GLORY FARM PRIMARY SCHOOL

Science - LONG TERM PLAN

	Autumn Term	Spring Term	Summer Term
Working Scientifically KS1	**Pupils will be taught to use the following practical scientific methods, processes and skills:** ● asking simple questions and recognising that they can be answered in different ways ● observing closely, using simple equipment and measurement ● performing simple tests ● identifying and classifying ● using their observations and ideas to suggest answers to questions ● gathering, recording and communicating data and findings to help in answering questions ● use scientific language and read and spell age-appropriate scientific vocabulary ● begin to notice patterns and relationships		
Year 1	**Our Changing World:** **Plants** ● 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 **Animals, including humans** ● Identify and name a variety of common animals, including fish, amphibians, reptiles, birds and mammals **Seasonal change (continued throughout the year)** ● Use their observations to describe how plants, including trees, change each season ● Use their observations to describe how the weather and day length change over the seasons		
	Everyday Materials: **Everyday Materials** ● Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water and rock	**Looking at animals:** **Animals, including humans** ● Identify and name a variety of common animals, including fish, amphibians, reptiles, birds and mammals	**Plant detectives:** ● Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees ● Identify and describe the basic structure

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	Using our Senses: **Animals, including humans** ● Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense	● Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets) **Everyday materials:** **Everyday Materials** ● Distinguish between an object and the material from which it is made ● 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	of a variety of common flowering plants, including trees **Looking at animals:** **Animals, including humans** ● Identify and name a variety of common animals that are carnivores, herbivores and omnivores
Year 2	**Our Changing World:** **Living things and their 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 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 **Animals including humans** ● Notice that animals, including humans, have offspring which grow into adults **Plants** ● 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		

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	What is in your habitat?: **Living things and their 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 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. ● 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. **Materials: Good Choices:** **Uses of everyday materials** ● Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses	**Materials: Shaping up:** **Uses of everyday materials** ● 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 the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching **The apprentice gardener:** **Plants** ● 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	**Growing up:** **Animals including humans** ● 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) **Take Care:** **Animals including humans** ● Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene **The apprentice gardener:** **Plants** ● 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

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<table>
<tr><td>Working Scientifically LKS2</td><td colspan="3">Pupils will be taught to use the following practical scientific methods, processes and skills:
● Making decisions, 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 using notes and simple tables
● 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, using relevant scientific language, 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, patterns, similarities or changes related to simple scientific ideas and processes
● Using straightforward scientific evidence to answer questions or to support their findings
● Begin to look for naturally occurring patterns and relationships
● Recognise when and how secondary sources might help them to answer questions that cannot be answered through practical investigations</td></tr>
<tr><td></td><td colspan="3"><u>Our Changing World:</u>
Plants
● 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
● Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal</td></tr>
<tr><td></td><td><u>Amazing bodies:</u>
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</td><td><u>The power of forces:</u>
Forces and magnets
● Compare how things move on different surfaces
● Notice that some forces need contact between two objects, but magnetic forces can act at a</td><td><u>How does your garden grow?:</u>
Plants
● Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers
● Explore the part that flowers play in the</td></tr>
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	eat ● Identify that humans and some other animals have skeletons and muscles for support, protection and movement **Can you see me?:** **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 ● 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	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 Predict whether two magnets will attract or repel each other, depending on which poles are facing **How does your garden grow?:** **Plants** ● Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers ● Investigate the way in which water is transported within plants	life cycle of flowering plants, including pollination, seed formation and seed dispersal **Rock Detectives:** **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 rocks and organic matter
Year 4	**Our Changing World:** **Living things and their habitats** ● Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment		
	Where does all the food go?: **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	**In a state:** **States of matter** ● Explore a variety of everyday materials and develop simple descriptions of the states of matter ● Compare and group materials together, according to whether they are solids, liquids or	**Where does all the food go & Who am I:** **Living things and their habitats** ● Recognise that living things (including those in the locality) can be grouped in a variety of ways ● Explore and use classification keys to help group, identify and name a

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	Good vibrations: **Sound** ● Identify how sounds are made, associating some of them with something vibrating ● Recognise that vibrations from sound travel through a medium to the ear ● Find patterns between 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	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 ● Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature **Switched on:** **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 whether or not a lamp lights in a simple series circuit ● Recognise some common conductors and insulators, and associate metals with good conductors	variety of living things in their local and wider environment ● **Animals, including humans** ● Construct and interpret a variety of food chains, identifying producers, predators and prey **Human Impact & In a state:** **Living things and their habitats** ● Recognise that environments can change and that this can sometimes pose dangers to living things ● Explore examples of human impact (both positive and negative) on environments, for example, the positive effects of nature reserves, ecologically planned parks, or garden ponds, and the negative effects of population and development, litter or deforestation **States of matter** ● Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature
Working Scientifically	**Upper Key Stage 2 pupils will be taught to use the following practical scientific methods, processes and skills:** ● Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary		

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<tr><td>UKS2</td><td colspan="3">

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
Explore and talk about their ideas; asking their own questions about scientific phenomena; and analysing functions, relationships and interactions more systematically
Recognise that scientific ideas change and develop over time
Draw conclusions based on their data and observations, use evidence to justify their ideas and use their scientific knowledge and understanding to explain their findings
Pupils should read, spell and pronounce scientific vocabulary correctly

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<tr><td>Year 5</td><td colspan="3">
<u>Our Changing World:</u>
Living things and their environment

Describe the life process of reproduction in some plants and animals

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<u>The Earth and Beyond:</u>
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

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<u>Feel the Force:</u>
Forces

Explain that unsupported objects fall toward 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

</td><td>
<u>Reproduction in plants and animals:</u>
Living things and their environment

Describe the life process of reproduction in some plants and animals

Animals – including humans

Describe the changes as humans develop to old age

<u>Marvellous mixtures & Materials: All</u>
</td></tr>
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	Get Stored & Everyday Materials: **Properties of materials** ● Compare and group together everyday materials on the basis of properties including hardness, solubility, transparency and conductivity (electrical and thermal) and response to magnets ● Give reasons based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic	levers, pulley and gears, allow a smaller force to have a greater effect **Circle of Life & Reproduction in plants and animals:** **Living things and their environment** ● 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	**change:** **Properties of materials** ● 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 filtering, sieving and evaporating ● 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 6	**Our Changing World:** **Living things and habitats** ● 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 **Evolution and inheritance** ● 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		
	Body pump: **Animals, including humans** ● Identify and name the main parts of the human circulatory system, and describe the	**Danger low voltage:** **Electricity** ● Associate the brightness of a lamp or the volume of a buzzer with the number and	**Body health:** **Animals, including humans** ● Recognise the impact of diet, exercise, drugs and lifestyle on the way their

	functions of the heart, blood vessels and blood ● Describe the ways in which nutrients and water are transported within animals, including humans **Light up your world:** **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 the 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	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 **Everything changes:** **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 ● 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 ● Find out about the work of palaeontologists such as Mary Anning and about how Charles Darwin developed his ideas on evolution	bodies function **Nature library:** **Living things and habitats** ● 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