different foods and changes in materials during cooking, by designing and cooking pirate food. <u>Unit 6 - Superhero Material</u> Children develop their ability to work scientifically as they are supported to sort

	according to their own and other criteria. They learn how mixing materials (ingredients) and heating them can change a mixture. They identify cause and effect, and explore the forces that can change the shape of dough (e.g. push, pull, twist and stretch) and carry out simple tests.	range of measuring equipment.	pebbles and parts of plants. Children test their own ideas, for example, 'What will happen if I pour more water in?'		Children will have the opportunity to learn that dark is the absence of light. They will experience the effects of light only travelling in straight lines and be encouraged to talk about this. They will also begin to learn that light originates from a light source and that shiny surfaces work by reflecting, rather than by creating, light. They will also have opportunities to experiment with colour.	and group materials, carry out simple tests and talk about their findings. They begin to identify everyday materials and describe their physical properties. They start to distinguish between an object and the material from which it is made.
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Reception	Seasonal changes across the year					
	<u>Unit 4 - Save the Gingerbread Man</u> In this unit the focus is on materials and how they change due to mixing and heating; there are opportunities for children to use their senses to explore ingredients and to develop their knowledge of common materials used to make kitchen utensils and equipment. The children will also learn about different	<u>Unit 12 - Frozen</u> Children will have lots of opportunities to observe changes over time as they explore what happens when water is cooled and ice is warmed. They will also be able to talk about their ideas, perform simple tests and compare their results.	<u>Unit 16 - Whatever the Weather</u> The activities in this unit will help children to notice and talk about change over time. Initially they will be making simple comparisons about the temperature and weather conditions. Gradually, however, they can be supported to make and record simple measurements; children will get the most out of this unit if they have access to a	<u>Unit 1 - The Potting Shed</u> Children will begin to recognise and name a variety of different plants, not only the ones that they grow but native plants that may, as weeds, need to be removed from their garden. They will also begin to confidently talk about what a plant needs to thrive, including light, water and soil.	<u>Unit 13 - Food of the Seasons</u> This unit helps children develop an understanding of how the changing seasons have an impact on when food is at its best and cheapest to buy because it is in season. It will also help them to begin to understand the importance of a healthy and varied diet to human health. They learn how food is grown and prepared	<u>Units 10 - Light Magic</u> Children will have the opportunity to learn that dark is the absence of light. They will experience the effects of light only travelling in straight lines and be encouraged to talk about this. They will also begin to learn that light originates from a light source and that shiny surfaces work by reflecting, rather than by creating, light. They

	animals in the story, researching information about life processes and life cycles.		range of measuring equipment.		and its importance to our survival. <u>Unit 14 - Into the Woods</u> Children will become familiar with, and be able to name, a growing number of native plants and animals. They will also begin to use simple secondary sources to discover more about British woodlands.	will also have opportunities to experiment with colour.
KS1	National Curriculum - Working scientifically During years 1 and 2, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content: • 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					
Year 1	<u>Seasonal Changes (across the year)</u> National Curriculum - -Seasonal changes Pupils should be taught to: • observe changes across the 4 seasons • observe and describe weather associated with the seasons and how day length varies					
	<u>Topic 1 - Who am I?</u> National Curriculum - Animals, including humans Pupils should be taught to: • identify, name, draw and label the basic parts of the human body and say	<u>Topic 2 - Celebrations</u> National Curriculum - Animals, including humans Pupils should be taught to: • identify, name, draw and label the basic parts of the	<u>Topic 3 - Polar Places</u> National Curriculum - Animals, including humans Pupils should be taught to: • identify and name a variety of common animals including fish, amphibians,	<u>Topic 4 - Plants and Animals Where we Live</u> National Curriculum - Plants Pupils should be taught to: • identify and name a variety of common wild and garden	<u>Topic 5 - On Safari</u> National Curriculum - Animals, including humans Pupils should be taught to: • identify and name a variety of common animals including fish, amphibians,	<u>Topic 6 - Holiday</u> National Curriculum - Animals, including humans Pupils should be taught to: • identify and name a variety of common animals including fish, amphibians,

