

St George's Central CE Primary School and Nursery

Long Term Plan for Science Nursery (2 – 3 year olds)

	Throughout the year, the children will learn about the world around them. Opportunities for developing curiosity and their knowledge and sense of the world will be provided through, following children's interests, during in the moment planning and within some planned focused activities.					
Key Focus	Me, my family, familiar people	Simple celebrations	Weather and changes	Growing and change	Familiar people	Movement and transport
Key Learning	Look at photos of self and family Talk about who is in my family Learn names of familiar adults Forest School	Explore lights, sounds, colours Make Christmas decorations Forest School	Feel cold/warm weather Explore ice and water Talk about what we see outside Explore winter animals Forest School	Look at baby photos Talk about 'baby' and 'now' Plant seeds and watch them grow Notice baby animals Use words: grow, change, baby Forest School	Notice what we see outside Forest School	Car wash role play Explore moving objects Notice what we see outside Forest School
EYFS Statements	<u>Communication and Language</u> - Understand single words in context – 'cup', 'milk', 'daddy' - Recognise and point to objects if asked about them. - Identify familiar objects and properties for practitioners when they are described: for example: 'Katie's coat', 'blue car', 'shiny apple'. - Understand simple questions about 'who', 'what' and 'where' (but generally not 'why'). <u>Personal, Social and Emotional Development</u> - Notice and ask questions about differences, such as skin colour, types of hair, gender, special needs and disabilities, religion and so on. <u>Understanding the World</u> - Explore and respond to different natural phenomena in their setting and on trips e.g. talk about weather, seeing spring daffodils/cherry blossom, standing in the rain with wellies and umbrellas, splashing in puddles, walking through tall grass, looking for worms and minibeasts, handling minibeasts carefully, planting, watering and looking after plants after they have grown from seeds. - Explore materials with different properties. - Explore natural materials, indoors and outside.					

'Never settle for less than your best'

**Pupils might
work
scientifically
by:**

- Children are encouraged to explore developing their curiosity.
- Learn to repeat actions that have an effect.

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Long Term Plan for Science Nursery (3 – 4 year olds)

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Key Questions	What makes me special?	What is there to celebrate?	Why is it cold?	What new life can I see?	What can I be when I grow up?	What journeys will I go on?
Key Learning	Seasonal changes Harvest Getting to know themselves Learning about their family	Seasonal changes Harvest	Seasonal changes Weather changes Natural ice exploration Winter animals	Seasonal changes Comparing being a baby to now Baby animals New plants Spring changes	Seasonal changes Exploring the natural world	Seasonal changes Journey of water Exploring floating and sinking
EYFS Statements	<u>Communication and Language</u> - Understand 'why' questions, like: "Why do you think the caterpillar got so large?" <u>Personal, Social and Emotional Development</u> - Make healthy choices about food, drink, activity and toothbrushing. <u>Understanding the World</u> - Use all their senses in hands-on exploration of natural materials. - Explore collections of materials with similar and/or different properties. - Talk about what they see, using a wide vocabulary. - Begin to make sense of their own life-story and family's history. - Explore how things work. - 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. - Explore and talk about different forces they can feel. - Talk about the differences between materials and changes they notice.					

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**Pupils
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by:**

- Learn to use all their senses in hands-on exploration.
- Learn to talk about what they can see, hear, feel, taste using a growing scientific vocabulary.
- Explore how things work.

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Long Term Plan for Science

Reception

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Key Questions	What is it like where I live?	What is there to celebrate?	What lives in cold and hot places?	What makes a story magical?	What do living things become?	Why is blue planet amazing?
Key Learning	Getting to know themselves Comparing themselves and families Comparing where they live Learning about Tyldesley community Journey to school	Autumn Celebrations: Diwali Bonfire Night Remembrance Sunday Christmas and how Christmas is celebrated in other countries Autumnal changes	Learn about animal characteristics Learning about range of animals (pets, farm, zoo and wild etc) Comparing hot and cold countries Lunar New Year Winter changes	Spring changes	Learning about own lifecycle Lifecycles of a butterfly Comparing lifecycles of animals that hatch from an egg Spring changes	Learning about animals that live in the ocean Comparing land and water animals Learning about pollution Exploring capacity with water Summer changes
EYFS Statements	<u>Communication and Language</u> - Learn new vocabulary. - Ask questions to find out more and to check what has been said to them. - Articulate their ideas and thoughts in well-formed sentences. - Describe events in some detail. - Use talk to help work out problems and organise thinking and activities, and to explain how things work and why they might happen. - Use new vocabulary in different contexts. <u>Personal, Social and Emotional Development</u> - Know and talk about the different factors that support their overall health and wellbeing: -regular physical activity -healthy eating -toothbrushing -sensible amounts of 'screen time' -having a good sleep routine -being a safe pedestrian					

