

Hallgate Primary School - Progression of Knowledge Skills in Science
Foundation Stage to Year 6

Objectives in Red are from other linked topics

Plants								
F1	F2	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Key Stage 3
<p>Communication & Language</p> <p>Understand 'why' questions such as 'why do seeds look different'?</p> <p>Use a wider range of vocabulary (e.g. flower, leaf, soil).</p> <p>Understanding the world</p> <p>Plant seeds and care for growing plants.</p> <p>Begin to understand the need to respect and care for the natural environment and all living things.</p> <p>Understand the key features in the life cycle of a plant.</p> <p>Talk about what they see using a wide vocabulary (e.g talk about planting the seed/ the seed growing).</p>	<p>Communication & Language</p> <p>Use new vocabulary throughout the day.</p> <p>Learn new vocabulary (e.g. parts of a plant).</p> <p>Use new vocabulary in different contexts.(e.g. Describing different plants, trees and flowers)</p> <p>Engage in non-fiction books (e.g. about plants).</p> <p>Listen to and talk about selected non-fiction to develop a deep familiarity with new knowledge and vocabulary.</p> <p>Understanding the world</p> <p>Explore the natural world around them, making observations and drawing pictures of plants.</p> <p>Understand the effect of changing seasons on the natural world around them.</p>	<p>Identify and name a variety of common wild plants.</p> <p>Identify and name a variety of common garden plants,</p> <p>Identify and name a variety of common deciduous trees.</p> <p>Identify and name a variety of common evergreen trees.</p> <p>Identify and describe the basic structure of a variety of common flowering plants.</p> <p>Describe the basic structure of a variety of common flowering plants.</p> <p>Identify and name the roots, trunk, branches and leaves of trees.</p>	<p>Observe how seeds grow into mature plants.</p> <p>Describe how seeds grow into mature plants.</p> <p>Observe how bulbs grow into mature plants.</p> <p>Describe how bulbs grow into mature plants.</p> <p>Find out and describe how plants need water to grow and stay healthy.</p> <p>Find out and describe how plants need light to grow and stay healthy.</p> <p>Find out and describe how plants need warmth to grow and stay healthy.</p> <p style="color: red;">Identify and name a variety of plants in their habitats, including microhabitats. (Y2 - Living things and their habitats)</p>	<p>Identify and describe the functions of different parts of the flowering plant: roots, stem/trunk/leaves and flowers</p> <p>Explore the part flowers play in a flowering plant life cycle, including: pollination,</p> <p>Explore the part flowers play in a flowering plant life cycle, including: seed formation.</p> <p>Explore the part flowers play in a flowering plant life cycle, including: seed dispersal.</p> <p>Explain the requirements of plants for life and growth (air, light, water, nutrients from soil, room to grow)</p> <p>Explain how the requirements of plants for life and growth and vary between plants</p> <p>Know the way in which water is transported between plants</p>	<p style="color: red;">Recognise that living things can be grouped in a variety of ways. (Y4 - Living things and their habitats)</p> <p style="color: red;">Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment. (Y4 - Living things and their habitats)</p> <p style="color: red;">Recognise that environments can change and that this can sometimes pose dangers to living things. (Y4 - Living things and their habitats)</p>	<p>Describe the life process of reproduction in some plants and animals. (Y5 - Living things and their habitats)</p>	<p style="color: red;">Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals. (Y6 - Living things and their habitats)</p> <p style="color: red;">Give reasons for classifying plants and animals based on specific characteristics. (Y6 - Living things and their habitats)</p>	<p>Reproduction in plants, including flower structure, wind and insect pollination, fertilisation, seed and fruit formation and dispersal, including quantitative investigation of some dispersal mechanisms</p>

