

Science Curriculum Map 2016-17

Foundation Stage



	Autumn	Spring	Summer
Nursery and Reception	<p>Ourselves Light and Dark 22-36 months Learns that they have similarities and differences that connect them to, and distinguish them from, others. Enjoys playing with small-world models such as a farm, a garage, or a train track. Notices detailed features of objects in their environment.</p> <p>30-50 months Knows some of the things that make them unique, and can talk about some of the similarities and differences in relation to friends or family. Comments and asks questions about aspects of their familiar world such as the place where they live or the natural world. Can talk about some of the things they have observed such as plants, animals, natural and found objects. Talks about why things happen and how things work. Developing an understanding of growth, decay and changes over time.</p>	<p>Fairy Tales The Rainbow 22-36 months Learns that they have similarities and differences that connect them to, and distinguish them from, others. Enjoys playing with small-world models such as a farm, a garage, or a train track. Notices detailed features of objects in their environment.</p> <p>30-50 months Knows some of the things that make them unique, and can talk about some of the similarities and differences in relation to friends or family. Comments and asks questions about aspects of their familiar world such as the place where they live or the natural world. Can talk about some of the things they have observed such as plants, animals, natural and found objects. Talks about why things happen and how things work. Developing an understanding of growth, decay and changes over time.</p>	<p>Growing and Food Journeys 22-36 months Learns that they have similarities and differences that connect them to, and distinguish them from, others. Enjoys playing with small-world models such as a farm, a garage, or a train track. Notices detailed features of objects in their environment.</p> <p>30-50 months Knows some of the things that make them unique, and can talk about some of the similarities and differences in relation to friends or family. Comments and asks questions about aspects of their familiar world such as the place where they live or the natural world. Can talk about some of the things they have observed such as plants, animals, natural and found objects. Talks about why things happen and how things work. Developing an understanding of growth, decay and changes over time.</p>

<p>Shows care and concern for living things and the environment.</p> <p>40-60 months The world Looks closely at similarities, differences, patterns and change. Eats a healthy range of foodstuffs and understands need for variety in food. Shows some understanding that good practices with regard to exercise, eating, sleeping and hygiene can contribute to good health.</p>	<p>Shows care and concern for living things and the environment.</p> <p>40-60 months The world Looks closely at similarities, differences, patterns and change. Eats a healthy range of foodstuffs and understands need for variety in food. Shows some understanding that good practices with regard to exercise, eating, sleeping and hygiene can contribute to good health.</p>	<p>Shows care and concern for living things and the environment.</p> <p>40-60 months The world Looks closely at similarities, differences, patterns and change. Eats a healthy range of foodstuffs and understands need for variety in food. Shows some understanding that good practices with regard to exercise, eating, sleeping and hygiene can contribute to good health.</p>
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Key Stage 1

	Autumn	Spring	Summer
Year 1	<p><u>Ourselves and other animals</u> <u>Aims:</u> Discuss differences and similarities between humans and animals. Identify, name, draw and label the basic parts of the human body and say which part of the human body is associated with each sense. <u>Seasonal changes: autumn and winter.</u> <u>Aims:</u> Observe changes across the 4 seasons. Observe and describe weather associated with the seasons and how day length varies.</p> <p>Pupils will be taught by:</p>	<p><u>Everyday materials:</u> <u>Aims:</u> Distinguish between an object and the material from which it is made.</p> <ul style="list-style-type: none"> Identify and name a variety of everyday materials such as glass, wood, metal, plastic, water and rock. Describe the physical properties of everyday materials. Compare and group together a variety of everyday materials based on their physical properties. <p><u>Seasonal changes: spring</u> Pupils will continue to develop their knowledge of the four seasons through observations,</p>	<p><u>Seasonal changes: summer</u> Pupils will continue to observe changes across the 4 seasons. observe and describe weather associated with the seasons and how day length varies. <u>Aims:</u> To observe and talk about changes in the weather and the seasons. To work scientifically by: making tables and charts about the weather.</p> <p><u>Animals</u> Aims:</p>

