



Science Curriculum Overview 2023-2024

Autumn

Autumn		
Area of Learning	Nursery	Reception
SPECIFIC Understanding the World <ul style="list-style-type: none"> • Past & present • People, culture, and communities • The natural world 	<ul style="list-style-type: none"> • Use all their senses in hands on exploration of natural materials. • Explore collections of materials with similar and/or different properties. • Show interest in different occupations. • Explore how things work. • Begin to understand the need to respect and care for the natural environment and all living things. 	<ul style="list-style-type: none"> • Talk about members of their immediate family and community. • Name and describe people who are familiar to them. • Comment on images of familiar situations in the past. • Understand that some places are special to members of their community. • Explore the natural world around them • Describe what they see, hear and feel whilst outside.

Spring

Spring		
Area of Learning	Nursery	Reception
SPECIFIC Understanding the World <ul style="list-style-type: none"> • Past & present • People, culture, and communities • The natural world 	<ul style="list-style-type: none"> • Talk about what they see, using a wide vocabulary. • Begin to make sense of their own life-story and family's history. • Plant seeds and care for growing plants. • Explore and talk about different forces they can feel. • Talk about the differences between materials and changes they notice. 	<ul style="list-style-type: none"> • Compare and contrast characters from stories, including figures from the past. • Draw information from a simple map. • Recognise that people have different beliefs and celebrate special times in different ways. • Understand the effect of changing seasons on the natural world around them. • Create collaboratively, sharing ideas, resources and skills. • Watch and talk about dance and performance art, expressing their feelings and responses.



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Summer

Area of Learning	Nursery	Reception
SPECIFIC Understanding the World <ul style="list-style-type: none"> Past & present People, culture, and communities The natural world 	<ul style="list-style-type: none"> Understand the key features of the life cycle of a plant and an animal Continue developing positive attitudes about the differences between people. Know that there are different countries in the world and talk about the differences they have experienced or seen in photos. 	<ul style="list-style-type: none"> Recognise some similarities and differences between life in this country and life in other countries. Recognise some environments that are different to the one in which they live.

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Autumn 1	Animals including humans Scientist: David Attenborough	Electricity (Additional Unit) Scientist: Thomas Edison	Rocks and Fossils Scientist: Mary Anning	Animals including Humans Scientist: Jane Goodall	Earth and Space Scientists: Brian Cox Maggie Aderin- Pocock	Evolution and Inheritance Scientists: Charles Darwin Nazreen Rahman
Concepts and skills taught:	<ul style="list-style-type: none"> identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals 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 	<ul style="list-style-type: none"> Understand that electricity is a power source Classify electrical appliances into mains and battery electricity Understand how and why to keep safe around electricity Create a working circuit Recognise the purpose of a switch in a circuit. Understand why you need a complete circuit to create an output 	<ul style="list-style-type: none"> compare and group together different kinds of rocks on the basis of their appearance and simple physical properties describe in simple terms how fossils are formed when things that have lived are trapped within rock recognise that soils are made from rocks and organic matter 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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 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



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	part of the body is associated with each sense	<ul style="list-style-type: none"> Investigate materials that are conductors and insulators 				
Autumn 2	Materials	Animals and Humans	Rocks - Volcanoes	Sound	Living Things and their Habitats	Animals including Humans
Concepts and skills taught:	<ul style="list-style-type: none"> Identify and classify properties of materials 	<ul style="list-style-type: none"> notice that animals, including humans, have offspring which grow into adults find out about and describe the basic needs of animals, including humans, for survival (water, food and air) describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene 	<ul style="list-style-type: none"> Identify how volcanoes are formed recognise the effects of volcanoes on local habitats 	<ul style="list-style-type: none"> 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 sound source increases 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood 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
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Spring 1	Materials- Everyday Materials Scientist: Charles Macintosh	Materials- Uses of Materials Scientist: John Loudon McAdam	Forces including Magnets Scientists: Galileo Galilei	Materials- States of Matter Scientist: Focus on famous female scientists - Maria the Jewess	Animals including Humans Scientist: Florence Nightingale	Living Things and their Habitat Scientists: Carl Linnaeus Edward Jenner
Concepts and skills taught:	<ul style="list-style-type: none"> distinguish between an object and the material from which it is made identify and name a variety of everyday materials, including 	<ul style="list-style-type: none"> identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses 	<ul style="list-style-type: none"> notice that some forces need contact between 2 objects, but magnetic forces can act at a distance 	<ul style="list-style-type: none"> compare and group materials together, according to whether they are solids, liquids or gases observe that some materials change state 	<ul style="list-style-type: none"> describe the changes as humans develop to old age 	<ul style="list-style-type: none"> describe how living things are classified into broad groups according to common observable characteristics and based on similarities and