Animals including Humans

F1	F2	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	KS3
<p><u>Communication & Language</u></p> <p>Understand 'why' questions such as 'why can we move'?</p> <p>Use a wider range of vocabulary (e.g. body, girl, boy).</p> <p><u>Understanding the World</u> Use all their senses in hands-on exploration of natural materials.</p> <p>Continue developing positive attitudes about the differences between people.</p> <p>Begin to make sense of their own life-story and family's history.</p> <p>Use all their senses in hands-on exploration of natural materials.</p> <p>Talk about what they see, using a wide vocabulary.</p> <p><u>Physical Development</u> Making healthy choices about food, drink, activity and toothbrushing.</p>	<p><u>Communication & Language</u></p> <p>Use new vocabulary throughout the day.</p> <p>Learn new vocabulary (e.g. parts of the body).</p> <p>Use new vocabulary in different contexts.(e.g. Describing how we use the different parts of our bodies)</p> <p>Engage in non-fiction books (e.g. about animals).</p> <p>Listen to and talk about selected non-fiction to develop a deep familiarity with new knowledge and vocabulary.</p> <p><u>Understanding the World</u> Describe what they see, hear & feel whilst outside. - senses.</p> <p>Talk about members of their immediate family and community e.g. age/appearance.</p> <p>Name and describe people who are familiar to them e.g. age/appearance.</p> <p><u>Physical Development</u> Know and talk about the different factors that support their overall health and wellbeing: regular physical activity, healthy eating,</p>	<p>Identify and name a variety of common animals including fish,</p> <p>Identify and name a variety of common animals including amphibians.</p> <p>Identify and name a variety of common animals including reptiles.</p> <p>Identify and name a variety of common animals including birds</p> <p>Identify and name a variety of common animals including mammals.</p> <p>Identify and name a variety of common animals that are carnivores,</p> <p>Identify and name a variety of common animals that are herbivores</p> <p>Identify and name a variety of common animals that are omnivores.</p>	<p>Know that animals, including humans, have offspring which grow into adults.</p> <p>Know the basic stages in a life cycle for animals, including humans.</p> <p>Find out 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>Describe the importance for humans of eating the right amounts of different types of food.</p> <p>Describe the importance for humans of hygiene.</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. (Y2 - Living things and their habitats)</p>	<p>Identify that animals, including humans, need the right types of nutrition,</p> <p>Identify that animals, including humans, need the right amount of nutrition.</p> <p>Identify that animals, including humans cannot make their own food; they get their nutrition from what they eat.</p> <p>Know about the importance of a nutritious, balanced diet.</p> <p>Identify that humans and some other animals have skeletons for support, protection and movement:</p> <p>Identify that humans and some other animals have muscles for support, protection and movement:</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>Identify the simple functions. Of the different types of teeth in humans.</p> <p>Construct a variety of food chains, identifying producers, predators and prey</p> <p>Interpret a variety of food chains, identifying producers, predators and prey</p>	<p>Describe the changes as humans develop to old age.</p> <p>Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. (Y5 - Living things and their habitats)</p> <p>Describe the life process of reproduction in some plants and animals. (Y5 - Living things and their habitats)</p>	<p>Identify and name the main parts of the human circulatory system,</p> <p>Describe the function of the heart.</p> <p>Describe the functions of the blood vessels.</p> <p>Describe the functions of the blood.</p> <p>Recognise the impact of diet on the way their bodies function.</p> <p>Recognise the impact of exercise, on the way their bodies function.</p> <p>Recognise the impact of drugs on the way their bodies function.</p> <p>Recognise the impact of 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>Describe how living things are classified into broad groups according to common observable characteristics and differences, including microorganisms, plants and animals. (Y6 -</p>	<p>The hierarchical organisation of multicellular organisms: from cells to tissues to organs to systems to organisms.</p> <p>The tissues and organs of the human digestive system, including adaptations to function and how the digestive system digests food (enzymes simply as biological catalysts) calculations of energy.</p> <p>Requirements in a healthy daily diet the consequences of imbalances in the diet, including obesity, starvation and deficiency diseases.</p> <p>The structure and functions of the gas exchange system in humans, including adaptations to function.</p> <p>The effects of recreational drugs (including substance misuse) on behaviour, health and life processes.</p>

	<p>toothbrushing, sensible amounts of 'screen time', having a good sleep routine & being a safe pedestrian.</p> <p>Natural World ELG Explore the natural world around them, making observations and drawing pictures of animals and plants.</p>						<p>Living things and their habitats)</p> <p>Give reasons for classifying plants and animals based on specific characteristics. (Y6 - Living things and their habitats)</p>	
--	--	--	--	--	--	--	--	--

