



Compassion, Joy, Perseverance, Respect
 'Live life in all its fullness' John 10:10

Progression of Knowledge in Science

Topics									
Devas	Bannerman			Porteous			Borton		
<p>Fantastic Me!</p> <ul style="list-style-type: none"> - I can name the main parts of my body! - What are our 5 senses? - What part of our body do we use for each sense? - Why is dental hygiene important? - Seasons- Autumn <p>Let's celebrate!</p> <p>Polar Regions</p> <ul style="list-style-type: none"> - Changing states- freezing and melting - Life cycle of a penguin - Seasons- winter <p>Growing</p> <ul style="list-style-type: none"> - Investigate different mini-beasts - Life cycle of a butterfly - Where do mini-beasts live? (Make a wormery) - Parts of a plant - What do plants need to grow? - Look at different seeds and grow different plants - Why do we need to have a healthy diet? <p>London</p> <p>Beside the seaside</p> <ul style="list-style-type: none"> - How can we protect sea creatures? (single use plastic) - What is a circuit? - How can I make a lightbulb work? - Seasons- Summer 	Cycle A			Cycle A			Cycle A		
	Autumn	Spring	Summer	Autumn	Spring	Summer	Autumn	Spring	Summer
	The human body	Planting A	Plants	Skeletons	Fossils	Plants A	Forces	Properties of materials	Reproduction A
	Seasonal changes	Animals	Planting C	Movement	Soils	Forces	Space	Animals including humans	Reversible and irreversible changes
	Materials	Caring for the planet	Growing and cooking	Nutrition and diet	Light	Magnets	Global warming	Life cycles	Plastic pollution
	Seasonal changes	Seasonal changes	Seasonal changes	Food waste		Plants B			Reproduction B
		Planting B		Rocks		Biodiversity			
	Cycle B			Cycle B			Cycle B		
	Autumn	Spring	Summer	Autumn	Spring	Summer	Autumn	Spring	Summer
	Animals needs for survival	Plants (light and dark)	Plants (bulbs and seeds)	Group and classify living things	Sound	Data collection C	Living things and their habitats	Light	Variation
Humans	Living things and their habitats	Growing up	Data collection A	Data collection B	Habitats	Electricity	Light pollution	Adaptations	
Materials	Light and dark	Bulbs and seeds	States of matter	Electricity	Deforestation	Renewable energy	The circulatory system	Fossils	
Plastic		Growing up		Energy	The digestive system		Diet, drugs and lifestyle		
		Wildlife			Food chains				



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Animals including humans

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Devas	Bannerman		Porteous		Borton
<p>30-50 months I know some animals are big and some are small.</p> <p>I know I cannot eat unhealthy foods like chips and pizza every day and I need a variety of food.</p> <p>I know that different animals like different foods and live in difference places.</p> <p>40-60+ months I know that different animals have different body parts (some have no legs, some have lots).</p> <p>I know some different places animals might live.</p> <p>I know that some animals hibernate.</p> <p>I know some animals are adapted to live under the sea and that humans are adapted to live on land.</p> <p>I know washing my hands will kill off germs.</p> <p>I know about the importance of a healthy diet.</p> <p>I know that exercise is good for my body.</p> <p>ELG Personal, Social and Emotional Development; Managing Self: - Manage their own basic hygiene and personal needs, including dressing, going to the toilet and understanding the importance of healthy food choices.</p> <p>Understanding the World; The Natural World: - Explore the natural world around them, making observations and drawing pictures of animals and plants.</p>	<p>Year 1 I know how to identify and name a variety of common animals including fish, amphibians, reptiles, mammals and birds</p> <p>I know how to identify and name a variety of common animals that are carnivores, herbivores and omnivores</p> <p>I know how to describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets)</p> <p>I know how 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.</p>	<p>Year 2 I know that animals, including humans, have offspring which grow into adults.</p> <p>I know how to describe the basic needs of animals, including humans, for survival (water, food and air)</p> <p>I know how to describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene</p>	<p>Year 3 I know how 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.</p> <p>I know how to identify that humans and some other animals have skeletons and muscles for support, protection and movement.</p>	<p>Year 4 I know how to describe the simple functions of the basic parts of the digestive system in humans.</p> <p>I know how to identify the different types of teeth in humans and their simple functions.</p> <p>I know how to construct and interpret a variety of food chains, identifying producers, predators and prey.</p>	<p>Year 5 I know how to describe the changes as humans develop to old age</p> <p>Year 6 I know how to identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood.</p> <p>I know how to recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function.</p> <p>I know how to describe the ways in which nutrients and water are transported within animals, including humans.</p>