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	<p>wood, plastic, glass, metal, water, and rock</p> <ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching 	<ul style="list-style-type: none"> observe how magnets attract or repel each other and attract some materials and not others compare and group together a variety of everyday materials on the basis of whether 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 	<p>when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C)</p> <ul style="list-style-type: none"> identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature 		<p>differences, including micro-organisms, plants and animals</p> <ul style="list-style-type: none"> give reasons for classifying plants and animals based on specific characteristics
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Spring 2	Plants	Plants	Plants	Electricity	Materials- Properties and Changes in Materials	Light
Concepts and skills taught:	<ul style="list-style-type: none"> Identify and name common wild and garden plants (including deciduous and evergreen) Identify and describe basic structure of a variety of common flowering plants 	<ul style="list-style-type: none"> Observe and describe how seeds and bulbs grow Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy 	<ul style="list-style-type: none"> Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers explore the requirements of plants for life and growth and how they vary from plant to plant investigate the way in which water is transported within plants explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal 	<ul style="list-style-type: none"> 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 whether or not a lamp lights in a simple series circuit recognise some common conductors and insulators, and associate metals with being good conductors 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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 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



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					<p>through filtering, sieving and evaporating</p> <ul style="list-style-type: none"> • 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. 	
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Summer 1	Light and Dark (Additional unit) Scientist: Neil Armstrong	Living things and their Habitats Scientist: Charles H Turner	Light Scientist: Ibn al-Haytham Alhazen	Living Things and their Habitats Scientist: Seirian Sumner	States of Matter/ Forces Scientists: Sir Isaac Newton	Electricity Scientists: Micheal Faraday



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Concepts and Skills taught	<ul style="list-style-type: none"> Investigate how your senses can help you see in the dark Identify sources of light Classify natural light and man-made light. Explain why certain sources of light are used (purpose) Compare different sources of light. Explain night and day Identify nocturnal animals observe reflections and explain why reflections happen. Investigate what objects light can travel through 	<ul style="list-style-type: none"> 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 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. 	<ul style="list-style-type: none"> 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 recognise that shadows are formed when the light from a light source is blocked by a solid object find patterns in the way that the size of shadows change 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> Materials and Forces Classifying separation techniques Dissolving and what affects the rate of dissolving Air resistance 	<ul style="list-style-type: none"> 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 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
Summer 2	Seasonal Changes	The Environment (Additional Unit)	Animals including humans	The Environment- Climate Change (Additional Unit)	Forces	Science of Sport (Additional Unit) Scientists: Martin Brock
Concepts and Skills taught:	<ul style="list-style-type: none"> observe changes across the 4 seasons observe and describe weather associated with the seasons and how day length varies 	<ul style="list-style-type: none"> Suggest ways in which waste can be reduced, reused and recycled understand why ice melts sort materials 	<ul style="list-style-type: none"> identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat identify that humans and some other animals have 	<ul style="list-style-type: none"> recognise that environments can change and that this can sometimes pose dangers to living things 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> Explore and identify uses and properties of synthetic materials Identify light and application Research sustainable sources of energy



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			skeletons and muscles for support, protection and movement		<ul style="list-style-type: none">recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect	
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