	which part of the body is associated with each sense	human body and say which part of the body is associated with each sense National Curriculum - Everyday materials Pupils should be taught to: - distinguish between an object and the material from which it is made - describe the simple physical properties of a variety of everyday materials National Curriculum - Plants Pupils should be taught to: - identify and describe the basic structure of a variety of common flowering plants, including trees	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) National Curriculum - Everyday materials Pupils should be taught to: - 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	plants, including deciduous and evergreen trees - identify and describe the basic structure of a variety of common flowering plants, including trees National Curriculum - Animals, including humans Pupils should be taught to: - 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)	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)	reptiles, birds and mammals - describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets) National Curriculum - Everyday materials Pupils should be taught to: - 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
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Year 2	<u>Topic 1 - Healthy Me</u> National Curriculum - Animals, including humans Pupils should be taught to: - describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene - find out about and describe the basic needs of humans for survival (water, food and air) National Curriculum - Uses of everyday materials Pupils should be taught 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	<u>Topic 4 - Our Local Environment</u> National Curriculum - Living things and their habitats Pupils should be taught to: - 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	<u>Topic 2 - Materials Monsters</u> National Curriculum - Uses of everyday materials Pupils should be taught 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 - find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching	<u>Topic 3 - Squash, Bend, Twist and Stretch</u> National Curriculum - Uses of everyday materials Pupils should be taught to: find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching	<u>Topic 5 - Young Gardeners</u> National Curriculum - Plants Pupils should be taught to: - 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	<u>Topic 6 - Little Master Chefs</u> Animals, including humans Pupils should be taught to: - find out about and describe the basic needs of humans for survival (water, food and air) - describe the importance for humans of eating the right amounts of different types of food, and hygiene National Curriculum - Uses of everyday materials Pupils should be taught 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
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		name different sources of food				
LKS2	National Curriculum - Working scientifically During years 3 and 4, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content: • 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.					
Year 3	<u>Topic 2 - Food and our Bodies</u> National Curriculum - Animals, including humans Pupils should be taught 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 • identify that humans and some other animals have skeletons and muscles for	<u>Topic 2 - Food and our Bodies</u> National Curriculum - Animals, including humans Pupils should be taught 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 • identify that humans and some other animals have skeletons and muscles for	<u>Topic 1 - Rocks, Soils and Fossils</u> National Curriculum - Rocks Pupils should be taught to: • 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	<u>Topic 5 - Forces and Magnets</u> National Curriculum - Forces and magnets Pupils should be taught to: • 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	<u>Topic 4 - How does your Garden Grow?</u> National Curriculum - Plants Pupils should be taught to: • 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	<u>Topic 3 - Light and Shadows</u> National Curriculum - Light Pupils should be taught to: • 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

	support, protection and movement	support, protection and movement		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	- 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	source is blocked by an opaque object find patterns in the way that the size of shadows change
Year 4	<u>Topic 4 - Teeth and Eating</u> National Curriculum - Animals, including humans Pupils should be taught to: - 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	<u>Topic 1 - What's that Sound?</u> National Curriculum - Sound Pupils should be taught to: - 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	<u>Topic 3 - Looking at States</u> National Curriculum - States of matter Pupils should be taught to: - 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	<u>Topic 2 - Living Things</u> National Curriculum - Living things and their habitats Pupils should be taught to: - 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	<u>Topic 2 - Living Things</u> National Curriculum - Living things and their habitats Pupils should be taught to: - 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	<u>Topic 5 - Power it Up</u> National Curriculum - Electricity Pupils Should be taught to: - 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

		strength of the vibrations that produced it recognise that sounds get fainter as the distance from the sound source increases	condensation in the water cycle and associate the rate of evaporation with temperature			- 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
UKS2	National Curriculum - Working scientifically During years 5 and 6, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content: - 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					
Year 5	<u>Topic 5 - Growing Up and Growing Old</u> National Curriculum - Animals, including humans Pupils should be taught to: describe the changes as humans develop to old age	<u>Topic 3 - Circle of Life</u> National Curriculum - Living things and their habitats Pupils should be taught to: - describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird - describe the life process of	<u>Topic 4 - Let's Get Moving</u> National Curriculum - Forces Pupils should be taught to: explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object	<u>Topic 1 - Out of this World</u> National Curriculum - Earth and space Pupils should be taught to: - describe the movement of the Earth and other planets relative to the sun in the solar system - describe the movement of the	<u>Topic 2 - Material World</u> National Curriculum - Properties and changes of materials Pupils should be taught to: compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency,	<u>Topic 6 - Amazing Changes</u> National Curriculum - Properties and changes of materials Pupils should be taught to: - demonstrate that dissolving, mixing and changes of state are reversible changes - explain that some changes result in the formation of

		reproduction in some plants and animals	- 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	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	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	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
Year 6	<u>Topic 4 - Light</u> National Curriculum - Light Pupils should be taught to:	<u>Topic 1 - Classifying Living Things</u> National Curriculum - Living things and their habitats Pupils should be taught to:	<u>Topic 2 - Healthy Bodies</u> National Curriculum - Animals, including humans Pupils should be taught to:	<u>Topic 3 - Evolution and Inheritance</u> National Curriculum - Evolution and inheritance Pupils should be taught to:	<u>Topic 5 - Electricity</u> National Curriculum - Electricity Pupils should be taught to: associate the brightness of a	<u>Topic 6 - The Titanic</u> National Curriculum - Working Scientifically Skills This topic develops the following working scientifically skills:

	• 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	• 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	• 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	• 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	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	• Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. • Take measurements, use a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. • Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. • Report and present 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.
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