



EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<p>Explore the natural world around them, making observations and drawing pictures of animals and plants;</p> <p>Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class</p> <p>Understand the effect of the changing seasons on the natural world around them.</p>	<p>Animals /Humans/ Seasons Fish/reptiles/birds/ mammals - body parts/ carnivore etc Changes across 4 seasons/ weather types and length of day How plants change across the seasons (Harvest)</p> <p>Pupils might work scientifically by: using their observations to compare and contrast animals at first hand or through videos and photographs, describing how they identify and group them; grouping animals according to what they eat; and using their senses to compare different textures, sounds and smells.</p> <p>Pupils might work scientifically by: making tables and charts about the weather; and making displays of what happens in the world around them, including day length, as the seasons change.</p>	<p>Animals incl humans Animals have offspring which grow into adults, basic needs, importance of exercise and stay healthy.</p> <p>Pupils might work scientifically by: observing, through video or first-hand observation and measurement, how different animals, including humans, grow; asking questions about what things animals need for survival and what humans need to stay healthy; and suggesting ways to find answers to their questions.</p>	<p>Rocks Physical appearance/ properties of rocks Fossil formation Soils – rock and organic matter Forces Friction, contact between 2 objects, magnets – attract, repel, magnetic features, poles</p> <p>Pupils might work scientifically by: observing rocks, including those used in buildings and gravestones, and exploring how and why they might have changed over time; using a hand lens or microscope to help them to identify and classify rocks according to whether they have grains or crystals, and whether they have fossils in them. Pupils might research and discuss the different kinds of living things whose fossils are found in sedimentary rock and explore how fossils are formed. Pupils could explore different soils and identify similarities and differences between them and investigate what happens when rocks are rubbed together or what changes occur when they are in water. They can raise and answer questions about the way soils are formed.</p> <p>Pupils might work scientifically by: comparing how different things move and grouping them; raising questions and carrying out tests to find out how far things move on different surfaces, and gathering and recording data to find answers to their questions; exploring the strengths of different magnets and finding a fair way to compare them; sorting materials into those that are magnetic and those that are not; looking for patterns in the way that magnets behave in relation to each other and what might affect this, for example, the strength of the magnet or which pole faces another; identifying how these</p>	<p>States of matter Differences between Solids, liquids, gases Changes of state Water cycle Animals incl humans Digestion Types of teeth Food chains Predators and prey</p> <p>Pupils might work scientifically by: grouping and classifying a variety of different materials; exploring the effect of temperature on substances such as chocolate, butter, cream (for example, to make food such as chocolate crispy cakes and ice-cream for a party). They could research the temperature at which materials change state, for example, when iron melts or when oxygen condenses into a liquid. They might observe and record evaporation over a period of time, for example, a puddle in the playground or washing on a line, and investigate the effect of temperature on washing drying or snowmen melting.</p> <p>Pupils might work scientifically by: comparing the teeth of carnivores and herbivores and suggesting reasons for differences; finding out what damages teeth and how to look after them. They might draw and discuss their ideas about the digestive system and compare them with models or images.</p>	<p>Space, Earth Know movement of Earth and planets, solar system, rotation, day and night Forces Gravity, air resistance, water resistance, friction, pulleys, gears</p> <p>Pupils might work scientifically by: comparing the time of day at different places on the Earth through internet links and direct communication; creating simple models of the solar system; constructing simple shadow clocks and sundials, calibrated to show midday and the start and end of the school day; finding out why some people think that structures such as Stonehenge might have been used as astronomical clocks.</p> <p>Pupils might work scientifically by: exploring falling paper cones or cupcake cases, and designing and making a variety of parachutes and carrying out fair tests to determine which designs are the most effective. They might explore resistance in water by making and testing boats of different shapes. They might design and make products that use levers, pulleys, gears and/or springs and explore their effects.</p>	<p>Light Light appears to travel in straight lines, how it travels to the eye, light sources, shadows in relation to light travelling in straight lines.</p> <p>Pupils might work scientifically by: deciding where to place rear-view mirrors on cars; designing and making a periscope and using the idea that light appears to travel in straight lines to explain how it works. They might investigate the relationship between light sources, objects and shadows by using shadow puppets. They could extend their experience of light by looking a range of phenomena including rainbows, colours on soap bubbles, objects looking bent in water, and coloured filters (they do not need to explain why these phenomena occur).</p>



