Banks Road Primary School
Science Long Term Curriculum Plan

Year	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Nursery	**Seasons** • Explore and respond to different natural phenomena in their setting and on trips.	**Materials & Forces** • Talk about the differences between materials and changes they notice • Use all their senses in hands-on exploration of natural materials. • Explore collections of materials with similar and/or different properties. • Explore natural materials, indoors and outside • Explore and talk about different forces they can feel. • Explore how things work. • Talk about the differences between materials and changes they notice	**Living Things & Habitats** • Use all their senses in hands-on exploration of natural materials • Explore collections of materials with similar and/or different properties • Begin to understand the need to respect and care for the natural environment and all living things.	**Plants** • Plant seeds and care for growing plants. • Understand the key features of the life cycle of a plant and an animal. • Begin to understand the need to respect and care for the natural environment and all living things. • Use all their senses in hands-on exploration of natural materials. • Explore collections of materials with similar and/or different properties.	**Light, Sound & Electricity** • Explore and respond to different natural phenomena in their setting and on trips. • Explore how things work. • Talk about the differences in materials and changes they notice.	**Animals including Humans** • Understand the key features of the life cycle of a plant and an animal. • Use all their senses in hands-on exploration of natural materials. • Begin to make sense of their own life-story and family's history
Year	**Autumn 1**	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
Rec	**Seasons** • Understand the effect of changing seasons on the natural world around them.	**Materials & Forces** • Explore the natural world around them. • Describe what they see, hear and feel whilst outside.	**Living Things & Habitats** • Draw information from a simple map. • Explore the natural world around them.	**Plants** • Describe what they see, hear and feel whilst outside • Explore the natural world around them.	**Light, Sound & Electricity** • Explore the natural world around them. • Describe what they see, hear and feel whilst outside.	**Animals including Humans** • Recognise some environments that are different from the one in which they live.

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	• Explore the natural world around them. • Describe what they see, hear and feel whilst outside.		• Describe what they see, hear and feel whilst outside. • Recognise some environments that are different to the one in which they live.			• Talk about members of their immediate family and community. • Name and describe people who are familiar to them.
Year	**Autumn 1**	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
1	**The Park Explorers** • identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. • identify and describe the basic structure of a variety of common flowering plants, including trees	**My Body and my Senses** • identify, name, draw, and label the basic parts of the human body and say which part is associated with each sense	**Materials** • distinguish between an object and the material from which it is made identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock • describe the simple physical properties of a variety of everyday materials • compare and group together a variety of everyday materials on the basis of their simple physical properties.	**Animal Groups** • identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals • describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets)	**Animal Diets** • identify and name a variety of common animals that are carnivores, herbivores and omnivores	**Seasonal Changes** • observe changes across the four seasons • observe and describe weather associated with the seasons and how day length varies.
Year	**Autumn 1**	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
2	**Plants** • observe and describe how seeds and bulbs grow into mature plants • find out and describe how plants need water, light and a suitable	**Materials** • identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and	**Animals** • notice that animals, including humans, have offspring which grow into adults • find out about and describe the basic needs of animals, including humans, for	**Habitats** • explore and compare the differences between things that are living, dead, and things that have never been alive • identify that most living things live in	**Microhabitats** • 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	**Food Chains & Health** • describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food.

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	temperature to grow and stay healthy.	cardboard for particular uses • find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.	survival (water, food and air)	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 identify and name a variety of plants and animals in their habitats, including microhabitats • describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food.	kinds of animals and plants, and how they depend on each other identify and name a variety of plants and animals in their habitats, including microhabitats	• describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.
Year	**Autumn 1**	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
3	**Plants** • identify and describe the functions of different parts of the flowering plant: roots, stem/trunk/leaves and flowers • explore the part flowers play in a flowering plants life cycle, including: pollination, seed formation and seed dispersal	**Rocks** • 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	**Light** • recognise that they need light in order to see things and that dark is the absence of light • notice that light is reflected from surfaces • recognise that light from the sun can be dangerous and that there are ways to protect their eyes	**Animals Including Humans** • 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 other animals have skeletons and muscles for support,	**Forces and Magnets** • compare how things move on different surfaces • notice that some forces need contact between 2 objects, but magnetic forces can act at a distance • observe how magnets attract or repel each other and attract some materials and not others	**The Bee Project** • explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal • identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they

