

Science Nursery

| Year Group | Autumn Term | Spring Term | Summer Term |
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| Nursery | <p data-bbox="271 331 869 400">I can tell you about features of objects in my environment.</p> <p data-bbox="259 435 651 461">Communication and Language</p> <ul data-bbox="309 504 848 563" style="list-style-type: none"> • Understand ‘why’ questions, like: “Why do you think the caterpillar got so fat?” <p data-bbox="259 603 577 628">Understanding the world</p> <ul data-bbox="309 668 869 1042" style="list-style-type: none"> • 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. <p data-bbox="271 1153 869 1185">I can tell you about the world we live in.</p> <p data-bbox="259 1225 651 1251">Communication and Language</p> <ul data-bbox="309 1294 848 1353" style="list-style-type: none"> • Understand ‘why’ questions, like: “Why do you think the caterpillar got so fat?” <p data-bbox="259 1393 577 1418">Understanding the world</p> | <p data-bbox="913 331 1489 363">I can tell you about the natural world.</p> <p data-bbox="902 400 1294 426">Communication and Language</p> <ul data-bbox="952 469 1451 528" style="list-style-type: none"> • Understand ‘why’ questions, like: “Why do you think the caterpillar got so fat?” <p data-bbox="902 568 1220 593">Understanding the world</p> <ul data-bbox="952 601 1480 815" style="list-style-type: none"> • Use all their senses in hands-on exploration of natural materials. • Talk about what they see, using a wide vocabulary. • Begin to understand the need to respect and care for the natural environment and all living things. <p data-bbox="902 1158 1489 1227">I can show care and concern for living things</p> <p data-bbox="902 1262 1294 1287">Communication and Language</p> <ul data-bbox="952 1331 1451 1390" style="list-style-type: none"> • Understand ‘why’ questions, like: “Why do you think the caterpillar got so fat?” <p data-bbox="902 1430 1480 1455">Personal, Social and Emotional Development</p> | <p data-bbox="1525 331 2040 363">I can tell you how plants change</p> <p data-bbox="1514 400 1906 426">Communication and Language</p> <ul data-bbox="1563 469 2040 560" style="list-style-type: none"> • Understand ‘why’ questions, like: “Why do you think the caterpillar got so fat?” <p data-bbox="1514 600 1832 625">Understanding the world</p> <ul data-bbox="1563 668 2056 1042" style="list-style-type: none"> • Use all their senses in hands-on exploration of natural materials. • 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. |

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| | <ul style="list-style-type: none"> • Use all their senses in hands-on exploration of natural materials. • Talk about what they see, using a wide vocabulary. • Begin to make sense of their own life-story and family's history. • 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. | <ul style="list-style-type: none"> • Make healthy choices about food, drink, activity and toothbrushing. <p>Understanding the world</p> <ul style="list-style-type: none"> • Use all their senses in hands-on exploration of natural materials. • Talk about what they see, using a wide vocabulary. • Begin to make sense of their own life-story and family's history. • 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. | |
| Ongoing | <p><u>Personal, Social and Emotional Development</u></p> <ul style="list-style-type: none"> • Make healthy choices about food, drink, activity and toothbrushing. | | |

