



# Mary's Church of England Primary School



## Science Medium Term Plan 2022/2023

### NC Objectives – Year 1

#### **Plants**

Pupils should be taught to:

- 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**

Pupils should be taught to:

- 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, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense

#### **Everyday materials**

Pupils should be taught to:

- 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

#### **Seasonal changes**

Pupils should be taught to:

- observe changes across the 4 seasons
- observe and describe weather associated with the seasons and how day length varies

Year 1	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	<u>Who am I?</u> <ul style="list-style-type: none"> <li>• I can identify, name, draw and label the basic parts of the human body.</li> <li>• I can say which part of the body is associated with each sense.</li> <li>• I can say which part of the body is associated with each sense.</li> <li>• I can say which part of the body is associated with each sense.</li> <li>• I can say which part of the body is associated with each sense.</li> <li>• I can say which parts of the body is associated with each sense.</li> </ul>	<u>Celebrations</u> <ul style="list-style-type: none"> <li>• Say which part of the body is associated with each sense.</li> <li>• Distinguish between an object and the material from which it is made. Describe the simple physical properties of a variety of everyday materials.</li> <li>• Say which part of the body is associated with each sense.</li> <li>• Describe the simple properties of a variety of everyday materials.</li> <li>• Identify and describe the basic structure of a variety of common flowering plants.</li> <li>• Say which part of the body is</li> </ul>	<u>Polar Places</u> <ul style="list-style-type: none"> <li>• Describe the simple physical properties of a variety of everyday materials.</li> <li>• Describe the simple physical properties of a variety of everyday materials.</li> <li>• Compare and group together a variety of everyday materials on the basis of their simple properties.</li> <li>• Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals.</li> <li>• Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets).</li> <li>• Identify and name a variety of common</li> </ul>	<u>On Safari</u> <ul style="list-style-type: none"> <li>• Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals.</li> <li>• Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets).</li> </ul>	<u>Holiday</u> <ul style="list-style-type: none"> <li>• Distinguish between an object and the material from which it is made.</li> <li>• Compare and group together a variety of everyday materials on the basis of their simple physical properties.</li> <li>• Describe the simple physical properties of a variety of everyday materials.</li> <li>• Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals.</li> <li>• Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets).</li> <li>• Distinguish between an object and the</li> </ul>	<u>Plants and animals where we live</u> <ul style="list-style-type: none"> <li>• Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees.</li> <li>• Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals.</li> <li>• Identify and describe the basic structure of a variety of common flowering plants, including trees.</li> <li>• Identify and name a variety of common animals that are carnivores, herbivores and omnivores.</li> </ul>

		associated with each sense. Identify and describe the basic structure of a variety of common flowering plants.	animals that are carnivores, herbivores and omnivores. <ul style="list-style-type: none"> <li>Identify and name a variety of common animals that are carnivores, herbivores and omnivores.</li> <li>Identify and name a variety of common animals that are carnivores, herbivores and omnivores.</li> </ul>		material from which it is made. <ul style="list-style-type: none"> <li>Identify and name a variety of everyday materials including wood, plastic, glass, metal, water and rock.</li> </ul>	
<b>Working Scientifically</b>	<ul style="list-style-type: none"> <li>Observe closely, using simple equipment. Identify and classify.</li> <li>Gather and record data to help in answering questions.</li> </ul>	<ul style="list-style-type: none"> <li>Observe things using simple equipment. Identify and classify.</li> <li>Use observations and ideas to suggest answers to questions.</li> <li>Perform simple tests</li> <li>Identify and classify</li> </ul>	<ul style="list-style-type: none"> <li>Ask simple questions and recognise that they can be answered in different ways.</li> <li>Perform simple tests.</li> <li>Identify and classify.</li> <li>Use their observations and ideas to suggest answers to questions.</li> </ul>	<ul style="list-style-type: none"> <li>Observe closely, using simple equipment.</li> <li>Identify and classify.</li> <li>Ask simple questions and recognise that they can be answered in different ways.</li> </ul>	<ul style="list-style-type: none"> <li>Identify and classify.</li> <li>Observe closely, using simple equipment. Perform simple tests.</li> <li>Use observations and ideas to suggest answers to questions.</li> <li>Gather and record data to help in answering questions.</li> </ul>	<ul style="list-style-type: none"> <li>Observe closely, using simple equipment.</li> <li>Identify and classify.</li> <li>Use their observations and ideas to suggest answers to questions.</li> <li>Ask simple questions and recognise that they can be answered in different ways.</li> </ul>