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Living things and their habitats

Devas	Bannerman		Porteous		Borton	
<p>40-60+ months I know about similarities and differences in relation to living things and their habitats.</p> <p>I know how to talk about the features of my own immediate environment and how environments might vary from one another.</p> <p>I know how to make observations of animals and plants and explain why some things occur, and talk about changes.</p> <p>ELG Understanding the World; Past and Present: - Talk about the lives of the people around them and their roles in society.</p> <p>Understanding the World; People, Culture and Communities: - Describe their immediate environment using knowledge from observation, discussion, stories, non-fiction texts and maps.</p> <p>Understanding the World; The Natural World: - Explore the natural world around them, making observations and drawing pictures of animals and plants.</p>	<p>Year 1</p>	<p>Year 2 I know how to explore and compare the differences between things that are living, dead, and things that have never been alive.</p> <p>I know how 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</p> <p>I know how to identify and name a variety of plants and animals in their habitats, including micro-habitats.</p> <p>I know how 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.</p>	<p>Year 3</p>	<p>Year 4 I know how to recognise that living things can be grouped in a variety of ways.</p> <p>I know how to explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment.</p> <p>I know how to recognise that environments can change and that this can sometimes pose dangers and have an impact on living things</p>	<p>Year 5 I know how to describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird.</p> <p>I know how to describe the life process of reproduction in some plants and animals.</p>	<p>Year 6 I know how 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.</p> <p>I know how to give reasons for classifying plants and animals based on specific characteristics.</p>



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Plants

Plants						
Devas	Bannerman		Porteous		Borton	
<p>40-60+ months</p> <p>I know that plants need sun to grow.</p> <p>I know that plants need water to grow.</p> <p>I know that most plants need soil and nutrients to grow.</p> <p>I know some plants grow from seeds.</p> <p>ELG Understanding the World; The Natural World: - Explore the natural world around them, making observations and drawing pictures of animals and plants.</p>	<p>Year 1</p> <p>I know how to identify and name a variety of common wild and garden plants, including deciduous and evergreen trees.</p> <p>I know how to identify and describe the basic structure of a variety of common flowering plants, including trees.</p>	<p>Year 2</p> <p>I know how to observe and describe how seeds and bulbs grow into mature plants.</p> <p>I know how to find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.</p>	<p>Year 3</p> <p>I know how to identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers.</p> <p>I know how 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.</p> <p>I know how to investigate the way in which water is transported within plants.</p> <p>I know how to explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.</p>	<p>Year 4</p>	<p>Year 5</p>	<p>Year 6</p>



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Materials

Materials						
Devas	Bannerman		Porteous		Borton	
30-50 months	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<p>I can name some different materials.</p> <p>I can sort some objects into different materials.</p> <p>40-60+ months</p> <p>I know objects are made from different materials.</p> <p>I know some similarities and differences in relation to places, objects, materials and living things.</p> <p>I know the features of my immediate environment and how environments might vary from one another.</p> <p>ELG Understanding the World; People, Culture and Communities:</p> <ul style="list-style-type: none"> - Describe their immediate environment using knowledge from observation, discussion, stories, non-fiction texts and maps. <p>Understanding the World; The Natural World:</p> <ul style="list-style-type: none"> - Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter. 	<p>I know how to distinguish between an object and the material from which it is made.</p> <p>I know how to identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock.</p> <p>I know how to describe the simple physical properties of a variety of everyday materials.</p> <p>I know how to compare and group together a variety of everyday materials on the basis of their simple physical properties.</p>	<p>I know how 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.</p> <p>I know how to describe how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.</p>			<p>I know how to compare and group everyday materials based on their properties.</p> <p>I know some materials will dissolve in liquid to form a solution, and can describe how to recover a substance from a solution.</p> <p>I know how mixtures might be separated, including through filtering, sieving and evaporating.</p> <p>I know reasons for the particular uses of everyday materials, including metals, wood and plastic.</p> <p>I know how to demonstrate that dissolving, mixing and changes of state are reversible changes.</p> <p>I know 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>	



