



Science Key Concepts Progression Map



Key Concept	EYFS	KS1		KS2			
	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Chemistry	<p>Materials - Whatever Next</p> <ul style="list-style-type: none"> -Children will understand objects are made from different materials. -Children will identify objects and sort according to their materials: wood, plastic, metal, glass. <p>Winter</p> <ul style="list-style-type: none"> -Children will understand that water freezes when it gets cold and ice melts when it gets warm 	<p>Everyday materials</p> <ul style="list-style-type: none"> - Children will distinguish between an object and the material from which it is made - Children will identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock - Children will describe the simple physical properties of a variety of everyday materials -Children will compare and group together a variety of everyday materials on the basis of their simple physical properties. 	<p>Uses of everyday materials</p> <ul style="list-style-type: none"> - Children will identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses - Children will find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. 	<p>Rocks</p> <ul style="list-style-type: none"> - Children will compare and group together different kinds of rocks on the basis of their appearance and simple physical properties -Children will describe in simple terms how fossils are formed when things that have lived are trapped within rock - Children will recognise that soils are made from rocks and organic matter. 	<p>States of matter</p> <ul style="list-style-type: none"> - Children will compare and group materials together, according to whether they are solids, liquids or gases - Children will 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) -Children will identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature. 	<p>Properties and changes of materials</p> <ul style="list-style-type: none"> - Children will 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 - Children will know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution - Children will use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating - Children will give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic - Children will demonstrate that dissolving, mixing and changes of state are reversible changes - Children will 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. 	

Physics	<p>Autumn</p> <ul style="list-style-type: none"> -Children will observe the 4 different seasons and the changes in the environment <p>Magnets</p> <ul style="list-style-type: none"> -Children will recognise that some materials are magnetic and will attract to the magnet. <p>Floating and sinking</p> <ul style="list-style-type: none"> -Children will recognise that some materials will float in water and some materials will sink. 	<p>Seasonal changes</p> <ul style="list-style-type: none"> - Children will observe changes across the four seasons - Children will observe and describe weather associated with the seasons and how day length varies. 		<p>Light</p> <ul style="list-style-type: none"> - Children will recognise that they need light in order to see things and that dark is the absence of light - Children will notice that light is reflected from surfaces - Children will recognise that light from the sun can be dangerous and that there are ways to protect their eyes - Children will recognise that shadows are formed when the light from a light source is blocked by an opaque object - Children will find patterns in the way that the size of shadows change. 	<p>Sound</p> <ul style="list-style-type: none"> - Children will identify how sounds are made, associating some of them with something vibrating - Children will recognise that vibrations from sounds travel through a medium to the ear - Children will find patterns between the pitch of a sound and features of the object that produced it - Children will find patterns between the volume of a sound and the strength of the vibrations that produced it - Children will recognise that sounds get fainter as the distance from the sound source increases. 	<p>Earth and Space</p> <ul style="list-style-type: none"> - Children will describe the movement of the Earth, and other planets, relative to the Sun in the solar system - Children will describe the movement of the Moon relative to the Earth - Children will describe the Sun, Earth and Moon as approximately spherical bodies - Children will use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky. 	<p>Light</p> <ul style="list-style-type: none"> - Children will recognise that light appears to travel in straight lines - Children will 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 - Children will 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 - Children will use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them. <p>Forces</p> <ul style="list-style-type: none"> - Children will explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object - Children will construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers - Children will identify the effects of air resistance, water resistance and friction, that act between moving surfaces - Children will recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect. <p>Electricity</p> <ul style="list-style-type: none"> - Children will identify common appliances that run on electricity - Children will construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers - Children will 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 - Children will recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit - Children will recognise some common conductors and insulators, and associate metals with being good conductors.