## NC Objectives – Year 2

### Living things and their habitats

Pupils should be taught to:

- 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

## Plants

Pupils should be taught to:

- 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

## Animals, including humans

Pupils should be taught to:

- 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

## Uses of everyday materials

Pupils should be taught to:

- 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

Year 2	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	<b><u>Our Local Environment</u></b>	<b><u>Material Monster</u></b>	<b><u>Healthy Me</u></b>	<b><u>Little Masterchefs</u></b>	<b><u>Young Gardeners</u></b>	<b><u>Squash, Bend, Twist, Stretch</u></b>
	<ul style="list-style-type: none"> <li>• Identify that most living things live in</li> </ul>	<ul style="list-style-type: none"> <li>• Identify and compare the suitability of a</li> </ul>	<ul style="list-style-type: none"> <li>• Find out about and describe the basic needs of animals,</li> </ul>	<ul style="list-style-type: none"> <li>• Find out about, and describe the basic needs of animals,</li> </ul>	<ul style="list-style-type: none"> <li>• Identify and name a variety of plants and animals in their</li> </ul>	<ul style="list-style-type: none"> <li>• Find out how the shapes of solid</li> </ul>

	<p>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.</p> <ul style="list-style-type: none"> <li>• Identify and name a variety of plants and animals in their habitats, including micro-habitats.</li> <li>• Gather and record data to help in answering questions.</li> <li>• Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name the different sources of food.</li> </ul>	<p>variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.</p> <ul style="list-style-type: none"> <li>• Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.</li> </ul>	<p>including humans, for survival (water, food and air).</p> <ul style="list-style-type: none"> <li>• Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.</li> <li>• Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.</li> </ul>	<p>including humans, for survival (water, food and air).</p> <ul style="list-style-type: none"> <li>• Describe the importance for humans of exercise, eating the right amounts of different types of food and hygiene.</li> <li>• Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.</li> </ul>	<p>habitats, including microhabitats.</p> <ul style="list-style-type: none"> <li>• Observe and describe how seeds and bulbs grow into mature plants.</li> <li>• Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.</li> <li>• Compare the suitability of a variety of materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.</li> </ul>	<p>objects made from some materials can be changed by squashing, bending, twisting and stretching.</p>
<b>Working Scientifically</b>		<ul style="list-style-type: none"> <li>• Identify and classify.</li> <li>• Observe closely, using simple equipment.</li> <li>• Perform a simple test.</li> </ul>	<ul style="list-style-type: none"> <li>• Gather and record data to help answer questions.</li> <li>• Perform simple tests.</li> <li>• Observe closely, using simple equipment.</li> <li>• Use their observations and</li> </ul>	<ul style="list-style-type: none"> <li>• Identify and classify.</li> <li>• Observe closely, using simple equipment.</li> <li>• Perform simple tests, using their observations and ideas to suggest answers to questions.</li> </ul>	<ul style="list-style-type: none"> <li>• Identify and classify using simple equipment.</li> <li>• Ask simple questions and recognise that they can be answered in different ways.</li> <li>• Observe closely, using simple equipment.</li> </ul>	<ul style="list-style-type: none"> <li>• Identify and classify.</li> <li>• Perform simple tests.</li> <li>• Gather and record data to help answer questions.</li> </ul>

			ideas to suggest answers to questions. <ul style="list-style-type: none"> <li>• Identify and classify.</li> </ul>	<ul style="list-style-type: none"> <li>• Gather and record data to help answer questions.</li> </ul>	<ul style="list-style-type: none"> <li>• Perform simple tests and use observations and ideas to suggest answers to questions.</li> <li>• Gather and record data to help answer questions.</li> </ul>	
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### **NC Objectives – Year 3**

#### **Plants**

Pupils should be taught to:

- 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

#### **Animals, including humans**

Pupils should be taught to:

- 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

#### **Rocks**

Pupils should be taught to:

- 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

## Light

Pupils should be taught to:

- 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

## Forces and magnets

- 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

Year 3	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	<b><u>Rocks and Soils</u></b> <ul style="list-style-type: none"><li>• Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties.</li><li>• Recognise that soils are made from rock and organic matter.</li><li>• Describe in simple terms how fossils</li></ul>	<b><u>How do Gardens Grow?</u></b> <ul style="list-style-type: none"><li>• Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers.</li><li>• Explain the requirements of plants for life and growth (air, light,</li></ul>	<b><u>Forces and Magnets</u></b> <ul style="list-style-type: none"><li>• Compare how things move on different surfaces.</li><li>• 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.</li></ul>	<b><u>Light and Shadows</u></b> <ul style="list-style-type: none"><li>• Recognise that they need light in order to see things and that dark is the absence of light.</li><li>• Notice that light is reflected from surfaces.</li><li>• Recognise that shadows are formed when the light from a light source is</li></ul>	<b><u>Food and our Bodies</u></b> <ul style="list-style-type: none"><li>• Identify that animals, including humans, need the right types and amounts of nutrition, and that they cannot make their own food, they get nutrition from what they eat.</li><li>• Identify that humans and some other animals have</li></ul>	<b><u>The Nappy Challenge</u></b>

	are formed when things that have lived are trapped within rock.	water, nutrients from soil and room to grow) and how they vary from plant to plant. <ul style="list-style-type: none"> <li>Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.</li> </ul>	<ul style="list-style-type: none"> <li>Notice that some forces need contact between two objects, but magnetic forces can act at a distance.</li> <li>Describe magnets as having two poles. Predict whether two magnets will attract or repel each other, depending on which poles are facing.</li> <li>Observe how magnets attract or repel each other and attract some materials and not others.</li> </ul>	<p>blocked by a solid object.</p> <ul style="list-style-type: none"> <li>Find patterns in the way that the sizes of shadows change.</li> </ul>	<p>skeletons and muscles for support, protection and movement.</p> <ul style="list-style-type: none"> <li>Identify that humans and some other animals have skeletons and muscles for support, protection and movement.</li> </ul>	
<b>Working Scientifically</b>	<ul style="list-style-type: none"> <li>Gather, record, classify and present data in a variety of ways to help answer questions.</li> <li>Set up simple practical enquiries, comparative and fair tests.</li> <li>Ask relevant questions and use different types of scientific enquiries to answer them.</li> <li>Set up simple practical enquiries, comparative and fair tests.</li> </ul>	<ul style="list-style-type: none"> <li>Investigate the way in which water is transported within plants. Set up simple practical enquiries, comparative and fair tests.</li> <li>Ask relevant questions and using different types of scientific enquiries to answer them. Set up simple practical enquiries, comparative and fair tests.</li> </ul>	<ul style="list-style-type: none"> <li>Set up simple practical enquiries, comparative and fair tests.</li> <li>Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment including thermometers and data loggers.</li> <li>Record findings using simple scientific language, drawings, labelled diagrams,</li> </ul>	<ul style="list-style-type: none"> <li>Set up simple practical enquiries, comparative and fair tests.</li> <li>Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.</li> <li>Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using</li> </ul>	<ul style="list-style-type: none"> <li>Gather, record, classify and present data in a variety of ways to help in answering questions. Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables.</li> <li>Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables. Report on findings from enquiries, including</li> </ul>	<ul style="list-style-type: none"> <li>Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers.</li> <li>Gather, record, classify and present data in a variety of ways to help answer questions.</li> <li>Ask relevant questions and use</li> </ul>



	<ul style="list-style-type: none"> <li>• Set up simple practical enquiries, comparative and fair tests.</li> <li>• Make systematic and careful observations and, where appropriate, take accurate measurements using standard units using a range of equipment.</li> <li>• Gather, record, classify and present data in a variety of ways to help answer questions.</li> <li>• Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.</li> </ul>	<ul style="list-style-type: none"> <li>• Make systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers.</li> <li>• Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables.</li> <li>• Use results to draw simple conclusions.</li> <li>• Make predictions for new values, suggest improvements and raise further questions.</li> <li>• Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.</li> <li>• Gather, record, classify and present</li> </ul>	<p>keys, bar charts and tables.</p> <ul style="list-style-type: none"> <li>• Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.</li> <li>• Use straightforward scientific evidence to answer questions or to support their findings.</li> </ul>	<p>a range of equipment including thermometers and data loggers.</p> <ul style="list-style-type: none"> <li>• Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.</li> <li>• Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.</li> </ul>	<p>oral and written explanations, displays or presentations of results and conclusions.</p> <ul style="list-style-type: none"> <li>• Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.</li> </ul>	<p>different types of scientific enquiries to answer them.</p> <ul style="list-style-type: none"> <li>• Set up simple practical enquiries, comparative and fair tests.</li> <li>• Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.</li> <li>• Use straightforward scientific evidence to answer questions or to support their findings.</li> </ul>
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Pupils should be taught to:

- 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

## Electricity

Pupils should be taught to:

- 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

Year 4	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	<u><b>Living Things and their Habitats</b></u> <ul style="list-style-type: none"> <li>• Recognise that environments can change and that this can sometimes pose dangers to living things.</li> <li>• Explore and use classification keys to help group, identify and name a variety of living things in</li> </ul>	<u><b>Looking at States</b></u> <ul style="list-style-type: none"> <li>• Compare and group materials together, according to whether they are solids, liquids or gases.</li> <li>• Observe that some materials change state when they are heated or cooled, and measure or</li> </ul>	<u><b>Teeth and Eating</b></u> <ul style="list-style-type: none"> <li>• Identify the different types of teeth in humans and their simple functions.</li> <li>• Describe the simple functions of the basic parts of the digestive system in humans.</li> <li>• Construct and interpret a variety of food chains,</li> </ul>	<u><b>What's that Sound?</b></u> <ul style="list-style-type: none"> <li>• Identify how sounds are made, associating some of them with something vibrating.</li> <li>• Find patterns between the volume of a sound and the strength of the vibrations that produced it.</li> </ul>	<u><b>Power it Up</b></u> <ul style="list-style-type: none"> <li>• Identify common appliances that run on electricity.</li> <li>• Pupils should be taught about precautions for working safely with electricity.</li> <li>• Construct a simple series electrical circuit, identifying and</li> </ul>	<u><b>Big Build</b></u>

	<p>their local and wider environment.</p> <ul style="list-style-type: none"> <li>• Recognise that environments can change and that this can sometimes pose dangers to living things.</li> </ul>	<p>research the temperature at which this happens in degrees Celsius (°C).</p> <ul style="list-style-type: none"> <li>• Identify differences, similarities or changes related to simple scientific ideas and processes.</li> <li>• Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.</li> <li>• Identify differences, similarities or changes related to simple scientific ideas and processes.</li> </ul>	<p>identifying producers, predators and prey.</p> <ul style="list-style-type: none"> <li>• Construct and interpret a variety of food chains, identifying producers, predators and prey.</li> </ul>	<ul style="list-style-type: none"> <li>• Find patterns between the pitch of a sound and features of the object that produced it.</li> <li>• Recognise that sounds get fainter as the distance from the sound source increases.</li> <li>• Recognise that vibrations from sounds travel through a medium to the ear.</li> </ul>	<p>naming its basic parts, including cells, wires, bulbs, switches and buzzers.</p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• Recognise some common conductors and insulators, and associate metals with being good conductors.</li> </ul>	
<b>Working Scientifically</b>	<ul style="list-style-type: none"> <li>• Ask relevant questions and using different types of scientific enquiries to answer them.</li> <li>• Use straightforward scientific evidence to answer questions or to support their findings.</li> </ul>	<ul style="list-style-type: none"> <li>• Ask relevant questions and use different types of scientific enquiries to answer them.</li> <li>• Set up simple practical enquiries, comparative and fair tests.</li> </ul>	<ul style="list-style-type: none"> <li>• Ask relevant questions and use different types of scientific enquiries to answer them.</li> <li>• Set up simple practical enquiries, comparative and fair tests.</li> </ul>	<ul style="list-style-type: none"> <li>• Set up simple practical enquiries, comparative and fair tests.</li> <li>• Use straightforward scientific evidence to answer questions or to support their findings.</li> </ul>	<ul style="list-style-type: none"> <li>• Use straightforward scientific evidence to answer questions or to support their findings.</li> </ul>	<ul style="list-style-type: none"> <li>• Set up simple practical enquiries, comparative and fair tests.</li> <li>• Make systematic and careful observations and, where appropriate, take accurate measurements using</li> </ul>