Living things and their Habitats								
F1	F2	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	KS3
<p>Communication & Language</p> <p>Understand 'why' questions such as 'why do some animals live in the sea'?</p> <p>Use a wider range of vocabulary (e.g. home, nest, den).</p> <p>Understand the World Begin to understand the need to respect and care for the natural environment and all living things.</p>	<p>Understand the World Explore the natural world around them.</p> <p>Recognise some environments that are different to the one in which they live.</p> <p>Natural World ELG 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 some important processes and changes in the natural world around them, including the seasons</p>	<p>Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. (Y1 - Plants)</p> <p>Identify and describe the basic structure of a variety of common flowering plants, including trees. (Y1 - Plants)</p> <p>Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. (Y1 - Animals including humans)</p> <p>Identify and name a variety of common animals that are carnivores, herbivores and omnivores. (Y1 - Animals including humans)</p> <p>Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals,</p>	<p>Explore and compare the difference 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</p> <p>Describe how different habitats provide for the basic needs of different kinds of animals.</p> <p>Describe how different habitats provide for the basic needs of different kinds of plants,</p> <p>Describe how plants and animals 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 their food from plants and other animals, using the idea</p>	<p>Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. (Y3 - Plants)</p>	<p>Recognise that living things can be grouped in a variety of ways.</p> <p>Explore and use classification keys to help group a variety of living things in their local and wider environment.</p> <p>Explore and use classification keys to help identify and name a variety of living things in their local and wider environment.</p> <p>Recognise that environments can change</p> <p>Recognise that environments can sometimes pose danger to living things.</p> <p>Construct and interpret a variety of food chains, identifying producers, predators and prey. (Y4 - Animals, including humans)</p>	<p>Describe the life cycle of a mammal.</p> <p>Describe the life cycle of an amphibian.</p> <p>Describe the life cycle of an insect.</p> <p>Describe the life cycle of a bird.</p> <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>Classify living things into broad groups according to observable characteristics.</p> <p>Classify living things into broad groups based on similarities</p> <p>Classify living things into broad groups based on differences.</p> <p>Give reasons for classifying animals based on specific characteristics.</p> <p>Give reasons for classifying plants based on specific characteristics.</p> <p>Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents. (Y6 - Evolution and inheritance)</p>	<p>The dependence of almost all life on Earth on the ability of photosynthetic organisms, such as plants and algae, to use sunlight in photosynthesis to build organic molecules that are an essential energy store and to maintain levels of oxygen and carbon dioxide in the atmosphere</p> <p>The adaptations of leaves for photosynthesis.</p> <p>The interdependence of organisms in an ecosystem, including food webs and insect pollinated crops</p> <p>The importance of plant reproduction through insect pollination in human food security</p> <p>How organisms affect, and are affected by, their environment,</p>

		including pets). (Y1 - Animals, including humans) Observe changes across the four seasons. (Y1 - Seasonal change)	of a simple food chain, and identify and name the different sources of food. Notice that animals, including humans, have offspring which grow into adults. (Y2 - Animals including humans)				Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution. (Y6 - Evolution and inheritance)	including the accumulation of toxic materials.
--	--	--	---	--	--	--	---	--

Materials								
F1	F2	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	KS3
<p><u>Communication & Language</u></p> <p>Understand 'why' questions such as 'why do our clothes feel soft'?</p> <p>Use a wider range of vocabulary (e.g. hard, soft, rough, smooth).</p> <p><u>Understanding the world</u></p> <p>Talk about the differences between materials and changes they notice.</p> <p>Explore collections of materials with similar and/or different properties.</p> <p>Use all their senses in hands-on exploration of natural materials.</p>	<p><u>Communication & Language</u></p> <p>Use new vocabulary throughout the day.</p> <p>Learn new vocabulary (e.g. different materials).</p> <p>Use new vocabulary in different contexts.(e.g. Describing different properties of the material)</p> <p>Engage in non-fiction books (e.g. about where materials come from).</p> <p>Listen to and talk about selected non-fiction to develop a deep familiarity with new knowledge and vocabulary.</p> <p><u>Understanding the world</u></p> <p>Explore the natural world around them.</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.</p> <p>Identify and name a variety of everyday materials, including metal.</p> <p>Identify and name a variety of everyday materials, including plastic.</p> <p>Identify and name a variety of everyday materials, including glass.</p> <p>Identify and name a variety of everyday materials, including water.</p> <p>Identify and name a variety of everyday materials, including rock.</p>	<p>Identify the suitability of wood, for a particular use.</p> <p>Identify the suitability of metal for a particular use.</p> <p>Identify the suitability of plastic for a particular use.</p> <p>Identify the suitability of glass for a particular use.</p> <p>Identify the suitability of brick for a particular use.</p> <p>Identify the suitability of paper for a particular use.</p> <p>Identify the suitability of cardboard for a particular use.</p> <p>Compare the suitability of a variety of everyday materials for particular uses.</p>	<p>Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties. (Y3 - Rocks)</p> <p>Describe in simple terms how fossils are formed when things that have lived are trapped within rock. (Y3 - Rocks)</p> <p>Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials. (Y3 - Forces and magnets)</p>	<p>Compare materials according to whether they are solids, liquids or gases.</p> <p>Group materials together, according to whether they are solids, liquids or gases.</p> <p>Observe that some materials change state when heated</p> <p>Observe that some materials change state when cooled.</p> <p>Measure and research the temperature at which materials change state when heated in degrees Celsius.</p> <p>Measure and research the temperature at which materials change state when cooled in degrees Celsius.</p>	<p>Compare and group together everyday materials on the basis of their properties, including their hardness.</p> <p>Compare and group together everyday materials on the basis of their properties, including their solubility.</p> <p>Compare and group together everyday materials on the basis of their properties, including their transparency.</p> <p>Compare and group together everyday materials on the basis of their properties, including their electrical conductivity.</p> <p>Compare and group together everyday materials on the basis of their properties, including their thermal conductivity.</p>	<p>No Objectives</p>	<p>The concept of a pure substance mixtures, including dissolving</p> <p>Diffusion in terms of the particle model</p> <p>Simple techniques for separating mixtures: filtration, evaporation, distillation and chromatography</p> <p>The identification of pure substances</p>