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	<u>Understanding the World</u> - Explore the natural world around them and talk about and compare materials. - Describe what they see, hear and feel while they are outside. - Recognise some environments that are different to the one in which they live. - Understand the effect of changing seasons on the natural world around them – summer turning to autumn.	<u>Understanding the World</u> - Explore the natural world around them and talk about and compare materials e.g. changes in leaves. - Describe what they see, hear and feel while they are outside e.g. crunchy or soft leaves. - Understand the effect of changing seasons on the natural world around them – autumn turning to winter.	<u>Understanding the World</u> - Explore the natural world around them e.g. exploring different ways to melt ice outdoors. - Describe what they see, hear and feel while they are outside e.g. winter effects on the environment - Recognise some environments that are different to the one in which they live, including learning about different animals that live in different environments (farm, zoo, wild etc) - Understand the effect of changing seasons on the natural world around them – winter changes.	<u>Understanding the World</u> - Explore the natural world around them including close observation of plants, naming some flowers and some parts of a flower. - Explore the natural world around them, including bird spotting. - Understand the effect of changing seasons on the natural world around them – winter turning to spring.	<u>Understanding the World</u> - Explore the natural world around them e.g. lifecycles of humans, discovering the lifecycle of a butterfly, observation of plants, naming some flowers and some parts of a flower. - Describe what they see, hear and feel while they are outside e.g. observational drawings of plants and animals in the environment. - Understand the effect of changing seasons on the natural world around them – spring turning to summer.	<u>Understanding the World</u> - Explore the natural world around them e.g. making natural water filters to make clean water, learning about a range of sea creatures, exploring floating, sinking and capacity. - Describe what they see, hear and feel while they are outside. - Recognise some environments that are different to the one in which they live e.g. features of the sea and ocean habitats. - Understand the effect of changing seasons on the natural world around them.
ELG	<u>Communication and Language – Listening, Attention and Understanding</u> - Make comments about what they have heard and ask questions to clarify their understanding. <u>Personal, Social and Emotional Development – Managing Self</u> - Manage their own basic hygiene and personal needs, including dressing, going to the toilet and understanding the importance of healthy food choices. <u>Understanding the World – The Natural World</u> - Explore the natural world around them, making observations and drawing pictures of animals and plants. - 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. - Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.					
Pupils might work scientifically by:	- Observe, interact with and comment on natural processes. - Describe what they can see, what they are doing and what they understand. - Begin to record their findings in a simple way.					

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Long Term Plan for Science Year 1 and Year 2

2026 – 2027						
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Key Questions	What plants and animals live in our local environment?	Which body parts help us to see, smell, hear, taste and touch?	What different materials are objects made from?	How do seeds and bulbs grow?		How does the weather change through the seasons?
Key Learning	Identifying plants and animals	The five senses	Properties of materials	Healthy plants		Weather in different seasons
Narional Curriculum objectives	- 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.	Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.	- 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 material. - Compare and group together a variety of everyday materials on the basis of their simple physical properties.	- Observe and describe how seeds and bulbs grow into mature plants. - Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.		- Observe changes across the four seasons. - Observe and describe weather associated with the seasons and how day length varies.

