William Gilpin CE VA Primary School

"Start small, think big…"

Science Curriculum Map

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 1 & 2	**Working scientifically** • 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					
Year 1 & 2 Cycle A	**Animals & 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 • 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 **Y1: Can label the basic parts of the human body.** **Y1: I recognise some ways that I can stay healthy.** **Y1: I know the five different senses.** **Y2: I can describe the importance of exercise, diet and hygiene to keep healthy.**		**Materials** • 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 **Y1: I can identify some similarities and differences between materials.** **Y1: I can use simple observations to answer questions.** **Y1: I am able to name and sort a variety of everyday materials.**	**Plants** **CROPS** ▪ 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 ▪ 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 **Y1: Can identify and describe the basic structure of plants, i.e. roots, stem, leaves and flower.** **Y1: I can observe and describe how seeds and bulbs grow into mature plants.** **Y2: Can make predictions about what will happen.** **Y2: I can identify that plants need water, light and a suitable temperature to stay healthy.**	**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 and name different sources of food **Y1: I can sort and compare living and non-living things.** **Y2: I can name a variety of animals and plants and their habitats.**
Year 1 & 2 Cycle B	**Animals & Humans** • 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)		**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	**Four Seasons** • observe changes across the 4 seasons • observe and describe weather associated with the seasons and how day length varies	**Plants** **FLOWERS** ▪ 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 ▪ observe and describe how seeds and bulbs grow into mature plants	

<table>
<tr><td></td><td>Y1: I can name a variety of common birds, fish, amphibians, reptiles and mammals.

Y2: I can explain what carnivores, herbivores and omnivores are.</td><td>▪ find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching

Y1: I recognise that you can collect evidence to try to answer a question.

Y1: I can test ideas that have been suggested to me.

Y1: I can identify some similarities and differences between materials.

Y2: I use observational evidence to investigate the properties of materials.

Y2: I know how some materials can be changed by squashing, bending, twisting and stretching.</td><td>Y1: I can make simple observations.

Y1: I recognise that you can collect evidence to try to answer a question.

Y1: Can gather simple data with adult support.

Y1: Can recognise the changes across the four seasons.

Y2: Can gather and record simple data.

Y2: Can describe weather and day length associated with the four seasons.

Y2: I recognise why it is important to collect evidence.</td><td>▪ find out and describe how plants need water, light and a suitable temperature to grow and stay healthy

Y1: I can identify and describe the basic structure of plants, i.e. roots, stem, leaves and flower.

Y1: I can observe and describe how seeds and bulbs grow into mature plants.

Y2: I can use my observations to begin to draw simple conclusions.

Y2: I can identify that plants need water, light and a suitable temperature to stay healthy.</td></tr>
<tr><td>Year 3 & 4</td><td colspan="4"><u>Working scientifically</u>
• 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.</td></tr>
<tr><td>Year 3 & 4
Cycle A</td><td><u>Living things and their habitats</u>
• 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

Can suggest explanations using scientific knowledge and understanding.</td><td><u>Animals, including humans</u>
• 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

Can identify different types of teeth in humans.</td><td><u>States of matter</u>
• 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</td><td><u>Sound</u>
• 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</td><td><u>Electricity</u>
• identify common appliances that run on electricity
• construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers
• identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery
• recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit
• recognise some common conductors and insulators, and associate metals with being good conductors

Can suggest explanations using scientific knowledge and understanding.

Recognises some common conductors and insulators.</td></tr>
</table>

<table>
<tr><td></td><td>Can use classification keys when assigning animals to different groups.

Recognises that changes in an environment can pose dangers to living things.</td><td></td><td>Can make systematic and accurate measurements.

Can present results in simple graphs and tables.

Can use a thermometer to take accurate measurements.

Can identify the part played by evaporation and condensation in the water cycle.</td><td>Can make systematic and accurate measurements.

Can find patterns between the volume of sound and the strength of the vibrations that produced it.

I know that most sounds are made by vibrations.</td><td colspan="2"></td></tr>
<tr><td>Year 3 & 4
Cycle B</td><td><u>Animals, including humans</u>
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
I know that humans have skeletons and muscles for protection and movement.

Understands that animals, including humans, get nutrition from what they eat.</td><td><u>Rocks</u>
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
Can suggest questions and ideas and how to test them.

Can compare and group different kinds of rocks based on their appearance and simple physical properties.

Can describe in simple terms how fossils are formed.</td><td><u>Light</u>
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
Can independently make predictions about what will happen, some of which are based on scientific knowledge.

Can present results using simple drawings and diagrams.

Consider what makes a test unfair.</td><td colspan="2"><u>Forces and magnets</u>
compare how things move on different surfaces
notice that some forces need contact between 2 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 2 poles
predict whether 2 magnets will attract or repel each other, depending on which poles are facing
Can choose and use simple equipment provided appropriately.

Can design a fair test with reasons.

Can predict whether two magnets will attract or repel.

Independently makes careful observations and measurements.

Understands that a magnetic force can act at a distance.</td><td><u>Plants</u>
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
Independently makes careful observations and measurements.

Can present results using simple drawings and diagrams.

Investigates the way in which water in transported within plants.

Consider what makes a test unfair.</td></tr>
<tr><td>Year 5 & 6</td><td colspan="5"><u>Working scientifically</u>
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 a 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</td></tr>
</table>

William Gilpin Church of England VA Primary School

<table>
<tr>
<td>Year 5 & 6
Cycle A</td>
<td><u>Living things and their habitats</u>
• 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

Can create classification keys when assigning animals to different groups.

Can select an appropriate way to record and present data.</td>
<td><u>Animals including humans</u>
• 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

Identify and name the main parts of the human circulatory system.

Explains the function of the heart, blood vessels and blood.</td>
<td><u>Evolution and inheritance</u>
• 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

Recognises that answering questions in science is about linking cause and effect.

Recognises that living things have evolved over time.</td>
<td><u>Light</u>
• 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

Can suggest ideas or questions that can be investigated scientifically.

Can interpret data and draw conclusions indicating whether these match any prediction made.

Understands that light appears to travel in straight lines.

Knows that we see objects when light travels from a source to the eye.</td>
<td colspan="2"><u>Electricity</u>
• 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

Can decide how to turn ideas into a form that can be tested

Uses test results to plan further comparative and fair tests.

Can use conventional symbols to accurately draw and make a circuit.

Associates the brightness of a lamp with the number and voltage of cells in the circuit.</td>
</tr>
<tr>
<td>Year 5 & 6
Cycle B</td>
<td><u>Earth and space</u>
• 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

Can recognise patterns in data and suggest explanations

Knows how we get day and night and how the Earth spins.</td>
<td><u>Forces</u>
• 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

Can select an appropriate way to record and present data.

Can present results in tables and charts of increasing complexity.</td>
<td colspan="2"><u>Properties and changes of materials</u>
• compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets
• know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution
• use knowledge of solids, liquids and gases to decide how mixtures might be separated, including 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

Can describe what happens when a solid dissolves in a liquid.</td>
<td><u>Living things and their habitats</u>
• 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

Describes the life process of reproduction in some plants and animals.

Explore the life cycle of flowering plants, including pollinations, seed formation and seed dispersal.</td>
<td><u>Animals, including humans</u>
• describe the changes as humans develop to old age

Can draw simple conclusions by interpreting data collected.</td>
</tr>
</table>

		Can explain how air resistance can slow moving objects. **Recognises that air resistance can slow moving objects.**	**Understand the ways in which materials can change.**		