	<p>asking simple questions and recognising that they can be answered in different ways. Observing closely, using simple equipment performing simple tests. Identifying and classifying and using their observations and ideas to suggest answers to questions. Gathering and recording data to help in answering questions.</p> <p><u>Outdoor learning</u> <u>Habitats of mini beasts</u> Learning about what animals need to survive, and how they are suited to their habitat.</p>	<p>recording and comparing temperature and day length.</p> <p><u>Outdoor learning</u> <u>Habitats of birds.</u> Learning about what animals need to survive, and how they are suited to their habitat. Making observations about the feeding habits of different species of birds.</p>	<p>To identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. To identify and name a variety of common animals that are carnivores, herbivores and omnivores.</p> <p><u>Outdoor learning</u> <u>Habitats of birds.</u> Learning about what animals need to survive, and how they are suited to their habitat. Making observations about the feeding habits of different species of birds.</p>
<p>Year 2</p>		<p>Animals including humans describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene</p> <p>Uses of everyday materials Identify and compare the suitability of a variety of everyday materials for particular uses. Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.</p> <p>Living things and their habitats explore and compare the differences between things that are living, dead, and things that have never been alive</p>	<p>Plants 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</p> <p>Animals including humans 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 survival (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>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>identify and name a variety of plants and animals in their habitats, including microhabitats</p> <p>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>	
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Key Stage 2

	Autumn	Spring	Summer
Year 3	<p>Rocks Pupils should be taught to:</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>2nd half</u></p> <p>Animals, including humans Pupils should be taught to:</p> <ul style="list-style-type: none"> - 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 animals have skeletons and muscles for support, protection and movement. 	<p>Materials Pupils should be taught to:</p> <ul style="list-style-type: none"> ☐☐identify and compare the uses of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard ☐☐compare how things move on different surfaces. <p><u>2nd half</u></p> <p>Plants Pupils should be taught to:</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 formation and seed dispersal. 	<p>Light Pupils should be taught to:</p> <ul style="list-style-type: none"> ☐☐notice that light is reflected from surfaces ☐☐find patterns that determine the size of shadows. <p>Pupils should explore what happens when light reflects off a mirror or other reflective surfaces, including playing mirror games to help them to answer questions about how light behaves.</p> <p>Note: Pupils should be warned that it is not safe to look directly at the Sun, even when wearing dark glasses.</p> <p><u>2nd half</u></p> <p>Magnets Pupils should be taught to:</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 of whether

			<p>they are attracted to a magnet, and identify some magnetic materials</p> <p>☒ describe magnets as having two poles</p> <p>☒ predict whether two magnets will attract or repel each other, depending on which poles are facing</p>
Year 4	<p>Invertebrates and classification. Investigating the differences between different groups of animals.</p> <p>The human body. Looking at the key features of the human body in terms of organs and health.</p>	<p>Electricity. Learning the important symbols in an electrical circuit. The explore the differences between conductors and insulators.</p> <p>Living things. What makes a living thing? Comparing different living things and understanding the role of the skeleton and digestive system in humans.</p>	<p>Sound. Investigating how sounds are created and detected and how to change the pitch and volume of a sound.</p> <p>States of matter. To investigate the states of solid, liquid and gas and how materials can move from one to the other.</p>
Year 5	<p><u>Living Things and Their Habitats</u></p> <p><u>Life Cycles</u></p> <p>To describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird.</p> <p>To describe the life process of reproduction in some plants and animals.</p>	<p><u>Earth & Space</u></p> <p><u>Light</u></p> <p>To describe the movement of the Earth, and other planets, relative to the Sun in the solar system.</p> <p>To describe the movement of the Moon relative to the Earth.</p> <p>To describe the Sun, Earth and Moon as approximately spherical bodies.</p> <p>To 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>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><u>Animals Including Humans</u></p> <p><u>Materials</u></p> <p>To describe the changes as humans develop to old age.</p> <p>To 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.</p> <p>To know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution.</p> <p>To use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating.</p>

		<p>To identify the effects of air resistance, water resistance and friction, that act between moving surfaces.</p> <p>To recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.</p>	<p>To give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic.</p> <p>To demonstrate that dissolving, mixing and changes of state are reversible changes.</p> <p>To 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>
Year 6	<p>The Circulatory System To identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood. To recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function. To describe the ways in which nutrients and water are transported within animals, including humans.</p> <p>Electricity 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 To use recognised symbols when representing a simple circuit in a diagram.</p>	<p>Forces To explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object. To identify the effects of air resistance, water resistance and friction, that act between moving surfaces</p> <p>Micro-organisms To describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences. To report and present findings from enquiries. To describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences. To plan, take measurements, record data, make predictions and find conclusions.</p>	<p>Evolution and Inheritance To identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution. To construct and interpret a variety of food chains, identifying producers, predators and prey. To recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents. 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</p> <p>Classification of animals To describe how living things are classified into broad groups according to common observable characteristics and based on</p>

	To associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit		similarities and differences, including micro-organisms, plants and animals To give reasons for classifying plants and animals based on specific characteristics. Sex Education
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