Leverstock Green CE (VC) Primary School

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Subject	**Science**					
Subject Leader	**Miss Conyard**					
Year group	**Autumn 1**	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
Nursery	Animals focus on humans Senses Body parts Growth from baby to toddler, child. adult Sc1 **Gathering and recording data** **Identify and classify** **Observing** **Questioning** **Using simple equipment** **Fair testing** **Performing simple test** Talk about what they see, using a wide vocabulary. 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.	Light Exploring light and colour – effects of light, absence of light etc. Using mirrors – exploring reflection Sc1 **Gathering and recording data** **Identify and classify** **Observing** **Questioning** **Using simple equipment** **Fair testing** **Performing simple test** Talk about what they see, using a wide vocabulary. Explore how things work.	Materials Exploration of materials ie the three little pigs Sc1 **Gathering and recording data** **Identify and classify** **Observing** **Questioning** **Using simple equipment** **Fair testing** **Performing simple test** 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. Explore how things work. Explore and talk about different forces they can feel. Talk about the differences between materials and changes they notice.	Plants Life cycles and Growth Planting seeds Sc1 **Gathering and recording data** **Identify and classify** **Observing** **Questioning** **Using simple equipment** **Fair testing** **Performing simple test** 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. 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.	Materials Exploration of materials Sc1 **Gathering and recording data** **Identify and classify** **Observing** **Questioning** **Using simple equipment** **Fair testing** **Performing simple test** 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. Explore how things work. Explore and talk about different forces they can feel. Talk about the differences between materials and changes they notice.	Materials Exploration of materials Sc1 **Gathering and recording data** **Identify and classify** **Observing** **Questioning** **Using simple equipment** **Fair testing** **Performing simple test** 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. Explore how things work. Explore and talk about different forces they can feel. Talk about the differences between materials and changes they notice.

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Reception	Animals focus on humans Senses Body parts Growth from baby to toddler, child. adult Sc1 **Gathering and recording data** **Identify and classify** **Observing** **Questioning** **Using simple equipment** **Fair testing** **Performing simple test** Explore the natural world around them. Describe what they see, hear and feel whilst outside. Understand the effect of changing seasons on the natural world around them. **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**	Light Exploring light and colour – effects of light, absence of light etc. Using mirrors – exploring reflection Sc1 **Gathering and recording data** **Identify and classify** **Observing** **Questioning** **Using simple equipment** **Fair testing** **Performing simple test** Explore the natural world around them. Describe what they see, hear and feel whilst 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. **Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.**	Materials Exploration of materials ie the three little pigs Sc1 **Gathering and recording data** **Identify and classify** **Observing** **Questioning** **Using simple equipment** **Fair testing** **Performing simple test** Explore the natural world around them. Describe what they see, hear and feel whilst 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. **Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.**	Plants Life cycles and Growth Planting seeds Sc1 **Gathering and recording data** **Identify and classify** **Observing** **Questioning** **Using simple equipment** **Fair testing** **Performing simple test** Explore the natural world around them. Describe what they see, hear and feel whilst 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. **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.**	Materials Exploration of materials Sc1 **Gathering and recording data** **Identify and classify** **Observing** **Questioning** **Using simple equipment** **Fair testing** **Performing simple test** Explore the natural world around them. Describe what they see, hear and feel whilst 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. **Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.**	Materials Exploration of materials Sc1 **Gathering and recording data** **Identify and classify** **Observing** **Questioning** **Using simple equipment** **Fair testing** **Performing simple test** Explore the natural world around them. Describe what they see, hear and feel whilst 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. **Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.**

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Year 1	**Seasonal changes** - Introduced this half term and then additional session throughout the year to observe changes. ♣ observe changes across the 4 seasons ♣ observe and describe weather associated with the seasons and how day length varies Sc1 **Identify and classify** **Observing** **Questioning** **Using simple equipment** Predictions Fair testing Performing simple test Pupils might work scientifically by: 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.	**Animals including humans** minimum 5 sessions this half term. ♣ identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. Sc1 **Observing** **Questioning** **Gathering and recording data** Using simple Equipment Fair testing Performing simple test **Exercise using tally charts and graphs** **What we want to know** **Eyes tight shut** 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; and using their senses to compare	**Animals including humans** continued minimum 5 sessions this half term. ♣ 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) Sc1 **Observing** **Questioning** **Gathering and recording data** Using simple Equipment Fair testing Performing simple test	**Plants** minimum 5 sessions this half term. ♣ 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. Sc1 **Gathering and recording data** **Identify and classify** **Observing** **Questioning** **Using simple equipment** **Fair testing** **Performing simple test**	**Materials** minimum 5 sessions this half term. ♣ 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. Sc1 **Identify and classify** **Observing** **Questioning** **Using simple equipment** Predictions Fair testing Performing simple test **Guess what** **Identifying materials around schools**	**Materials continued** minimum 5 sessions this half term.

		different textures, sounds and smells.				