	<ul style="list-style-type: none"> <li>• Gather, record, classify and present data in a variety of ways to help in answering questions.</li> <li>• Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables.</li> <li>• Use straightforward scientific evidence to answer questions or to support their findings.</li> <li>• Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.</li> </ul>	<ul style="list-style-type: none"> <li>• Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers.</li> <li>• Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusion.</li> <li>• Set up simple practical enquiries, comparative and fair tests.</li> <li>• Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.</li> </ul>	<ul style="list-style-type: none"> <li>• Use straightforward scientific evidence to answer questions or to support their findings.</li> <li>• Gather, record, classify and present data in a variety of ways to help answer questions.</li> </ul>	<ul style="list-style-type: none"> <li>• Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers.</li> <li>• Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.</li> <li>• Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables.</li> <li>• Ask relevant questions and use different types of scientific enquiries to answer them.</li> <li>• Identify differences, similarities or changes related to simple scientific ideas and processes.</li> <li>• Set up simple practical enquiries,</li> </ul>		<p>standard units, using a range of equipment, including thermometers and data loggers.</p> <ul style="list-style-type: none"> <li>• Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables.</li> <li>• Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.</li> <li>• Use straightforward scientific evidence to answer questions or to support their findings.</li> <li>• Ask relevant questions and use different types of scientific enquiries to answer them.</li> <li>• Gather, recording, classifying and presenting data in a variety of ways to help answer questions.</li> <li>• Recognise that living things can be</li> </ul>
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				comparative and fair tests. • Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers.		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. • Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.
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#### **N.C Outcomes - Year 5**

##### **Living things and their habitats**

Pupils should be taught to:

- 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

##### **Animals, including humans**

Pupils should be taught to:

- describe the changes as humans develop to old age

## **Properties and changes of materials**

Pupils should be taught 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
- 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

## **Earth and space**

Pupils should be taught to:

- 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

## **Forces**

Pupils should be taught to:

- 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

Year 5	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	<b><u>Material World</u></b> <ul style="list-style-type: none"> <li>• 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.</li> <li>• Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic.</li> <li>• Know that some materials will dissolve in liquid to form a solution and describe how to recover a substance from a solution.</li> <li>• Use knowledge of solids, liquids and gases to decide how mixtures might be</li> </ul>	<b><u>Amazing Changes</u></b> <ul style="list-style-type: none"> <li>• 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.</li> </ul>	<b><u>Out of this World</u></b> <ul style="list-style-type: none"> <li>• Describe the movement of the Earth and other planets relative to the Sun in the Solar System. Describe the Sun, Earth and Moon as approximately spherical bodies.</li> <li>• Use the idea of the Earth's rotation to explain day and night and the apparent movement of the Sun across the sky.</li> <li>• Describe the movement of the Moon relative to the Earth.</li> </ul>	<b><u>Let's Get Moving</u></b> <ul style="list-style-type: none"> <li>• Identify the effects of air resistance, water resistance and friction, that act between moving surfaces.</li> <li>• Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.</li> </ul>	<b><u>Growing Up and Growing Old</u></b> <ul style="list-style-type: none"> <li>• Describe the changes as humans develop to old age.</li> </ul>	<b><u>Circle of Life</u></b> <ul style="list-style-type: none"> <li>• Describe the life process of reproduction in some plants and animals.</li> <li>• Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird.</li> <li>• Describe the life process of reproduction in some plants and animals.</li> </ul>



	<p>separated, including through filtering, sieving and evaporating.</p> <ul style="list-style-type: none"> <li>• Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating.</li> </ul>					
<b>Working Scientifically</b>	<ul style="list-style-type: none"> <li>• Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.</li> <li>• Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.</li> <li>• Record data and results of increasing complexity using scientific diagrams</li> </ul>	<ul style="list-style-type: none"> <li>• Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. Report and present 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.</li> <li>• Use test results to make predictions to set up further</li> </ul>	<ul style="list-style-type: none"> <li>• Report and present 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.</li> <li>• Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.</li> <li>• Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking</li> </ul>	<ul style="list-style-type: none"> <li>• Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.</li> <li>• Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.</li> <li>• Report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms.</li> </ul>	<ul style="list-style-type: none"> <li>• Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.</li> <li>• Report and present 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.</li> <li>• Planning different types of scientific enquiries to answer questions, including recognising and</li> </ul>	<ul style="list-style-type: none"> <li>• Report and present 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.</li> <li>• Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.</li> <li>• Take measurements, using a range of scientific</li> </ul>