Long Term Plan for Science

Spring Term

EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<p>Explore the natural world around them, making observations and drawing pictures of animals and plants;</p> <p>Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class</p> <p>Understand the effect of the changing seasons on the natural world around them.</p>	<p>Materials Differences between object and material, variety of materials, simple physical properties/ how used</p> <p>Pupils might work scientifically by: performing simple tests to explore questions, for example: 'What is the best material for an umbrella? ... for lining a dog basket? ... for curtains? ... for a bookshelf? ... for a gymnast's leotard?'</p>	<p>Materials Link to structures – know some materials are more suitable for specific uses Shape can be changed in different ways</p> <p>Pupils might work scientifically by: comparing the uses of everyday materials in and around the school with materials found in other places (at home, the journey to school, on visits, and in stories, rhymes and songs); observing closely, identifying and classifying the uses of different materials, and recording their observations.</p>	<p>Forces compare how things move on different surfaces and notice that some forces need contact between 2 objects, but magnetic forces can act at a distance</p> <p>Light light and dark, reflection on surfaces, safety of eyes, shadows (size and shape)</p> <p>Plants Functions of different parts, needs, water transportation, flowers in life cycle</p> <p>Pupils might work scientifically by: comparing how different things move and grouping them; raising questions and carrying out tests to find out how far things move on different surfaces, and gathering and recording data to find answers to their questions</p> <p>Pupils might work scientifically by: looking for patterns in what happens to shadows when the light source moves or the distance between the light source and the object changes.</p> <p>Pupils might work scientifically by: comparing the effect of different factors on plant growth, for example, the amount of light, the amount of fertiliser; discovering how seeds are formed by observing the different stages of plant life cycles over a period of time; looking for patterns in the structure of fruits that relate to how the seeds are dispersed. They might observe how water is transported in plants, for example, by putting cut, white carnations into coloured water and observing how water travels up the stem to the flowers.</p>	<p>Electricity Appliances, knowledge of circuits, parts, components, switches, conductors, insulators</p> <p>Sound How sound is made, vibrations, pitch, volume, distance</p> <p>Pupils might work scientifically by: observing patterns, for example, that bulbs get brighter if more cells are added, that metals tend to be conductors of electricity, and that some materials can and some cannot be used to connect across a gap in a circuit.</p> <p>Pupils might work scientifically by: finding patterns in the sounds that are made by different objects such as saucepan lids of different sizes or elastic bands of different thicknesses. They might make earmuffs from a variety of different materials to investigate which provides the best insulation against sound. They could make and play their own instruments by using what they have found out about pitch and volume.</p>	<p>Materials Group according to properties Uses of materials Dissolving, separating materials, reversible, irreversible</p> <p>Pupils might work scientifically by: carrying out tests to answer questions, for example, 'Which materials would be the most effective for making a warm jacket, for wrapping ice cream to stop it melting, or for making blackout curtains?' They might compare materials in order to make a switch in a circuit. They could observe and compare the changes that take place, for example, when burning different materials or baking bread or cakes. They might 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>	<p>Living things and habitats To know a range of observable characteristics Classification Evolution / inheritance Adaptation of plants and animals Offspring non- identical Information from fossils</p> <p>Pupils might work scientifically by: using classification systems and keys to identify some animals and plants in the immediate environment. They could research unfamiliar animals and plants from a broad range of other habitats and decide where they belong in the classification system</p> <p>Pupils might work scientifically by: observing and raising questions about local animals and how they are adapted to their environment; comparing how some living things are adapted to survive in extreme conditions, for example, cactuses, penguins and camels. They might analyse the advantages and disadvantages of specific adaptations, such as being on 2 feet rather than 4, having a long or a short beak, having gills or lungs, tendrils on climbing plants, brightly coloured and scented flowers.</p>

