

Science Long Term Plan - Buckstones

<u>Year Group</u>	<u>Autumn Term</u>		<u>Spring Term</u>		<u>Summer Term</u>	
<p>Reception</p>	<p>My body - growing and changing. Comparing each other - similarities and differences.</p>	<p>Forest fun focus - seasons. I change seasons. Understand the effect of changing seasons on the natural world around them. Observing the changing</p>	<p>Keeping safe and keeping healthy (including oral hygiene). Magnets - forces.</p>	<p>Water based experimenting, e.g. floating and sinking, freezing and melting. Learning the life cycle of a frog.</p>	<p>Plants and growing. What do plants need to survive? Which plants do we eat?</p>	<p>Learning the life cycle of a butterfly. Weather/different climates/seasonal changes.</p>

		g state of our outdoor school environment.				
Year 1	Seasonal Changes (ONGOING TOPIC) •observe changes across the 4 seasons •observe and describe weather associated with the seasons and how day length varies					
	Animals, including humans •identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense	Everyday Materials •distinguish between an object and the material from which it is made •identify/ name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock			Plants •identify/ name variety of common wild and garden plants, including deciduous and evergreen trees	

	<p>Animals, including humans</p> <ul style="list-style-type: none"> •identify/ name a variety of common animals including fish, amphibians, reptiles, birds and mammals •identify/ name a variety of common animals that are carnivores, herbivores and omnivores •describe/compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets) 	<ul style="list-style-type: none"> •describe the simple physical properties of a variety of everyday materials •compare / group together a variety of everyday materials on the basis of their simple physical properties 	<ul style="list-style-type: none"> •identify / describe the basic structure of a variety of common flowering plants, including trees 	
Year 2	<p>Animals, including humans</p> <ul style="list-style-type: none"> •notice that animals, including humans, have offspring which grow into adults •find out about and describe the basic needs of animals, including humans, for survival (water, food and air) •describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene 	<p>Uses of everyday materials</p> <ul style="list-style-type: none"> •identify /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 •The work of scientists e.g. Charles McIntosh, John Boyd Dunlop and John McAdam 	<p>Living things and their habitats</p> <ul style="list-style-type: none"> •explore/compare 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 	<p>Plants</p> <ul style="list-style-type: none"> •observe/describe how seeds and bulbs grow into mature plants •find out/describe how plants need water, light and a suitable temperature to

			<p>different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other</p> <ul style="list-style-type: none"> •identify/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 name different sources of food 	grow and stay healthy	
Year 3	<p>Animals including Humans</p> <ul style="list-style-type: none"> •identify that animals, including humans, need 	<p>Forces and Magnets</p> <ul style="list-style-type: none"> •compare how things move on different surfaces 	<p>Plants</p> <ul style="list-style-type: none"> •identify /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) 	<p>Rocks</p> <ul style="list-style-type: none"> •compare and group together different kinds of rocks on the basis of 	<p>Light</p> <ul style="list-style-type: none"> •recognise that they need light in order to see things and that dark is the absence of light

	<p>the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat</p> <ul style="list-style-type: none"> •identify that humans and some other animals have skeletons and muscles for support, protection and movement 	<ul style="list-style-type: none"> •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 of everyday materials on the basis 	<p>from soil, and room to grow) and how they vary from plant to plant</p> <ul style="list-style-type: none"> •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 	<p>their appearance and simple physical properties</p> <ul style="list-style-type: none"> •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 	<ul style="list-style-type: none"> •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 source is blocked by an opaque object •find patterns in the way that the size of shadows change
--	--	--	---	---	---

		<p>of whether they are attracted to a magnet, and identify some magnetic materials</p> <ul style="list-style-type: none"> •describe magnets as having 2 poles •predict whether 2 magnets will attract or repel each other, depending on which poles are facing 			
Year 4	<p>Living Things, their Habitats</p> <ul style="list-style-type: none"> •recognise that living things can be grouped in a variety of ways 	<p>Animals, including humans</p>	<p>States of matter</p> <ul style="list-style-type: none"> •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 	<p>Sound</p> <ul style="list-style-type: none"> •identify how sounds are made, associating some of them with something vibrating 	<p>Electricity</p> <ul style="list-style-type: none"> •identify common appliances that run on electricity

	<ul style="list-style-type: none"> •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 •construct and interpret a variety of food chains, identifying producers, predators and prey 	<p>main parts of the human digestive system are the mouth, oesophagus, stomach, small intestine, large intestine and anus</p> <p>function of the digestive system</p>	<p>measure or research the temperature at which this happens in degrees Celsius (°C)</p> <ul style="list-style-type: none"> •identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature 	<ul style="list-style-type: none"> •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 strength of the vibrations that produced it •recognise that sounds get fainter as the distance from the sound source increases 	<ul style="list-style-type: none"> •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 •recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a
--	--	---	--	--	--

		m is to take the nutrie nts that you need out of the food and drink that you consu me so that it can go to where it is neede d in your body and then			simple series circuit •recognise some common conductors and insulators, and associate metals with being good conductors
--	--	--	--	--	--

the
waste
can be
got
rid of.

Teeth
are an
important
part
of
your
daily
life.
They
help
you
eat,
talk
and
smile.

Tooth
decay
is
caused
by
acid

		<p>which is produced by bacteria.</p> <p>Different animals have different types of teeth so that they can eat different diets</p> <p>main three parts of a</p>			
--	--	--	--	--	--

		food chain are producer, primary consumer and secondary consumer.			
Year 5	Properties and changes to materials <ul style="list-style-type: none"> • 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 • know that some materials will dissolve in liquid to form a solution, and describe how 	Earth and Space <ul style="list-style-type: none"> • describe the movement of the Earth and other planets relative to the sun in the solar system • describe the movement of the moon relative to the Earth • describe the sun, Earth and moon as 	Forces <ul style="list-style-type: none"> • explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object • identify the effects of air resistance, water resistance and friction, that act 	Living things and their habitats <ul style="list-style-type: none"> • describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird • describe the life process of reproduction 	Animals including humans <ul style="list-style-type: none"> • describe the changes as humans develop to old age

	<p>to recover a substance from a solution</p> <ul style="list-style-type: none"> •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 •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 <p>(Spencer Silver/Ruth Benerito)</p>	<p>approximately spherical bodies</p> <ul style="list-style-type: none"> •use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky 	<p>between moving surfaces</p> <ul style="list-style-type: none"> •recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect <p>(Isaac Newton/Ptolemy/Alh azam)</p>	<p>in some plants and animals</p> <p>(Jane Goodall/David Attenborough)</p>	
Year 6	Electricity	Light	Living Things & their habitats	Animals, including humans	

	<ul style="list-style-type: none"> •associate the brightness of a 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 	<ul style="list-style-type: none"> •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 	<ul style="list-style-type: none"> •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 (Charles Linnaeus) 	<ul style="list-style-type: none"> •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 <p style="text-align: center;">Evolution and inheritance</p> <ul style="list-style-type: none"> •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 (Charles Darwin and Mary Anning)
--	--	---	---	--

		<p>our eyes or from light sources to objects and then to our eyes</p> <ul style="list-style-type: none">•use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them		
--	--	---	--	--