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	• explain the requirements of plants for life and growth (air, light, water, nutrients from soil, room to grow) and how they vary between plants • know the way in which water is transported between plants	rocks and organic matter	• recognise that shadows are formed when the light from a light source is blocked by an opaque object • find patterns in the way that the size of shadows change	protection and movement	• 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 • describe magnets as having 2 poles • predict whether 2 magnets will attract or repel each other, depending on which poles are facing	get nutrition from what they eat • identify that humans and some other animals have skeletons and muscles for support, protection and movement
Year	**Autumn 1**	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
4	**States of Matter** • compare and group materials together, according to whether they are solids, liquids or gases • observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C) • identify the part played by evaporation and condensation in the water cycle and	**Animals Including Humans** • describe the simple functions of the basic parts of the digestive system in humans • identify the different types of teeth in humans and their simple functions • construct and interpret a variety of food chains, identifying producers, predators and prey	**Sound** • identify how sounds are made, associating some of them with something vibrating • recognise that vibrations from sounds travel through a medium to the ear • find patterns between the pitch of a sound and features of the object that produced it • find patterns between the volume of a sound and the strength of the vibrations that produced it • recognise that sounds get fainter as the distance from the	**Living Things and their Habitats** • recognise that living things can be grouped in a variety of ways • explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment • recognise that environments can change and that this can sometimes pose dangers to living things	**Electricity** • identify common appliances that run on electricity • construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers • identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery • recognise that a switch opens and closes a circuit and associate this with	**The History of Science** • explore the requirements of plants for life and growth • notice that light is reflected from surfaces • notice that some forces need contact between 2 objects, whilst others act at a distance • recognise that environments can change and that this can sometimes pose dangers to living things • compare and group materials together

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	associate the rate of evaporation with temperature		sound source increases		whether or not a lamp lights in a simple series circuit • recognise some common conductors and insulators, and associate metals with being good conductors	
Year	**Autumn 1**	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
5	**Properties and Changes of Materials** • 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 • know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution • use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through	**Animals Including Humans** • describe the changes as humans develop to old age. This includes understanding the stages of the human life cycle, from baby to elderly, and recognising key development milestones along the way.	**Forces** • explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object • identify the effects of air resistance, water resistance and friction, that act between moving surfaces • recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect	**Living Things and Their Habitats** • describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird • describe the life process of reproduction in some plants and animals	**Earth and Space** • describe the movement of the Earth and other planets relative to the sun in the solar system • describe the movement of the Moon relative to the Earth • describe the Sun, Earth and Moon as approximately spherical bodies • use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky	**The Scientific Method** • planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary • taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate • recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs • using test results to make predictions to set up further

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	filtering, sieving and evaporating • give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic • demonstrate that dissolving, mixing and changes of state are reversible changes • explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda					comparative and fair tests • reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations • identifying scientific evidence that has been used to support or refute ideas or arguments
Year	**Autumn 1**	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
6	**Animals Including Humans** • identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood	**The Science of Light** • recognise that light appears to travel in straight lines • use the idea that light travels in straight lines to • explain that objects are seen because they give out or	**Electric Circuits** • associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit • compare and give reasons for variations	**Evolution and Inheritance** • recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago	**Living Things and their Habitats – CLASSIFICATION** • recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago	**Preparing for secondary science** • develop scientific knowledge and conceptual understanding. • understand the nature, processes, and methods of science.

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	• recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function • describe the ways in which nutrients and water are transported within animals, including humans	reflect light into the eye • explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes • use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them	in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches • use recognised symbols when representing a simple circuit in a diagram	• recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents • identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution	• recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents • identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution	• be equipped with the scientific knowledge required to understand the uses and implications of science.