	<p>Describe what they see, hear & feel whilst outside.</p> <p>Recognise some environments that are different to the one in which they live.</p> <p><u>The Natural World - ELG</u> 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>Describe the simple physical properties of a variety of everyday materials.</p> <p>Compare a variety of everyday materials on the basis of their simple properties.</p> <p>Group a variety of everyday materials on the basis of their simple properties</p>	<p>Find out how shapes of solid objects made from some materials can be changed by squashing.</p> <p>Find out how shapes of solid objects made from some materials can be changed by bending.</p> <p>Find out how shapes of solid objects made from some materials can be changed by twisting.</p> <p>Find out how shapes of solid objects made from some materials can be changed by stretching.</p>		<p>Identify the part played by condensation in the water cycle.</p> <p>Identify the part played by evaporation in the water cycle.</p> <p>Associate the rate of evaporation with temperature.</p>	<p>Compare and group together everyday materials on the basis of their properties, including their response to magnets.</p> <p>Know that some materials will dissolve in liquid to form a solution.</p> <p>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, through filtering.</p> <p>Use knowledge of solids, liquids and gases to decide how mixtures might be separated, through sieving.</p> <p>Use knowledge of solids, liquids and gases to decide how mixtures might be separated, through evaporating.</p> <p>Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals.</p> <p>Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including wood.</p> <p>Give reasons, based on evidence from comparative and fair tests, for the particular</p>		
--	---	---	---	--	---	--	--	--

						<p>uses of everyday materials, including plastic.</p> <p>Demonstrate that dissolving is a reversible change.</p> <p>Demonstrate that mixing is a reversible change.</p> <p>Demonstrate that changing state is a reversible change.</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.</p> <p>Explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including the action of acid on bicarbonate of soda.</p>		
--	--	--	--	--	--	--	--	--