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Forces and Magnets

Devas	Porteous	Borton
<p>40-60+ months I know that magnets are 'sticky' without being sticky.</p> <p>I know magnets stick to certain materials (metals).</p> <p>I know how to find an object which a magnet will stick to.</p> <p>ELG Communication and Language; Speaking: - Offer explanations for why things might happen, making use of recently introduced vocabulary from stories, non-fiction, rhymes and poems when appropriate.</p> <p>Understanding the World; The Natural World: - Explore the natural world around them, making observations and drawing pictures of animals and plants</p>	<p>Year 3 I know how to compare how things move on different surfaces</p> <p>I know how to notice that some forces need contact between two objects, but magnetic forces can act at a distance</p> <p>I know how 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</p> <p>I know how to describe magnets as having two poles</p> <p>I know how to predict whether two magnets will attract or repel each other, depending on which poles are facing</p>	<p>Year 5 I know how to explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object</p> <p>I know how to identify the effects of air resistance, water resistance and friction, that act between moving surfaces</p> <p>I know how to recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect</p>

Seasonal changes

Devas	Bannerman
<p>40-60+ months I know there are four seasons.</p> <p>I know how to identify each season using the environment around me.</p> <p>I know how to identify seasonal colours.</p> <p>I know that lots of new life begins in the Spring time.</p> <p>I know how to choose appropriate clothing for the seasons</p> <p>ELG Understanding the World; People, Culture and Communities: - Describe their immediate environment using knowledge from observation, discussion, stories, non-fiction texts and maps.</p> <p>Understanding the World; The Natural World: - Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.</p>	<p>Year 1 I know how to observe and describe changes across the four seasons</p> <p>I know how to observe and describe weather associated with the seasons and how day length varies</p>



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Light	
Bannerman	Borton
<p>Year 3 I know I need light in order to see things and that dark is the absence of light.</p> <p>I know that light is reflected from surfaces.</p> <p>I know light from the sun can be dangerous and that there are ways to protect eyes.</p> <p>I know shadows are formed when the light from a light source is blocked by an opaque object.</p> <p>I know how to find patterns in the way that the size of shadows change.</p>	<p>Year 6 I know light appears to travel in straight lines.</p> <p>I know how 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.</p> <p>I know how 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.</p> <p>I know how to use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them</p>
Electricity	
Porteous	Borton
<p>Year 4 I know how to identify common appliances that run on electricity.</p> <p>I know how to construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers.</p> <p>I know 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>I know 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>I know some common conductors and insulators, and associate metals with being good conductors</p>	<p>Year 6 I know how to 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>I know how 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</p> <p>I know how to use recognised symbols when representing a simple circuit in a diagram</p>
Rocks	
Porteous	
<p>Year 3 I know how to compare and group together different kinds of rocks on the basis of their appearance and simple physical properties.</p> <p>I know how to describe in simple terms how fossils are formed when things that have lived are trapped within rock.</p> <p>I know how to recognise that soils are made from rocks and organic matter.</p>	



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Sound

Porteous

Year 4

I know how to identify how sounds are made, associating some of them with something vibrating.

I know how to recognise that vibrations from sounds travel through a medium to the ear.

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.

I know how to recognise that sounds get fainter as the distance from the sound source increases.

States of matter

Porteous

Year 4

I know how to compare and group materials together, according to whether they are solids, liquids or gases.

I know how 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 (°C).

I know how to identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.

Earth and space

Borton

Year 5

I know how to describe the movement of the Earth, and other planets, relative to the Sun in the solar system.

I know how to describe the movement of the Moon relative to the Earth

I know how to describe the Sun, Earth and Moon as approximately spherical bodies.

I know how to use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.

I know that the Sun is a star at the centre of our solar system and that it has eight planets: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune (Pluto was reclassified as a 'dwarf planet' in 2006).

I know that a moon is a celestial body that orbits a planet (Earth has one moon; Jupiter has four large moons and numerous smaller ones).



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Evolution and inheritance

Borton

Year 6

I know how 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

I know how to recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents

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