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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.	• Using their senses to compare different textures, sounds and smells.	• 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. • Pupils might find out about people who have developed useful new materials, for example John Dunlop, Charles Macintosh or John McAdam.	• Observing and recording, with some accuracy, the growth of a variety of plants as they change over time from a seed or bulb. Observing similar plants at different stages of growth; setting up a comparative test to show that plants need light and water to stay healthy.	• 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
Working scientifically across all topics	• Asking simple questions and recognising that they can be answered in different ways. • Observing closely, using simple equipment. • Performing simple tests. • Identifying and classifying. Using their observations and ideas to suggest answers to questions. • Gathering and recording data to help in answering questions.				

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Long Term Plan for Science Year 1 and Year 2

2027 – 2028						
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Key Questions	What different groups do animals belong to?	What material is best for.....?	What do we need to grow and stay healthy?		How do plants and animals obtain their food?	Why do some objects float?
Key Learning	Identify and describe common animals	Comparing and suitability of materials	Ways to keep our bodies healthy		Habitats and food chains	Floating and sinking
Narional Curriculum objectives	- 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 and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and 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.	- 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.		- 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	- The density of an object determines whether it will float or sink in another substance. - An object will float if it is less dense than the liquid it is placed in. - An object will sink if it is more dense than the liquid it is placed in.

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				plants and other animals, using the idea of a simple food chain, and identify and name different sources of food.	
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.	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?'	- 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.	- 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 for example: 'Is a flame alive? Is a deciduous tree dead in winter?' - They could construct a simple food chain that includes humans (e.g. grass, cow, human). They could describe the conditions in different habitats and micro-habitats (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.	- Making predictions and observing which objects float and sink. - Making comparisons between objects that float and sink.
Working scientifically across all topics	- Asking simple questions and recognising that they can be answered in different ways. - Observing closely, using simple equipment. - Performing simple tests. - Identifying and classifying. Using their observations and ideas to suggest answers to questions. - Gathering and recording data to help in answering questions.				

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Long Term Plan for Science Year 3 and Year 4

2026 – 2027						
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Key Questions	Why do we need a skeleton?	What are the components of a simple circuit?	What are the functions of the parts of a flower?		How can animals be classified in our local and wider environment?	How are shadows formed?
Key Learning	Function of a skeleton	Recognise and make simple circuits	Life cycles of flowering plants		Identify and group living things	Shadows
National Curriculum objectives	Identify that humans and some other animals have skeletons and muscles for support, protection and movement.	- 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.	- 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 (air, light, water, nutrients from soil, and room to grow) 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.		- 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. - Construct and interpret a variety of food chains, identifying producers, predators and prey.	- 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 an opaque object. - Find patterns in the way that the size of shadows change.

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		Recognise some common conductors and insulators, and associate metals with being good conductors.			
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.	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.	- 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.	- 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.	Looking for patterns in what happens to shadows when the light source moves or the distance between the light source and the object changes.
Working scientifically across all topics	- Asking relevant questions and using different types of scientific enquiries to answer them. - Setting up simple practical enquiries, comparative and fair tests. - Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. - Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions. - Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables. - Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. - Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions. - Identifying differences, similarities or changes related to simple scientific ideas and processes. - Using straightforward scientific evidence to answer questions or to support their findings.				

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Long Term Plan for Science Year 3 and Year 4

2027 – 2028						
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Key Questions	Will we ever see the food we eat again?	Is it a solid, a liquid or a gas?	How are rocks formed?	Which materials are attracted to a magnet?	What does a healthy diet look like?	How does sound travel?
Key Learning	Digestive system	Water cycle	Rocks and fossils	Magnetic and non-magnetic materials	Nutrition	Pitch and volume of sounds
National Curriculum objectives	- 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.	- 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 associate the rate of evaporation with temperature.	- 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.	- Compare how things move on different surfaces. - Notice that some forces need contact between two objects, but magnetic forces can act at a distance. - 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 two poles.	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 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.

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				Predict whether two magnets will attract or repel each other, depending on which poles are facing.		
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. - Draw and discuss their ideas about the digestive system and compare them with models or images.	- 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). - Research the temperature at which materials change state, for example, when iron melts or when oxygen condenses into a liquid. - 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.	- 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. - Research and discuss the different kinds of living things whose fossils are found in sedimentary rock and explore how fossils are formed. - 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. - Raise and answer questions about the way soils are formed.	- 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 properties make magnets useful in everyday items and suggesting creative uses for different magnets.	- 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.	- Finding patterns in the sounds that are made by different objects such as saucepan lids of different sizes or elastic bands of different thicknesses. - Make earmuffs from a variety of different materials to investigate which provides the best insulation against sound. - Make and play their own instruments by using what they have found out about pitch and volume.