Forces

F1	F2	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	KS3
<p><u>Communication & Language</u></p> <p>Understand 'why' questions such as 'why did the toy move?'</p> <p>Use a wider range of vocabulary (e.g. push, pull, stop, go).</p> <p><u>Understanding the world</u></p> <p>Explore and talk about different forces they can feel.</p>	<p><u>Communication & Language</u></p> <p>Use new vocabulary throughout the day.</p> <p>Learn new vocabulary (e.g. twist, stretch, pull, push - could be when doing playdough).</p> <p>Use new vocabulary in different contexts.(e.g. Describing how they have changed the shape of the playdough)</p> <p>Engage in non-fiction books (e.g. where the character pulls/pushes something?).</p> <p>Listen to and talk about selected non-fiction to develop a deep familiarity with new knowledge and vocabulary.</p> <p><u>Understanding the world</u></p> <p>Explore the natural world around them.</p> <p>Describe what they see, hear & feel whilst outside.</p> <p><u>The Natural World - ELG</u></p> <p>Explore the natural world around them, making observations and drawing pictures of animals and plants.</p>	No Objectives	<p>Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. (Y2 - Uses of everyday materials)</p>	<p>Compare how things move on different surfaces.</p> <p>Know how a simple pulley makes lifting an object simpler.</p> <p>Explain how a simple pulley works.</p> <p>Know that some forces need contact between two objects.</p> <p>Know that magnetic forces can act at a distance.</p> <p>Observe how magnets attract and repel each other.</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> <p>Know that magnets attract some materials and not others.</p> <p>Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet.</p> <p>Be able to identify some magnetic materials.</p>	No Objectives	<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>Explain the impact of gravity on our lives.</p> <p>Identify the effect of air resistance acting between moving surfaces.</p> <p>Identify the effect of water resistance acting between moving surfaces.</p> <p>Identify the effect of friction acting between moving surfaces.</p> <p>Recognise that some mechanisms, - levers, - allow a smaller force to have a greater effect.</p> <p>Recognise that some mechanisms, - pulleys, - allow a smaller force to have a greater effect.</p> <p>Recognise that some mechanisms, - gears - allow a smaller force to have a greater effect.</p>	No Objectives	<p>Opposing forces and equilibrium: weight held by stretched spring or supported on a compressed surface</p> <p>Forces being needed to cause objects to stop or start moving, or to change their speed or direction of motion (qualitative only) Change depending on direction of force and its size.</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.							
--	--	--	--	--	--	--	--	--

Sound								
F1	F2	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	KS3
<p><u>Communication & Language</u></p> <p>Understand 'why' questions such as 'why is your voice quiet?'</p> <p>Use a wider range of vocabulary (e.g. loud, soft, whisper, shout).</p> <p><u>Understanding the world</u></p> <p>Show interest in different occupations - e.g. nurse/doctor/vet</p>	<p><u>Communication & Language</u></p> <p>Use new vocabulary throughout the day.</p> <p>Learn new vocabulary (e.g. loud, quiet, soft, Harsh,, voice, ear).</p> <p>Use new vocabulary in different contexts.(e.g. Describing how they use their ear to hear)</p> <p>Engage in non-fiction books (e.g. where there are different noises involved).</p> <p>Listen to and talk about selected non-fiction to develop a deep familiarity with new knowledge and vocabulary.</p> <p><u>Understanding the world</u></p> <p>Describe what they see, hear & feel whilst outside.</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. (Y1 - Animals, including humans)</p>	No Objectives	No Objectives	<p>Know how sound is made associating some of them with vibrating.</p> <p>Know what happens to a sound as it travels from its source to our ears.</p> <p>Know the correlation between the volume of a sound and the strength of the vibrations that produced it.</p> <p>Know how sound travels from a source to our ears.</p> <p>Know the correlation between pitch and the object producing a sound.</p>	No Objectives	No Objectives	<p>Frequencies of sound waves, measured in hertz (Hz); echoes, reflection and absorption of sound</p> <p>Sound needs a medium to travel, the speed of sound in air, in water, in solids</p> <p>Sound produced by vibrations of objects, in loud speakers, detected by their effects on microphone diaphragm and the ear drum; sound waves are longitudinal</p> <p>Auditory range of humans and animals.</p>

Light								
F1	F2	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	KS3
<p><u>Communication & Language</u></p> <p>Understand 'why' questions such as 'why is it light outside'?</p> <p>Use a wider range of vocabulary (e.g. light, dark).</p> <p><u>Understanding the world</u></p> <p>Use all their senses in hands-on exploration of natural materials.</p> <p>Talk about what they see, using a wide vocabulary.</p> <p>Explore how things work.</p>	<p><u>Communication & Language</u></p> <p>Use new vocabulary throughout the day.</p> <p>Learn new vocabulary (e.g. light, dark, eye, electricity, switch).</p> <p>Use new vocabulary in different contexts.(e.g. Describing that the sun makes it light outside)</p> <p>Engage in non-fiction books (e.g. night and day).</p> <p>Listen to and talk about selected non-fiction to develop a deep familiarity with new knowledge and vocabulary.</p> <p><u>Understanding the world</u></p> <p>Describe what they see, hear & feel whilst outside.</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. (Y1 - Animals, including humans)</p> <p>Describe the simple physical properties of a variety of everyday materials. (Y1 - Materials)</p>	No Objectives	<p>Recognise that they need light in order to see things.</p> <p>Recognise 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.</p> <p>Know that there are ways to protect their eyes from the sun.</p> <p>Recognise that shadows are formed when the light from a light source is blocked by a solid object.</p> <p>Find patterns in the way that the sizes of shadows change.</p>	No Objectives	<p>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. (Y5 - Properties and changes of materials)</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>Know how simple optical instruments work, e.g. periscope, telescope, binoculars, mirror, magnifying glass etc.</p>	<p>The similarities and differences between light waves and waves in matter</p> <p>Light waves travelling through a vacuum; speed of light</p> <p>The transmission of light through materials: absorption, diffuse scattering and specular reflection at a surface Science</p> <p>Use of ray model to explain imaging in mirrors, the pinhole camera, the refraction of light and action of convex lens in focusing (qualitative); the human eye</p> <p>Light transferring energy from source to absorber leading to chemical and electrical effects; photo-sensitive material in the retina and in cameras</p> <p>Colours and the different frequencies of light, white light and prisms (qualitative only); differential colour effects in absorption and diffuse reflection.</p>

