Curriculum Long Term Plan 2019-20

Curriculum Area: Science

<table>
<tr><th></th><th>Aut 1</th><th>Aut 2</th><th>Spr 1</th><th>Spr 2</th><th>Sum 1</th><th>Sum 2</th></tr>
<tr><td rowspan="2">Yr1</td><td>My body
To name, draw and label the parts of the human body that I can see.
To link the correct part of the human body to each sense.</td><td>Seasonal changes
To observe and comment on seasonal changes.
To name the seasons
To suggest the type of weather in each season
To observe how day length varies</td><td>Common animals
To name a variety of animals including fish, amphibians, reptiles birds and mammals.
To classify and name animals by what they eat (carnivore, herbivore and omnivore).
To sort animals into categories (including fish, amphibians, reptiles, birds and mammals).
To describe and compare a variety of animals
To notice animals, and humans, have babies which grow into adults</td><td>Plants- types, naming and labelling
To name a variety of common wild and garden plants.
To know the difference between deciduous and evergreen trees
To name the petals, stem, leaf and root of a flowering plant or tree
To name the roots, trunk, branches and leaves of a tree.</td><td colspan="2">Naming and comparing materials
To distinguish between an object and the material it is made from.
To explain the materials that an object is made from.
To name wood, plastic, glass, metal, water and rock.
To describe the properties of everyday materials.
To compare and group objects based on the materials they are made from.</td></tr>
<tr><td colspan="5">Working Scientifically
To ask simple questions
To observe what happens using simple equipment
To perform simple tests
To identify and classify results
To use results to answer questions</td></tr>
<tr><td rowspan="2">Yr2</td><td>Living things and their habitats
To identify things that are living, dead and never lived.
To describe how a specific habitat -provides for the basic needs of things living there (plants and animals).
To identify and name plants and animals in a range of habitats.
To match living things to their habitat.</td><td>Food chains
To describe how animals find their food.
To name some different sources of food for animals.
To explain a simple food chain.</td><td>Growing and changing animals
To explain the basic stages in a life cycle for animals, including humans.
To describe what animals and humans need to survive.</td><td>Grouping and changing materials
To identify and name a range of materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard.
To identify the use of a range of materials.
To explore how shapes can be changed by squashing, bending, twisting and stretching</td><td>How plants grow
To describe how seeds and bulbs grow into plants.
To describe what plants need in order to grow and stay healthy (water, light & suitable temperature)
To describe the impact of changing these.</td><td>Healthy Lifestyles
To describe why exercise, a balanced diet and good hygiene are important for humans.</td></tr>
<tr><td colspan="5">Working scientifically
To ask simple scientific questions.
To observe change over time
To say what I think and what I am doing and explain what I have found out in a variety of ways.
To group, identify and classify.
To explain the similarities and difference I find.
To answer questions using data
To gather and record data from secondary sources of information
To use simple equipment to make observations.</td></tr>
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	To carry out simple tests.				
Yr3	**Forces and magnets** · compare how things move on different surfaces · notice that some forces need contact between two 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 of whether they are attracted to a magnet, and identify some magnetic materials · describe magnets as having two poles · predict whether two magnets will attract or repel each other, depending on which poles are facing.	**Light & Dark** 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 source is blocked by an opaque object find patterns in the way that the size of shadows change	**Rocks and Soils** 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.	**Plants** 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 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.	**Animals including Humans** 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 support, protection and movement.

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Yr4	ELECTRICITY	SOUND	Habitat and Living Things	Teeth and digestion	States and Matter	Heating and cooling
	• 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 • 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.	• 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 strength of the vibrations that produced it	• 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. • 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.	• 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.	• 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 condensation in the water cycle and associate the rate of evaporation with temperature.	• 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 strength of the vibrations that produced it • recognise that sounds get fainter as the distance from the sound source increases.

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		• recognise that sounds get fainter as the distance from the sound source increases.				
Yr5	Forces Look at a range of different forces: gravity, air resistance, water resistance & friction. Develop an understanding of balanced & unbalanced forces & their effects. Investigate how mechanisms, like levers, pulleys & gears, help us to use smaller forces. *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 between moving surfaces *Recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect. Year 5 and 6 objectives for working scientifically: *planning different types of scientific	Earth and Space: *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 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. Year 5 and 6 objectives for working scientifically: *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	Properties and changes of materials - 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 to recover a substance from a solution - Demonstrate that dissolving, mixing and changes of state are reversible changes. - Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating - 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. - Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic - Year 5 and 6 objectives for working scientifically: - 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	Life Cycles Living things and their environment: - describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird - describe the life process of reproduction in some plants and animals - They should find out about the work of naturalists and animal behaviourists, for example, David Attenborough and Jane Goodall. - Pupils should find out about different types of reproduction, including sexual and asexual reproduction in plants, and sexual reproduction in animals. Animals including their habitats: - describe the changes as humans develop to old age - Pupils should draw a timeline to indicate stages in the growth and development of humans. - Pupils could work scientifically by researching the gestation periods of other animals and comparing them with humans; by finding out and recording the length and mass of a baby as it grows. Non-statutory # Be an eco warrior Year 5 and 6 objectives for working scientifically:	

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	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 degree of trust in results, in oral and written *identifying scientific evidence that has been used to support or refute ideas or arguments	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 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	- reporting and presenting 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 - identifying scientific evidence that has been used to support or refute ideas or arguments	- 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 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	
Yr6	**Living things and their habitats** Describe how living things are classified into broad groups according to common	**Animals including humans** Identify and name the main body parts of the circulatory system and describe the	**Evolution and Inheritance** Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago	**Light** Recognise that light appears to travel in straight lines	**Electricity** Associate the brightness of a lamp or the volume of a buzzer with the

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	observational characterists based on similarities and differences, inc micro organisms, plants and animals Give reasons for classifying plants and animals based on specific characterists into commonly found invertebrates Build on year 4 learning on living things	functions of the heart, blood vessels and blood Recognise the impact of diet, exercise and drugs and lifestyle on the way their body functions Describe the way in which nutrients and water are transported within animals, inc humans Build on Year 3 learning on main body parts and year 4 learning on internal organs (Skeletal system and digestive system)	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. Build on Year 3 learning on rocks to support fossils Build on Year 5 learning about living things and their environment	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. Build on Year 3 light topic	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. Build on year 4 learning on creating simple circuits