

Progression Map 2020/2021		Subject: Science		Subject Lead: Mrs K Straughan			
	Year Group	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Knowledge (Breadth)	1	Plants	Seasonal changes	Plants	Animals, including humans	Everyday materials	Forces
Aims		<ul style="list-style-type: none"> To think independently and raise questions about working scientifically and the knowledge and skills that it brings. To have confidence and competence in the full range of practical skills required for planning and carrying out scientific investigations. To build on scientific knowledge and understanding, using written and verbal explanations, solving problems and reporting scientific findings. To have the ability to undertake practical work in a variety of contexts. To develop a passion for science and its application in past, present and future technologies. 					
Skills		Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees.	<p>Observe changes across the four seasons.</p> <p>Observe and describe weather associated with the seasons and how day length varies.</p>	Identify and describe the basic structure of a variety of common flowering plants, including trees.	<p>Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals</p> <p>Identify and name a variety of common animals that are carnivores, herbivores and omnivores.</p> <p>Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets.)</p> <p>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>Distinguish between an object and the material from which it is made.</p> <p>Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water and rock.</p> <p>Describe the simple physical properties of a variety of everyday materials.</p> <p>Compare and group together a variety of everyday materials on the basis of their simple physical properties.</p>	<p>To begin to understand that forces help us to move.</p> <p>To understand that all objects fall to earth and that gravity causes this.</p> <p>To begin to understand what friction is and what effect friction has on moving objects.</p>

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	Year Group	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Knowledge (Breadth)	2	Plants	Use of everyday materials	Plants	Animals, including humans	Living things and their habitats	Electricity
Aims		<ul style="list-style-type: none"> To think independently and raise questions about working scientifically and the knowledge and skills that it brings. To have confidence and competence in the full range of practical skills required for planning and carrying out scientific investigations. To build on scientific knowledge and understanding, using written and verbal explanations, solving problems and reporting scientific findings. To have the ability to undertake practical work in a variety of contexts. To develop a passion for science and its application in past, present and future technologies. 					
Skills		<p>Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.</p>	<p>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>Find out how the shapes of solid objects made from materials can be changed by squashing, bending, twisting and stretching.</p>	<p>Observe and describe how seeds and bulbs grow into mature plants.</p>	<p>Notice that animals, including humans, have offspring which grow into adults.</p> <p>Find out about and describe the basic needs of animals, including humans, for (water, food and air)</p> <p>Describe the importance for humans of exercise, eating the right amounts of different types of food and hygiene.</p>	<p>Explore and compare the differences between things that are living, dead and things that have never been alive.</p> <p>Identify that most living things live in habitats to which they are suited and describe how different habitats provide basic needs of animals, plants and how they depend on each other.</p> <p>Identify and name a variety of plants and animals in their habitats, including micro-habitats.</p> <p>Describe how animals obtain food from plants and other animals; using the ideas of a simple food chains and food sources.</p>	<p>Identify objects which use batteries and notice what happens as the batteries wear out.</p> <p>Recognise that many appliances use electricity around the home and identify where electricity comes from.</p> <p>Compare and group together objects and appliances according to whether they are battery operated or use electricity.</p> <p>Recognise that electricity can be dangerous and discuss electrical safety in the home.</p>

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	Year Group	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Knowledge (Breadth)	3	Rocks	Space	Plants	Forces and magnets	Light	Animals inc humans
Aims	<ul style="list-style-type: none"> To think independently and raise questions about working scientifically and the knowledge and skills that it brings. To have confidence and competence in the full range of practical skills required for planning and carrying out scientific investigations. To build on scientific knowledge and understanding, using written and verbal explanations, solving problems and reporting scientific findings. To have the ability to undertake practical work in a variety of contexts. To develop a passion for science and its application in past, present and future technologies. 						
Skills		<p>Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties.</p> <p>Describe in simple terms how fossils are formed when things that have lived are trapped within rock.</p> <p>Recognise that soils are made from rocks and organic matter.</p>	<p>Recognise the stars - apart from the Sun - are far outside the Solar System. They look as if they are in groups, which we call constellations.</p> <p>Recognise the Sun is a star at the centre of the Solar System.</p> <p>Recognise the Earth is one of the nine planets in our Solar System, all of which orbit the Sun.</p>	<p>Identify and describe the function of different parts of flowering plants: roots, stem/trunk, leaves and flowers.</p> <p>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>Investigate the way in which water is transported within plants.</p> <p>Explore the part that flowers play in the life cycle.</p>	<p>Compare how things move on different surfaces.</p> <p>Notice that some forces need contact between two objects, but magnetic forces can act at a distance.</p> <p>Observe how magnets attract or repel each other and attract some materials and not others.</p> <p>Compare & group together a variety of materials on the basis of whether they are attracted to a magnet & identify some magnetic materials</p> <p>Describe magnets as having two poles.</p> <p>Predict whether two magnets will attract or repel, on which pole face.</p>	<p>Recognise that they need light in order to see things and that dark is the absence of light.</p> <p>Notice that light is reflected from surfaces.</p> <p>Recognise that light from the sun can be dangerous and that there are ways to protect their eyes.</p> <p>Recognise that shadows are formed when the light from a source is blocked by a solid object.</p> <p>Find patterns in the way that the size of shadows change.</p>	<p>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>Identify that humans and some other animals have skeletons and muscles for support, protection and movement.</p>