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Working scientifically across all topics	• Asking relevant questions and using different types of scientific enquiries to answer them. • Setting up simple practical enquiries, comparative and fair tests. • Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. • Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions. • Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables. • Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. • Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions. • Identifying differences, similarities or changes related to simple scientific ideas and processes. • Using straightforward scientific evidence to answer questions or to support their findings.
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Long Term Plan for Science Year 5 and Year 6

2026 – 2027						
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Key Questions	What is the effect of changing a component in a circuit?	Can we separate a mixture of solids, liquids and gases?	How does light travel?	How do plants and animals reproduce?	How do plants and animals adapt to survive?	
Key Learning	Components of circuits	Filtering, sieving and evaporation	How objects are seen	Reproduction in plants and animals	Adaptation of plants and animals to suit their environment	
National Curriculum objectives	- 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.	- Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including filtering, sieving and evaporating. - Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution.	- 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.	- 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. - Describe the changes as humans develop to old age.	- 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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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.	• 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.	• 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. • Investigate the relationship between light sources, objects and shadows by using shadow puppets. • 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).	• 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. • Grow new plants from different parts of the parent plant, for example, seeds, stem and root cuttings, tubers, bulbs. • Observe changes in an animal over a period of time (for example, by hatching and rearing chicks), comparing how different animals reproduce and grow. • 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.	• Find out about the work of palaeontologists such as Mary Anning and about how Charles Darwin and Alfred Wallace developed their ideas on evolution. • 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. • Analyse the advantages and disadvantages of specific adaptations, such as being on two feet rather than four, having a long or a short beak, having gills or lungs, tendrils on climbing plants, brightly coloured and scented flowers.
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Working scientifically across all topics	• 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 comparative and fair tests. • Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations. • Identifying scientific evidence that has been used to support or refute ideas or arguments.
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Long Term Plan for Science Year 5 and Year 6

2027 – 2028						
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Key Questions	Who is Carl Linnaeus?	How do chemists create new materials?	How do forces effect how objects fall?	Which everyday objects use magnets?	Why do we have day and night?	How does diet, drugs, exercise and lifestyle impact on our bodies?
Key Learning	Classification keys	Reversible and irreversible changes	Gravity, friction and air resistance	Objects that use magnets in everyday life	Phases of moon, day and night	Diet, drugs and exercise
Narional Curriculum objectives	- 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. - Give reasons for classifying plants and animals based on specific characteristics.	- 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. - 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.	- 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.	- 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 two poles. - Predict whether two magnets will attract or repel each other, depending on which poles are facing. - Identify everyday objects that use magnets and their purpose.	- 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.	- 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.

'Never settle for less than your best'

Pupils might work scientifically by:	• Using classification systems and keys to identify some animals and plants in the immediate environment. • Research unfamiliar animals and plants from a broad range of other habitats and decide where they belong in the classification system. • Find out about the significance of the work of scientists such as Carl Linnaeus, a pioneer of classification.	• Observe and compare the changes that take place, for example, when burning different materials or baking bread or cakes. • 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. • Demonstrate that dissolving, mixing and changes of state are reversible changes. • Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic.	• Exploring falling paper cones or cup-cake cases, and designing and making a variety of parachutes and carrying out fair tests to determine which designs are the most effective. • Explore resistance in water by making and testing boats of different shapes. • Design and make products that use levers, pulleys, gears and/or springs and explore their effects.	• 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 properties make magnets useful in everyday items and suggesting creative uses for different magnets.	• 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.	• Exploring the work of scientists and scientific research about the relationship between diet, exercise, drugs, lifestyle and health.
Working scientifically across all topics	• 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 comparative and fair tests. • Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations. • Identifying scientific evidence that has been used to support or refute ideas or arguments.					

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Jesus said, 'I am the light of the world. Whoever follows Me will not walk in darkness, but will have the light of life.' John 8:12