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Year 2	**Materials** minimum 5 sessions this half term. ♣ 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. Sc1 **Using simple equipment** **Fair testing** **Performing simple test** **Predictions** **Observing** Identify and classify Questioning **Investigate which materials stretch, squash** **Investigating which materials are waterproof** **Magic materials and super structures** Pupils might work scientifically by: 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.	**Materials continued** minimum 5 sessions this half term.	**Animals focus on humans** minimum 5 sessions this half term. ♣ 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. Sc1 **Observing** **Questioning** **Gathering and recording data** Using simple Equipment Fair testing Performing simple test **Exercise using tally charts and graphs** **What we want to know** **Eyes tight shut** Pupils might work scientifically by: 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.	**Habitats** minimum 5 sessions this half term. ♣ 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. Sc1 **Gathering and recording data** **Identify and classify** **Observing** **Questioning** **Using simple equipment** **Fair testing** **Performing simple test** **How many different plants in one small space** **Bar charts and tally graphs** Pupils might work scientifically by: 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 like: 'Is a flame alive? Is a deciduous tree dead in winter?' and talk about ways of answering their questions. They could construct a simple food chain that includes humans (eg, grass, cow, human). They could describe the conditions in different habitats and microhabitats (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.	**Habitats continued** minimum 5 sessions this half term.	**Plants** – you may wish to start planting before half term in Summer 1 for full affect. minimum 5 sessions this half term. ♣ 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 health Sc1 **Gathering and recording data** **Identify and classify** **Observing** **Questioning** **Using simple equipment** **Fair testing** **Performing simple test** **Investigate which plants grow in dark light with and without water** Pupils might work scientifically by: observing and recording, with some accuracy, the growth of a variety of plants as they change over time from a seed or bulb, or observing similar plants at different stages of growth; setting up a comparative test to show that plants need light and water to stay healthy.

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Year 3	**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, protection and movement identifying differences, similarities or changes related to simple scientific ideas and processes using straightforward scientific evidence to answer questions or to support their findings.	**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 asking relevant questions and using different types of scientific enquiries to answer them setting up simple practical enquiries, comparative and fair tests recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables using straightforward scientific evidence to answer questions or to support their findings.	**Magnets** compare how things move on different surfaces 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 notice that some forces need contact between two objects, but magnetic forces can act at a distance describe magnets as having two poles predict whether two magnets will attract or repel each other, depending on which poles are facing asking relevant questions and using different types of scientific enquiries to answer them setting up simple practical enquiries, comparative and fair tests	**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 making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers	**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 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 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 identifying differences, similarities or changes related to simple scientific ideas and processes Flowers with coloured water experiment – which colour will be drunk and seen through the stem first – can you explain why?,	**Plants cont…**

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Year 4	**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 the 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 identifying differences, similarities or changes related to simple scientific ideas and processes using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables Make and test different materials in a circuit to see if they are conductors or insulators	**Electricity continued**	**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 strengths of the vibrations that produced it recognise that sounds get fainter as the distance from the sound source increases asking relevant questions and using different types of scientific enquiries to answer them setting up simple practical enquiries, comparative and fair tests recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables Sound of different instruments (pitch and volume) – elastic bands stretched and rulers (short and long) on table	**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 associate the rate of evaporation with temperature asking relevant questions and using different types of scientific enquiries to answer them identifying differences, similarities or changes related to simple scientific ideas and processes using straightforward scientific evidence to answer questions or to support their findings. Ice observation over time linked to states of matter – will it freeze again if left stuck in a plastic bag to the window? Link to seasons.	**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 gathering, recording, classifying and presenting data in a variety of ways to help in answering questions reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions Observational experiment in Paddy's Patch. (Hoop in an area of Paddy's patch, what different living things are in the hoop?)	**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 gathering, recording, classifying and presenting data in a variety of ways to help in answering questions reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions

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Year 5	**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. identifying scientific evidence that has been used to support or refute ideas or arguments planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary 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 Investigate phases of the moon	**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. identifying scientific evidence that has been used to support or refute ideas or arguments taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate using test results to make predictions to set up further comparative and fair tests Investigate air resistance. Investigate link between grams and newtons.	**Properties and changes of material** Compare and group together a variety of everyday materials on the basis of their simple physical 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 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. planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary using test results to make predictions to set up further comparative and fair tests 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 Demonstrate through investigation that dissolving, mixing and changes of state are reversible changes, including a sugar cube investigation.	**Properties and changes of materials continued…**	**Living Things and 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. 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 Examine and investigate parts of a plant	**Animals including humans** describe the changes as humans develop to old age Pupils could work scientifically by 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.

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Year 6	Living things	Animals Including Humans	Light	Electricity	Evolution & Inheritance	Investigation
	describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals give reasons for classifying plants and animals based on specific characteristics. using simple models to describe scientific ideas reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of 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.	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. 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 recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, and bar and line graphs using test results to make	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 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 recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, and bar and line graphs using test results to make predictions to set up further comparative and fair tests using simple models to describe scientific ideas reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of results, in oral and written forms such as displays and other presentations	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. 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	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. 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 recording data and results	Discuss with children about what they would like to investigate further. Support the children in developing their skills in planning, completing and evaluating experiments – Suggest using developing scientist book for ideas.

		predictions to set up further comparative and fair tests using simple models to describe scientific ideas reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of 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.	identifying scientific evidence that has been used to support or refute ideas or arguments.	accuracy and precision recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, and bar and line graphs using test results to make predictions to set up further comparative and fair tests using simple models to describe scientific ideas reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of 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.	of increasing complexity using scientific diagrams and labels, classification keys, tables, and bar and line graphs using test results to make predictions to set up further comparative and fair tests using simple models to describe scientific ideas reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of 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.	