Earth and Space

F1	F2	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	KS3
<p><u>Communication & Language</u></p> <p>Understand 'why' questions such as 'why'?</p> <p>Use a wider range of vocabulary (e.g. sky, sun, moon, cloud).</p> <p><u>Understanding the world</u></p> <p>Show interest in different occupations - e.g. astronaut.</p>	<p><u>Communication & Language</u></p> <p>Use new vocabulary throughout the day.</p> <p>Learn new vocabulary (e.g. sun, moon, sky, stars, space, planet).</p> <p>Use new vocabulary in different contexts.(e.g. Describing that a rocket may go to the moon)</p> <p>Engage in non-fiction books (e.g. night and day).</p> <p>Engage in story times. - e.g. Whatever Next!</p> <p>Listen to and talk about selected non-fiction to develop a deep familiarity with new knowledge and vocabulary.</p>	<p>Observe changes across the four seasons. (Y1 - Seasonal changes)</p> <p>Observe and describe weather associated with the seasons and how day length varies. (Y1 - Seasonal changes)</p>	No Objectives	No Objectives	No Objectives	<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 as an approximately spherical body.</p> <p>Describe the Earth as an approximately spherical body.</p> <p>Describe the Moon as an approximately spherical body.</p> <p>Describe the idea of the Earth's rotation to explain day and night</p> <p>Describe the idea of the Earth's rotation to explain the apparent movement of the sun across the sky.</p>	No Objectives	<p>Gravity force, weight = mass x gravitational field strength (g), on Earth $g=10 \text{ N/kg}$, different on other planets and stars; gravity forces between Earth and Moon, and between Earth and Sun (qualitative only).</p> <p>Our Sun as a star, other stars in our galaxy, other galaxies.</p> <p>The seasons and the Earth's tilt, day length at different times of year, in different hemispheres.</p> <p>The light year as a unit of astronomical distance</p>

Electricity

Electricity								
F1	F2	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	KS3
<p><u>Communication & Language</u></p> <p>Understand 'why' questions such as 'why do things work when we plug them in?'</p> <p>Use a wider range of vocabulary (e.g. plug, switch, on, off).</p> <p><u>Understand the World</u></p> <p>Show interest in different occupations (e.g. electrician)</p> <p>Explore how things work.</p>	<p><u>Communication & Language</u></p> <p>Use new vocabulary throughout the day.</p> <p>Learn new vocabulary (e.g. plug, wire, electricity, screwdriver).</p> <p>Use new vocabulary in different contexts.(e.g. Describing how the electricity goes from the wall to a device)</p> <p>Listen to and talk about selected non-fiction to develop a deep familiarity with new knowledge and vocabulary.</p> <p><u>Physical Development</u></p> <p>Know and talk about the different factors that support their overall health and wellbeing: Safety with electricity.</p>	No Objectives	No Objectives	No Objectives	<p>Identify common appliances that run on electricity.</p> <p>Construct a simple series electrical circuit.</p> <p>Identifying and naming the cell in a series circuit.</p> <p>Identifying and naming the wires in a series circuit.</p> <p>Identifying and naming the bulb in a series circuit.</p> <p>Identifying and naming the switch in a series circuit.</p> <p>Identifying and naming the buzzer in a series circuit.</p> <p>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.</p> <p>Recognise that a switch opens and closes the circuit</p> <p>Associate the switch with whether or not a lamp lights in a simple series circuit.</p> <p>Recognise some common conductors</p>	No Objectives	<p>Associate the brightness of a lamp or the volume of a buzzer with the number of cells used in the circuit.</p> <p>Associate the brightness of a lamp or the volume of a buzzer with the voltage of cells used in the circuit.</p> <p>Compare and give reasons for variations in how components function, including the brightness of bulbs.</p> <p>Compare and give reasons for variations in how components function, including the loudness of buzzers.</p> <p>Compare and give reasons for variations in how components function, including the on/off position of switches.</p> <p>Use the recognised symbol for a cell when representing a simple circuit in a diagram.</p> <p>Use the recognised symbol for wires when representing a simple circuit in a diagram.</p> <p>Use the recognised symbol for a bulb when representing a simple circuit in a diagram.</p> <p>Use the recognised symbol for a buzzer</p>	<p>Electric current, measured in amperes, in circuits, series and parallel circuits, currents add where branches meet and current as flow of charge</p> <p>Potential difference, measured in volts, battery and bulb ratings; resistance, measured in ohms, as the ratio of potential difference (p.d.) to current</p> <p>Differences in resistance between conducting and insulating components (quantitative). Separation of positive or negative charges when objects are rubbed together: transfer of electrons, forces between charged objects</p> <p>The idea of electric field, forces acting across the space between objects not in contact.</p>