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Long Term Plan for Science	Term Summer	<p>Explore the natural world around them, making observations and drawing pictures of animals and plants;</p> <p>Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class</p> <p>Understand the effect of the changing seasons on the natural world around them.</p>	<p>Plants Variety of common garden plants, deciduous, evergreen, structure of flowering plants</p> <p>They should become familiar with common names of flowers, examples of deciduous and evergreen trees, and plant structures (including leaves, flowers (blossom), petals, fruit, roots, bulb, seed, trunk, branches, stem). Pupils might work scientifically by: observing closely, perhaps using magnifying glasses, and comparing and contrasting familiar plants; describing how they were able to identify and group them, and drawing diagrams showing the parts of different plants including trees. Pupils might keep records of how plants have changed over time, for example, the leaves falling off trees and buds opening; and compare and contrast what they have found out about different plants.</p>	<p>Plants/ Living things /habitats Know how seeds and bulbs grow into mature plants, needs of a plant Differences between living, dead, been alive, what is a habitat, dependency, micro habitats, basic food chains</p> <p>Pupils might work scientifically by: observing and recording, with some accuracy, the growth of a variety of plants as they change over time from a seed or bulb, or observing similar plants at different stages of growth; setting up a comparative test to show that plants need light and water to stay healthy.</p> <p>Pupils might work scientifically by: sorting and classifying things according to whether they are living, dead or were never alive, and recording their findings using charts. They should describe how they decided where to place things, exploring questions like: 'Is a flame alive? Is a deciduous tree dead in winter?' and talk about ways of answering their questions. They could construct a simple food chain that includes humans (eg, grass, cow, human). They could describe the conditions in different habitats and microhabitats (under log, on stony path, under bushes); and find out how the conditions affect the number and type(s) of plants and animals that live there.</p>	<p>Animals / humans Right amount of nutrients, can not make their own food, skeletons, support and movement</p> <p>Pupils might work scientifically by: identifying and grouping animals with and without skeletons and observing and comparing their movement; exploring ideas about what would happen if humans did not have skeletons. They might compare and contrast the diets of different animals (including their pets) and decide ways of grouping them according to what they eat. They might research different food groups and how they keep us healthy, and design meals based on what they find out.</p>	<p>Living things/ habitats Key characteristics, grouping of animals, plants, local and wider environment, environmental changes</p> <p>Pupils might work scientifically by: using and making simple guides or keys to explore and identify local plants and animals; making a guide to local living things; raising and answering questions based on their observations of animals and what they have found out about other animals that they have researched.</p>	<p>Living things/ Habitats/ Animals inc humans Mammal, amphib, bird, insect, MRS NERG (animals and plants) Old age, gestation, life cycle</p> <p>Pupils might work scientifically by: observing and comparing the life cycles of plants and animals in their local environment with other plants and animals around the world (in the rainforest, in the oceans, in desert areas and in prehistoric times), asking pertinent questions and suggesting reasons for similarities and differences. They might try to grow new plants from different parts of the parent plant, for example, seeds, stem and root cuttings, tubers, bulbs. They might observe changes in an animal over a period of time (for example, by hatching and rearing chicks), comparing how different animals reproduce and grow.</p> <p>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.</p>	<p>Animals inc humans Circulatory system and heart, impact on body, diet and drugs, nutrients and water transported around the body. Electricity Switches in circuits, symbols, cells and voltage, Pupils might work scientifically by: exploring the work of scientists and scientific research about the relationship between diet, exercise, drugs, lifestyle and health. Pupils might work scientifically by: systematically identifying the effect of changing one component at a time in a circuit; designing and making a set of traffic lights, a burglar alarm or some other useful circuit.</p>
	scope Kaleido-	<p>Conservation—Taking care of our own community and our planet as a whole. '10 ways to help save our world'.</p>	<p>Rights of the Child – NSPCC, Barnadoes, staying safe</p>	<p>Australian Adventures- Aborigines Sidney Harbour Bridge Sidney Opera House</p>	<p>Study of Germany – Liberty (WW2) East/West Berlin Wall)</p>	<p>Study of Origins of Olympics and when it was prevented due to the war (liberty) Greece/ UK cooking</p>	<p>Africa – Liberty African savoury dishes</p>	<p>Mexico -Liberty – Fight over the border between USA and Mexico (historic) and impact on the people</p>