	<p>and labels, classification keys, tables, scatter graphs, bar and line graphs.</p> <ul style="list-style-type: none"> <li>• Use test results to make predictions to set up further comparative and fair tests.</li> <li>• 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.</li> </ul>	<p>comparative and fair tests.</p> <ul style="list-style-type: none"> <li>• Identify scientific evidence that has been used to support or refute ideas or arguments.</li> </ul>	<p>repeat readings when appropriate.</p> <ul style="list-style-type: none"> <li>• Identify scientific evidence that has been used to support or refute ideas or arguments.</li> <li>• Use test results to make predictions to set up further comparative and fair tests.</li> </ul>	<ul style="list-style-type: none"> <li>• Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.</li> <li>• Use test results to make predictions to set up further comparative and fair tests.</li> <li>• Bring in objects that have gears such as a bicycle, hand rotary whisk and children's toys so that children can explore the relationship between the cogs and how they move.</li> </ul>	<p>controlling variables where necessary. Identify scientific evidence that has been used to support or refute ideas or arguments.</p>	<p>equipment, with increasing accuracy and precision, taking repeat readings when appropriate.</p> <ul style="list-style-type: none"> <li>• Use test results to make predictions to set up further comparative and fair tests.</li> <li>• Identify scientific evidence that has been used to support or refute ideas or arguments.</li> <li>• Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.</li> <li>• Identify scientific evidence that has been used to support or refute ideas or arguments.</li> </ul>
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#### **N.C Outcomes – Year 6**

#### **Living things and their habitats**

Pupils should be taught 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
- give reasons for classifying plants and animals based on specific characteristics

### **Animals including humans**

Pupils should be taught to:

- 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

### **Evolution and inheritance**

Pupils should be taught 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
- 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

### **Light**

Pupils should be taught to:

- 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

### **Electricity**

Pupils should be taught to:

- 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

Year 6	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	<b><u>Classifying Living Things</u></b> <ul style="list-style-type: none"> <li>• Give reasons for classifying plants and animals based on specific characteristics.</li> <li>• 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.</li> </ul>	<b><u>Evolution and Inheritance</u></b> <ul style="list-style-type: none"> <li>• Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago.</li> <li>• Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents.</li> <li>• Identify how animals and plants are adapted to suit their environment in</li> </ul>	<b><u>Electricity</u></b> <ul style="list-style-type: none"> <li>• Use recognised symbols when representing a simple circuit in a diagram.</li> <li>• Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit.</li> <li>• 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.</li> <li>• Use recognised symbols when representing a simple circuit in a diagram.</li> </ul>	<b><u>Light</u></b> <ul style="list-style-type: none"> <li>• Recognise that light appears to travel in straight lines.</li> <li>• Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.</li> <li>• 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.</li> <li>• Explain that we see things because light travels from light sources to our eyes or from light sources</li> </ul>	<b><u>Healthy Bodies</u></b> <ul style="list-style-type: none"> <li>• Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood.</li> <li>• Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function.</li> </ul>	<b><u>Titanic</u></b>

		different ways and that adaptation may lead to evolution.		to objects and then to our eyes.		
<b>Working Scientifically</b>	<ul style="list-style-type: none"> <li>Identify scientific evidence that has been used to support or refute ideas or arguments.</li> <li>Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.</li> <li>Report and present 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.</li> </ul>	<ul style="list-style-type: none"> <li>Identify scientific evidence that has been used to support or refute ideas or arguments.</li> <li>Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.</li> </ul>	<ul style="list-style-type: none"> <li>Report and present 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.</li> <li>Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.</li> </ul>	<ul style="list-style-type: none"> <li>Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.</li> <li>Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.</li> <li>Report and present 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.</li> </ul>	<ul style="list-style-type: none"> <li>Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.</li> <li>Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.</li> <li>Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.</li> <li>Use test results to make predictions to set up further comparative and fair tests.</li> <li>Identify scientific evidence that has been used to support or refute ideas or arguments.</li> </ul>	<ul style="list-style-type: none"> <li>Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.</li> <li>Use test results to make predictions to set up further comparative and fair tests.</li> <li>Report and present 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.</li> <li>Take measurements, use a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate</li> <li>Identify scientific evidence that has</li> </ul>

					<ul style="list-style-type: none"><li>• Report and present 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.</li></ul>	been used to support or refute ideas or arguments.
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