					<p>Recognise some common insulators.</p> <p>Associate metals with being good conductors.</p> <p>Know the difference between a conductor and an insulator; giving examples of each.</p> <p>Describe how to use electricity safely.</p>		<p>when representing a simple circuit in a diagram.</p> <p>Use the recognised symbol for a motor when representing a simple circuit in a diagram.</p> <p>Use the recognised symbol for a closed switch when representing a simple circuit in a diagram.</p> <p>Use the recognised symbol for an open switch when representing a simple circuit in a diagram.</p>	
--	--	--	--	--	---	--	--	--

Rocks								
F1	F2	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	KS3
<p><u>Communication & Language</u></p> <p>Understand 'why' questions such as 'why do we use rocks to build?'</p> <p>Use a wider range of vocabulary (e.g. pebble, rock, stone).</p> <p><u>Understand the World</u></p> <p>Show interest in different occupations (e.g. geologist, jeweller)</p> <p>Explore how things work.</p> <p>Talk about the differences between materials and changes they notice.</p>	<p><u>Communication & Language</u></p> <p>Use new vocabulary throughout the day.</p> <p>Learn new vocabulary (e.g. pebble, rock, stone, ground, soil, sand).</p> <p>Use new vocabulary in different contexts.(e.g. Describing how rocks are exploded out of the ground)</p> <p>Listen to and talk about selected non-fiction to develop a deep familiarity with new knowledge and vocabulary.</p>	<p>Distinguish between an object and the material from which it is made. (Y1 - Everyday materials)</p> <p>Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock. (Y1 - Everyday materials)</p> <p>Describe the simple physical properties of a variety of everyday materials. (Y1 - Everyday materials)</p> <p>Compare and group together a variety of everyday materials on the basis of their simple</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. (Y2 - Uses of everyday materials)</p>	<p>Compare and group together different kinds of rocks on the basis of their appearance.</p> <p>Compare and group together different kinds of rocks on the basis of their 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>	No Objectives	No Objectives	<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. (Y6 - Evolution and inheritance)</p>	<p>The composition of the Earth.</p> <p>The structure of the Earth.</p> <p>The rock cycle and the formation of igneous, sedimentary and metamorphic rocks.</p>

<p>Explore collections of materials with similar and/or different properties.</p> <p>Use all their senses in hands-on exploration of natural materials.</p>	<p>Share fiction stories - e.g 3 little pigs</p> <p><u>Understanding the world</u></p> <p>Explore the natural world around them.</p> <p>Describe what they see, hear & feel whilst outside.</p> <p><u>The Natural World - ELG</u></p> <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>physical properties. (Y1 - Everyday materials)</p>						
---	---	---	--	--	--	--	--	--