<p>Biology</p>	<p>All about me</p> <ul style="list-style-type: none"> -Children will identify body parts -Children will identify the 5 senses and the corresponding body parts whilst observing changes. <p>Animals</p> <ul style="list-style-type: none"> -Children will identify and name a range of farm animals and their young -Children will understand the term life cycle - observing changes and growth over time and the process of life. <p>Plants</p> <ul style="list-style-type: none"> -Children will identify and naming different fruits and vegetables and what they need to grow. 	<p>Plants</p> <ul style="list-style-type: none"> -Children will identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. -Children will identify and describe the basic structure of a variety of common flowering plants, including trees. <p>Animals including humans</p> <ul style="list-style-type: none"> -Children will identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. -Children will identify and name a variety of common animals that are carnivores, herbivores and omnivores - describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets) - 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>Plants</p> <ul style="list-style-type: none"> -Children will observe and describe how seeds and bulbs grow into mature plants. -Children will find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. <p>Animals including humans</p> <ul style="list-style-type: none"> -Children will notice that animals, including humans, have offspring which grow into adults. -Children will find out about and describe the basic needs of animals, including humans, for survival (water, food and air). -Children will describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. <p>Living things and their habitats</p> <ul style="list-style-type: none"> -Children will explore and compare the differences between things that are living, dead, and things that have never been alive -Children will 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 -Children will identify and name a variety of plants and animals in their habitats, including micro-habitats -Children will 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>Plants</p> <ul style="list-style-type: none"> -Children will identify and describe the functions of the basic parts of flowering plants: roots, stem/trunk, leaves and flowers -Children will 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 -Children will investigate the way in which water is transported within plants -Children will explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. <p>Animals including humans</p> <ul style="list-style-type: none"> -Children will recognise that environments can change and that this can sometimes pose dangers to living things. 	<p>Animals including humans</p> <ul style="list-style-type: none"> -Children will describe the simple functions of the basic parts of the digestive system in humans -Children will identify the different types of teeth in humans and their simple functions -Children will construct and interpret a variety of food chains, identifying producers, predators and prey. <p>Living things and their habitats</p> <ul style="list-style-type: none"> -Children will describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird -Children will describe the life process of reproduction in some plants and animals. 	<p>Animals including humans</p> <ul style="list-style-type: none"> -Children will identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood -Children will recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function -Children will describe the ways in which nutrients and water are transported within animals, including humans. <p>Living things and their habitats</p> <ul style="list-style-type: none"> -Children will 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. -Children will give reasons for classifying plants and animals based on specific characteristics. <p>Evolution and Inheritance</p> <ul style="list-style-type: none"> -Children will recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago. -Children will recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents -Children will identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.
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Working Scientifically	<ul style="list-style-type: none"> - Children will ask simple questions and recognise that they can be answered in different ways. - Children will observe closely, using simple equipment - Children will perform simple tests. - Children will identify and classify, using their observations and ideas to suggest answers to questions - Children will gather and record data to help in answering questions. 	<ul style="list-style-type: none"> - Children will ask simple questions and recognise that they can be answered in different ways. - Children will observe closely, using simple equipment. - Children will perform simple tests. - Children will identify and classify, using their observations and ideas to suggest answers to questions by gathering and recording data to help in answering questions. 	<ul style="list-style-type: none"> - Children will ask simple questions and recognise that they can be answered in different ways. - Children will observe closely, using simple equipment. - Children will perform simple tests. - Children will identify and classify, using their observations and ideas to suggest answers to questions by gathering and recording data to help in answering questions. - Children will ask relevant questions and using different types of scientific enquiries to answer them - Children will set up simple practical enquiries, comparative and fair tests. - Children will make systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. - Children will gather, record, classify and present data in a variety of ways to help in answering questions. - Children will record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables. - Children will report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. - Children will use results to draw simple conclusions, make predictions for new values, suggest improvements, and raise further questions. - Children will identify differences, similarities or changes related to simple scientific ideas and processes. - Children will use straightforward scientific evidence to answer questions or to support their findings. 	<ul style="list-style-type: none"> - Children will ask relevant questions and using different types of scientific enquiries to answer them. - Children will set up simple practical enquiries, comparative and fair tests. - Children will make systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. - Children will gather, record, classify and present data in a variety of ways to help in answering questions. - Children will record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables. - Children will report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. - Children will use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions. - Children will identify differences, similarities or changes related to simple scientific ideas and processes. 	<ul style="list-style-type: none"> - Children will plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. - Children will take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. - Children will record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. - Children will use test results to make predictions to set up further comparative and fair tests. - Children will report and present 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. - Children will identify scientific evidence that has been used to support or refute ideas or arguments. 	<ul style="list-style-type: none"> - Children will plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. - Children will take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. - Children will record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. - Children will use test results to make predictions to set up further comparative and fair tests. - Children will report and present 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. - Children will identify scientific evidence that has been used to support or refute ideas or arguments.