**Green Lane Church of England Primary School**

Subject Learning Plan

Year 1 Science

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| **Topic** | Term 1 Knowledge based learning Objectives | Term 2 Knowledge based learning Objectives | Term Knowledge based learning Objectives |
| **Animals**  **/humans** | To identify and name a variety of common animals including, fish, amphibians, reptiles, birds and mammals.  To identify and name a variety of common animals that are carnivores, herbivores and omnivores.  To describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets).  To identify, name, draw and label the basic parts of the human body.  To know and say which part of the body is associated with each sense. |  |  |
| **Everyday Materials** |  | To distinguish between an object and the material from which it is made.  To identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock.  To describe the simple physical properties of a variety of everyday materials.  To compare and group together a variety of everyday materials on the basis of their simple physical properties.  To investigate which materials is best suited to a given purpose e.g. a waterproof coat. |  |
| **Plants** |  | To identify and name a variety of common wild plants.  To identify and name a variety of common garden plants.  To identify and name a range of common deciduous and evergreen trees  To identify and describe the basic structure of a variety of common flowering plants, including trees.  To understand that we eat some plants as part of a healthy balanced diet.  To know it is dangerous to eat some plants.  To understand how important it is to protect their hands when working with plants and soil.  To understand the importance of good hand hygiene when working with plants and soil. |  |
| **Seasonal changes** |  |  | To know the seasons and be able to order them correctly.  To observe and comment on the changes between seasons.  To make suggestions as to how as humans we adapt to the changes in the seasons e.g. appropriate clothing  To observe and describe the weather associated with each of the seasons.  To know that the length of daylight hours varies depending on the season.  To know the names of the four seasons. |

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Subject Learning Plan

Year 2 Science

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| **Topic** | Term 1 Knowledge based learning Objectives | Term 2 Knowledge based learning Objectives | Term Knowledge based learning Objectives |
| **Animals including humans** | To notice that animals, including humans, have offspring which grow into adults  To sequence the life cycle of some animals and humans.  To find out about and describe the basic needs of animals.  To find out about and describe the needs of humans.  To investigate and make comparisons between the animals chosen and humans needs to survive.  To describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.  To investigate the life of  Charles Darwin. |  |  |
| **Use of Everyday Materials** |  | To identify a range of  everyday materials.  To describe the properties of a range of materials.  To use their knowledge to make predictions about which material is most suitable for a purpose.  To investigate and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for different uses  To record results using a range of methods.  To evaluate their predictions following testing.  To compare how things move on different surfaces.  To find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.  To investigate Charles Dunlop. |  |
| **Plants** |  |  | To observe and describe seeds/bulbs.  To investigate how seeds and bulbs grow into mature plants.  To find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.  To measure the growth of plants they have grown.  To investigate plants from different parts of the world. |
| **Living things and their habitats** |  |  | To explore and compare the differences between things that are living, dead, and things that have never been alive.  To 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  To identify and name a variety of plants and animals in their habitats, including microhabitats  To 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.  To understand the importance of pasteurisation discovered by Louis Pasteur. |

**Green Lane Church of England Primary School**

Subject Learning Plan

Year 3 Science

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| **Topic** | Term 1 Knowledge based learning Objectives | Term 2 Knowledge based learning Objectives | Term Knowledge based learning Objectives |
| Animals including humans | To identify and understand that animals, including humans, need the right types and amounts of nutrition.  To understand that animals, including humans they cannot make their own food.  To know that they get nutrition from what they eat.  To identify that humans and some other animals have skeletons.  To understand that muscles support our skeletons and allow us to move around.  To understand how our skeletons protect our organs.  To explain how muscles work to allow us to move about.  To study the life and work of Sir David Attenborough. |  |  |
| Rocks |  | To compare and group together different kinds of rocks on the basis of their appearance and simple physical properties.  To describe in simple terms how fossils are formed when things that have lived are trapped within rock.  To recognise that soils are made from rocks and organic matter.  To investigate the life and work of Inge Lehman. |  |
| Light |  | To recognise that we need light in order to see things and that dark is the absence of light  To understand and investigate how light travels in straight lines.  To investigate how light is reflected from some surfaces.  To recognise that light from the sun can be dangerous and that there are ways to protect their eyes.  To recognise that shadows are formed when the light from a light source is blocked by a solid object  To find patterns in the way that the size of shadows change. |  |
| Plants |  |  | To identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers.  To 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.  To investigate the way in which water is transported within plants.  To explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. |
| Forces and Magnets |  |  | To compare how things move on different surfaces  To notice that some forces need contact between 2 objects, but magnetic forces can act at a distance  To 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.  To describe magnets as having 2 poles and to understand that magnets create a magnetic field around themselves.  To predict whether 2 magnets will attract or repel each other, depending on which poles are facing o investigate Sir Isaac Newton’s work on gravity. |