Evolution and Inheritance								
F1	F2	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	KS3
<p><u>Communication & Language</u></p> <p>Understand 'why' questions such as 'why do we all look different'?</p> <p>Use a wider range of vocabulary (e.g. hair, eyes, tall, short, boy, girl).</p>	<p><u>Communication & Language</u></p> <p>Use new vocabulary throughout the day.</p> <p>Learn new vocabulary (e.g. freckles, tongue, hair colour, eye colour).</p> <p>Use new vocabulary in different contexts.(e.g.</p>	<p>No Objectives</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. (Y2 - Living things and their habitats)</p>	<p>Describe in simple terms how fossils are formed when things that have lived are trapped within rock. (Y3 - Rocks)</p> <p>Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed</p>	<p>Recognise that environments can change and that this can sometimes pose dangers to living things. (Y4 - Living things and their habitats)</p>	<p>Describe the life process of reproduction in some plants and animals. (Living things and their habitats - Y5) Year 6 • Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago. • Recognise</p>	<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</p>	<p>Heredity as the process by which genetic information is transmitted from one generation to the next.</p> <p>A simple model of chromosomes, genes and DNA in heredity, including the part played by Watson, Crick, Wilkins and Franklin in the</p>

<p>Understanding the World Use all their senses in hands-on exploration of natural materials.</p> <p>Continue developing positive attitudes about the differences between people.</p> <p>Begin to make sense of their own life-story and family's history.</p> <p>Use all their senses in hands-on exploration of natural materials.</p> <p>Talk about what they see, using a wide vocabulary.</p> <p>Physical Development Making healthy choices about food, drink, activity and toothbrushing.</p>	<p>Describing different features on ourselves and each other)</p> <p>Listen to and talk about selected non-fiction to develop a deep familiarity with new knowledge and vocabulary.</p> <p>Understanding the World Describe what they see, hear & feel whilst outside. - senses.</p> <p>Talk about members of their immediate family and community e.g. age/appearance.</p> <p>Name and describe people who are familiar to them e.g. age/appearance.</p> <p>Natural World ELG Explore the natural world around them, making observations and drawing pictures of animals and plants.</p>		<p>Notice that animals, including humans, have offspring which grow into adults. (Y2 - Animals, including humans)</p>	<p>dispersal. (Y3 - Plants)</p>		<p>that</p>	<p>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>development of the DNA model.</p> <p>The variation between species and between individuals of the same species means some organisms compete more successfully, which can drive natural selection.</p> <p>Changes in the environment may leave individuals within a species, and some entire species, less well adapted to compete successfully and reproduce, which in turn may lead to extinction</p>
--	---	--	---	---------------------------------	--	-------------	---	---

Seasonal Changes								
F1	F2	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	KS3
<p>Communication & Language</p> <p>Understand 'why' questions such as 'why is it cold'?</p> <p>Use a wider range of vocabulary (e.g. hot, cold, rain, snow, sun).</p>	<p>Communication & Language</p> <p>Use new vocabulary throughout the day.</p> <p>Learn new vocabulary (e.g. Spring, summer, autumn, winter, hot, cold, sun, rain, leaves).</p>	<p>Observe changes across Spring.</p> <p>Observe changes across Summer.</p> <p>Observe changes across Autumn.</p> <p>Observe changes across Winter.</p>	<p>No Objectives</p>	<p>Recognise that light from the sun can be dangerous and that there are ways to protect their eyes. (Y3 - Light)</p>	<p>No Objectives</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. (Y5 - Earth and space)</p>	<p>No Objectives</p>	<p>The seasons and the Earth's tilt, day length at different times of year, in different hemispheres.</p>

<p><u>Understanding the World</u> Use all their senses in hands-on exploration of natural materials.</p> <p>Continue developing positive attitudes about the differences between people.</p> <p>Begin to make sense of their own life-story and family's history.</p> <p>Use all their senses in hands-on exploration of natural materials.</p> <p>Talk about what they see, using a wide vocabulary.</p> <p><u>Physical Development</u> Talk about what they see, using a wide vocabulary.</p> <p>Begin to understand the need to respect and care for the natural environment and all living things.</p>	<p>Use new vocabulary in different contexts.(e.g. Describing how the weather changes between winter and summer)</p> <p>Listen to and talk about selected non-fiction to develop a deep familiarity with new knowledge and vocabulary.</p> <p><u>Understanding the World</u> Understand the effect of changing seasons on the natural world around them.</p> <p>Recognise some environments that are different to the one in which they live.</p> <p>Explore the natural world around them.</p> <p>Describe what they see, hear & feel whilst outside.</p> <p><u>Natural World ELG</u> Explore the natural world around them, making observations and drawing pictures of animals and plants.</p>	<p>Observe and describe weather associated with the seasons.</p> <p>Observe and describe how day length varies across the seasons.</p>						
--	--	--	--	--	--	--	--	--