

Science Skills Map 2020 - 2021

	EYFS Early Years Outcomes	<u>Early Learning Goals</u>
EYFS and R	Physical Development	<p>They handle equipment and tools effectively, including pencils for writing.</p> <p>Children know the importance for good health of physical exercise, and a healthy diet, and talk about ways to keep healthy and safe.</p>
	Communication and Language	<p>Children listen attentively in a range of situations.</p> <p>They give their attention to what others say and respond appropriately, while engaged in another activity.</p> <p>Children follow instructions involving several ideas or actions.</p> <p>They answer 'how' and 'why' questions about their experiences and in response to stories or events.</p> <p>They develop their own narratives and explanations by connecting ideas or events.</p> <p>They use past, present and future forms accurately when talking about events that have happened or are to happen in the future.</p>
	Understanding the World	<p>They know about similarities and differences between themselves and others</p> <p>Children know about similarities and differences in relation to places, objects, materials and living things.</p> <p>They talk about the features of their own immediate environment and how environments might vary from one another.</p> <p>They make observations of animals and plants and explain why some things occur, and talk about changes.</p> <p>They select and use technology for particular purposes.</p> <p>Children recognise that a range of technology is used in places such as homes and schools.</p>
	Expressive Arts and Design	<p>They safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.</p> <p>Children use what they have learnt about media and materials in original ways, thinking about uses and purposes.</p> <p>They represent their own ideas, thoughts and feelings through design and technology</p>
	Personal, Social and Emotional Development	<p>They are confident to speak in a familiar group, will talk about their ideas, and will choose the resources they need for their chosen activities.</p> <p>They say when they do or don't need help.</p> <p>They work as part of a group or class, and understand and follow the rules.</p> <p>They take account of one another's ideas about how to organise their activity.</p>

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	<u>Ourselves</u>	<u>Seasons</u>	<u>Plants</u>	<u>Animals</u>	<u>Materials</u>
Year 1	<ul style="list-style-type: none"> Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense 	<ul style="list-style-type: none"> Observe and describe weather associated with the seasons and how day length varies. Observe changes across the four seasons 	<ul style="list-style-type: none"> Identify and name a variety of common and wild garden plants including deciduous and evergreen trees. Identify and describe the basic structure of a variety of common flowering plants including trees 	<ul style="list-style-type: none"> Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. Identify and name a variety of animals that are carnivores, herbivores and omnivores. Describe and compare the structure describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets) 	<ul style="list-style-type: none"> Distinguish between and object and a 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.

	<u>Animals including humans</u>	<u>Uses of materials</u>	<u>Plants</u>	<u>Living things and their habitats</u>	<u>Environmental changes</u>
Year 2	<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, air). Describe the importance for humans of exercise, 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> Look closely at the natural and humanly-constructed world around them Use simple scientific language to talk about what they have found out Communicate their ideas to a range of audiences in a variety of ways.

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<p>eating the right amounts of different types of food, and hygiene.</p>	<p>can be changed by squashing, bending, twisting and stretching.</p>		<p>animal and plants and how they depend on each other.</p> <ul style="list-style-type: none"> 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 name different sources of food. 	
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<p><u>Animals including humans</u></p> <ul style="list-style-type: none"> Identify animal 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. 	<p><u>Forces and Magnets</u></p> <ul style="list-style-type: none"> 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 on whether 	<p><u>Rocks</u></p> <ul style="list-style-type: none"> 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 	<p><u>Light</u></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. 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><u>Plants</u></p> <ul style="list-style-type: none"> 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
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Year
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		<p>they are attracted to a magnet, and identify some magnetic materials.</p> <ul style="list-style-type: none"> Describe magnets as having two poles. Predict whether two magnets will attract or repel each other depending on which poles are facing. 			formation and seed dispersal.
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	<u>Sound</u>	<u>Electricity</u>	<u>Animals including humans</u>	<u>Living things and their habitats</u>	<u>States of matter</u>
Year 4	<ul style="list-style-type: none"> Identify how sounds are made, associating some of them with something vibrating Recognise that vibrations from sounds travel through a medium to their ear. Find patterns between the pitch of a sound and features of the object which produced it. Find patterns between a volume of a sound and the strength of the vibrations that produced it. Recognise that sounds get fainter as the distance 	<ul style="list-style-type: none"> Identify common appliances that run on electricity. Construct a simple series electrical circuit, identify and name 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 	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> 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 from their local and wider environment. Recognise that environments can change and this can sometimes pose dangers to living things. 	<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 measure or research the temperature at which this happens in degrees Celsius Identify the part played by evaporation and condensation in the water cycle and associate

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	<p>from the sound source increases.</p> <ul style="list-style-type: none"> • 	<p>circuit and associate this with whether or not a lamplight in a simple series circuit.</p> <ul style="list-style-type: none"> • Recognise some common conductors and insulators, and associate metals with being good conductors. 			<p>the rate of evaporation with temperature</p>
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Year 5	<p><u>Materials</u></p>	<p><u>Earth and Space</u></p>	<p><u>Forces</u></p>	<p><u>Animals including humans</u></p>	<p><u>Living Things and Their Habitats - Circle of Life</u></p>
	<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), response to magnets. • To know the some materials will dissolve in liquid to forma solution, and describe how to recover a substance from a solution. • Use knowledge of solids, liquids and gases to describe how mixtures might be separated, including through 	<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 approximate 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. 	<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 falling object. • Identify the effects of air resistance, water resistance and friction that act between moving surfaces. 	<ul style="list-style-type: none"> • Describe the changes as humans develop into old age 	<ul style="list-style-type: none"> • Describe the differences in the life cycles in a mammal, an amphibian, an insect and a bird. • Describe the life process of reproduction in some plants and animals.

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	<p>filtering, sieving and evaporating.</p> <ul style="list-style-type: none"> • 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 bar carbonate of soda 				
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	<p><u>Habitats</u></p>	<p><u>Light</u></p>	<p><u>Animals including humans</u></p>	<p><u>Evolution and inheritance</u></p>	<p><u>Electricity</u></p>
<p>Year 6</p>	<ul style="list-style-type: none"> • Describe how living things are classified in to broad groups according to common observable characteristics and based on similarities and differences, including 	<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. 	<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. 	<ul style="list-style-type: none"> • Recognise that living things have changed over time and that fossils provide information about living things that 	<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.

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	<p>micro-organisms, plants and animals.</p> <ul style="list-style-type: none">• Give reasons for classifying plants and animals based on specific characteristics.	<ul style="list-style-type: none">• 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.	<ul style="list-style-type: none">• Recognise the impact of diet, exercise, drugs and lifestyle on their way their bodies function.• Describe the ways in which nutrients and water are transported within animals, including humans.	<p>inhabited the Earth millions of years ago.</p> <ul style="list-style-type: none">• Recognise that living things produce off-spring of the same kind, but normally off-spring 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.• (Fossils, evolution of animals, adaptation)	<ul style="list-style-type: none">• Compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and on/off position of switches.• Use and recognise the symbols when representing a simple circuit in diagram
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