**Green Lane Church of England Primary School**

Subject Learning Plan

Year 4 Science

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| **Topic** | Term 1 Knowledge based learning Objectives | Term 2 Knowledge based learning Objectives | Term Knowledge based learning Objectives |
| All living things | To recognise that living things can be grouped in a variety of ways.  To explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment.  To recognise that environments can change and that this can sometimes pose dangers to living things. |  |  |
| Animals including humans |  | To describe the simple functions of the basic parts of the digestive system in humans.  To identify the different types of teeth in humans and their simple functions  To construct and interpret a variety of food chains.  To, identify producers, predators and prey.  To investigate the studies of Jane Goodall. |  |
| Electricity |  | To identify common appliances that run on electricity  To construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers.  To 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.  To recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit.  To recognise some common conductors and insulators, and associate metals with being good conductors.  To investigate Thomas Edison. |  |
| States of matter |  |  | To compare and group materials together, according to whether they are solids, liquids or gases.  To 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).  To identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature. |
| Sound |  |  | To identify how sounds are made, associating some of them with something vibrating.  To recognise that vibrations from sounds travel through a medium to the ear.  To find patterns between the pitch of a sound and features of the object that produced it.  To find patterns between the volume of a sound and the strength of the vibrations that produced it.  To recognise that sounds get fainter as the distance from the sound source increases  To investigate Alexander Graham Bell. |

**Green Lane Church of England Primary School**

Subject Learning Plan

Year 5 Science

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| **Topic** | Term 1 Knowledge based learning Objectives | Term 2 Knowledge based learning Objectives | Term Knowledge based learning Objectives |
| **Living things and Habitats** | To describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird.  To describe the life process of reproduction in some plants and animals.  To investigate the habitat needs of mammals, amphibians, insects and birds.  To investigate how changes to the environment can affect a habitat and discuss the impact this could have on the animals living there. |  |  |
| **Animals including Humans** | To describe the changes as humans develop to old age.  To investigate Darwin’s theory regarding the evolution of man.  To investigate changes to Darwin’s theory. |  |  |
| **Properties of Materials** |  | To 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.  To know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution.  To use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating.  To give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic. To demonstrate that dissolving, mixing and changes of state are reversible changes. To 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. |  |
| **Forces** |  | To explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object. To identify the effects of air resistance, water resistance and friction, that act between moving surfaces. To recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect. |  |
| **Earth and Space** |  |  | To describe the movement of the Earth, and other planets, relative to the Sun in the solar system. To describe the movement of the Moon relative to the Earth. To describe the Sun, Earth and Moon as approximately spherical bodies.  To investigate the work of Copernicus. To use the idea of the Earth’s rotation to explain day and night, and the apparent movement of the sun across the sky. |

**Green Lane Church of England Primary School**

Subject Learning Plan

Year 6 Science

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| **Topic** | Term 1 Knowledge based learning Objectives | Term 2 Knowledge based learning Objectives | Term Knowledge based learning Objectives |
| Living things and their habitats | To 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.  To give reasons for classifying plants and animals based on specific characteristics.  To investigate the work of Dian Fossey. |  |  |
| Animals including humans | To identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood.  To recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function.  To describe the ways in which nutrients and water are transported within animals, including humans. |  |  |
| Evolution and Inheritance |  | To recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago.  To recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents.  To identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.  To investigate the life and work of Jacques Cousteau. |  |
| Light |  | To recognise and investigate that light travels appears to travel in straight lines. To 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. To 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. To use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them. |  |
| Electricity |  |  | To associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit.  To 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.  To use recognised symbols when representing a simple circuit in a diagram. |