	Year Group	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Knowledge (Breadth)	4	Sound	Animals including humans	States of matter	Electricity	Living things and their habitats	Plants
Aims		<ul style="list-style-type: none"> To think independently and raise questions about working scientifically and the knowledge and skills that it brings. To have confidence and competence in the full range of practical skills required for planning and carrying out scientific investigations. To build on scientific knowledge and understanding, using written and verbal explanations, solving problems and reporting scientific findings. To have the ability to undertake practical work in a variety of contexts. To develop a passion for science and its application in past, present and future technologies. 					
Skills		<p>Identify how sounds are made, associating some of them with something vibrating.</p> <p>Recognise that vibrations from sounds travel through a medium to the ear.</p> <p>Find patterns between the pitch of a sound and features of the object that produced it.</p> <p>Find patterns between the volume of a sound and the strength of the vibrations that produce it.</p> <p>Recognise that sounds get fainter as the distance from the sound source increases.</p>	<p>Describe the simple functions of the basic parts of the digestive system in humans.</p> <p>Identify the different types of teeth in humans and their simple functions.</p> <p>Construct and interpret a variety of food chains, identifying producers, predators and prey.</p>	<p>Compare and group materials together, according to whether they are solids, liquids or gases.</p> <p>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.</p> <p>Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.</p>	<p>Identify common appliances that run on electricity.</p> <p>Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers.</p> <p>Identify whether or not a lamp will light a simple series circuit, whether or not the lamp is part of a complete loop & battery.</p> <p>Recognise that a switch opens and closes a circuit, associate this whether or not a lamp lights in a simple series circuit.</p> <p>Recognise some common conductors and insulators and associate metal with being good conductors.</p>	<p>Recognise that living things can be grouped in a variety of ways.</p> <p>Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment.</p> <p>Recognise that environments can change and that this can sometimes pose dangers to living things.</p>	<p>Recognise the importance of spreading seeds around and the different mechanisms of seed dispersal.</p> <p>Explore features which fruits and seeds in each dispersal group might exhibit.</p> <p>Construct and interpret a simple key identifying fruits, seeds and dispersal.</p>

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Knowledge (Breadth)	5	Living things and their habitats	Earth and space	Forces	Animals, including humans	Properties and changes of materials	Properties and changes of materials
Aims		<ul style="list-style-type: none"> To think independently and raise questions about working scientifically and the knowledge and skills that it brings. To have confidence and competence in the full range of practical skills required for planning and carrying out scientific investigations. To build on scientific knowledge and understanding, using written and verbal explanations, solving problems and reporting scientific findings. To have the ability to undertake practical work in a variety of contexts. To develop a passion for science and its application in past, present and future technologies. 					
Skills		<p>Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird.</p> <p>Describe the life process of reproduction in some plants and animals.</p>	<p>Describe the movement of the Earth and other planets, relative to the Sun in the Solar System.</p> <p>Describe the movement of the Moon relative to the Earth.</p> <p>Describe the Sun, Earth and Moon as approximately spherical bodies.</p> <p>Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.</p>	<p>Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.</p> <p>Identify the effects of air resistance, water resistance and friction that act between moving surfaces.</p> <p>Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.</p>	Describe the changes as humans develop to old age.	<p>Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal) and respond to magnets.</p> <p>Know that some materials will dissolve in liquid to form a solution and describe how to recover a substance from a solution.</p> <p>Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating.</p>	<p>Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic.</p> <p>Demonstrate that dissolving, mixing and changes of state are reversible changes.</p> <p>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>

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Knowledge (Breadth)	6	Evolution and inheritance	Electricity	Light	Living things and their habitats	Animals including humans	Properties and changes of materials
Aims		<ul style="list-style-type: none"> To think independently and raise questions about working scientifically and the knowledge and skills that it brings. To have confidence and competence in the full range of practical skills required for planning and carrying out scientific investigations. To build on scientific knowledge and understanding, using written and verbal explanations, solving problems and reporting scientific findings. To have the ability to undertake practical work in a variety of contexts. To develop a passion for science and its application in past, present and future technologies. 					
Skills		<p>Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago.</p> <p>Recognise that living things produce offspring of the same kind but normally offspring vary and are not identical to their parents.</p> <p>Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.</p>	<p>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>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>Use recognised symbols when representing a simple circuit in a diagram.</p>	<p>Recognise that light appears to travel in straight lines.</p> <p>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>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>Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.</p>	<p>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>Give reasons for classifying plants and animals based on specific characteristics.</p>	<p>Identify and name the main parts of the human circulatory system and describe the functions of the heart, blood vessels and blood.</p> <p>Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function.</p> <p>Describe the ways in which nutrients and water are transported within animals, including humans.</p>	<p>Explore changes that are difficult to reverse, for example rusting and other reactions.</p> <p>Research and discuss how chemical changes have an impact on our lives, for example, cooking and discuss the creative use of new materials such as polymers, super-sticky and super-thin materials.</p>