Science Reception

| Year Group | Autumn Term | Spring Term | Summer Term |
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| Reception | <p data-bbox="284 394 878 480">I can ask and answer questions about my own environment and different environments around the world.</p> <p data-bbox="284 515 674 544">Communication and Language</p> <ul data-bbox="333 550 862 922" style="list-style-type: none"> • Learn new vocabulary. • Ask questions to find out more and to check what has been said to them. • Articulate their ideas and thoughts in well-formed sentences. • Describe events in some detail. • Use talk to help work out problems and organise thinking and activities, and to explain how things work and why they might happen. • Use new vocabulary in different contexts. <p data-bbox="284 957 607 986">Understanding the World</p> <ul data-bbox="333 992 842 1235" style="list-style-type: none"> • Explore the natural world around them. • Describe what they see, hear and feel while they are 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. <p data-bbox="553 1278 611 1307"><u>ELG</u></p> <p data-bbox="284 1342 786 1399">Communication and Language Listening, Attention and Understanding</p> <ul data-bbox="333 1406 835 1490" style="list-style-type: none"> • Make comments about what they have heard and ask questions to clarify their understanding. | <p data-bbox="920 394 1480 451">I can tell you about changes over time in the world around us</p> <p data-bbox="907 486 1296 515">Communication and Language</p> <ul data-bbox="956 521 1480 893" style="list-style-type: none"> • Learn new vocabulary. • Ask questions to find out more and to check what has been said to them. • Articulate their ideas and thoughts in well-formed sentences. • Describe events in some detail. • Use talk to help work out problems and organise thinking and activities, and to explain how things work and why they might happen. • Use new vocabulary in different contexts. <p data-bbox="907 928 1229 957">Understanding the World</p> <ul data-bbox="956 963 1462 1206" style="list-style-type: none"> • Explore the natural world around them. • Describe what they see, hear and feel while they are 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. <p data-bbox="1171 1249 1229 1278"><u>ELG</u></p> <p data-bbox="907 1313 1408 1370">Communication and Language Listening, Attention and Understanding</p> <ul data-bbox="956 1377 1458 1461" style="list-style-type: none"> • Make comments about what they have heard and ask questions to clarify their understanding. | <p data-bbox="1525 394 2116 422">I can tell you about the properties of materials</p> <p data-bbox="1525 458 1915 486">Communication and Language</p> <ul data-bbox="1574 493 2103 865" style="list-style-type: none"> • Learn new vocabulary. • Ask questions to find out more and to check what has been said to them. • Articulate their ideas and thoughts in well-formed sentences. • Describe events in some detail. • Use talk to help work out problems and organise thinking and activities, and to explain how things work and why they might happen. • Use new vocabulary in different contexts. <p data-bbox="1525 900 1848 928">Understanding the World</p> <ul data-bbox="1574 935 2076 1019" style="list-style-type: none"> • Explore the natural world around them. • Describe what they see, hear and feel while they are outside. <p data-bbox="1794 1062 1852 1091"><u>ELG</u></p> <p data-bbox="1525 1126 2027 1184">Communication and Language Listening, Attention and Understanding</p> <ul data-bbox="1574 1190 2076 1275" style="list-style-type: none"> • Make comments about what they have heard and ask questions to clarify their understanding. <p data-bbox="1525 1310 1937 1367">Understanding the World The Natural World</p> <ul data-bbox="1574 1374 2116 1458" style="list-style-type: none"> • Understand some important processes and changes in the natural world around them, including the seasons and changing |

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| | <p>Understanding the World The Natural World</p> <ul style="list-style-type: none"> • 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. <p>I can talk about similarities and differences</p> <p>Communication and Language</p> <ul style="list-style-type: none"> • Learn new vocabulary. • Ask questions to find out more and to check what has been said to them. • Articulate their ideas and thoughts in well-formed sentences. • Describe events in some detail. • Use talk to help work out problems and organise thinking and activities, and to explain how things work and why they might happen. • Use new vocabulary in different contexts. <p>Understanding the World</p> <ul style="list-style-type: none"> • Explore the natural world around them. • Describe what they see, hear and feel while they are outside. • Recognise some environments that are different to the one in which they live. | <p>Understanding the World The Natural World</p> <ul style="list-style-type: none"> • 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. <p>I can tell you about animals that live in different parts of the world.</p> <p>Communication and Language</p> <ul style="list-style-type: none"> • Learn new vocabulary. • Ask questions to find out more and to check what has been said to them. • Articulate their ideas and thoughts in well-formed sentences. • Describe events in some detail. • Use talk to help work out problems and organise thinking and activities, and to explain how things work and why they might happen. • Use new vocabulary in different contexts. <p>Understanding the World</p> <ul style="list-style-type: none"> • Explore the natural world around them. • Recognise some environments that are different to the one in which they live. <p><u>ELG</u></p> <p>Communication and Language Listening, Attention and Understanding</p> | <p>states of matter.</p> |
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| | <ul style="list-style-type: none"> • Understand the effect of changing seasons on the natural world around them. <p style="text-align: center;"><u>ELG</u></p> <p>Communication and Language Listening, Attention and Understanding</p> <ul style="list-style-type: none"> • Make comments about what they have heard and ask questions to clarify their understanding. <p>Understanding the World The Natural World</p> <ul style="list-style-type: none"> • 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. | <ul style="list-style-type: none"> • Make comments about what they have heard and ask questions to clarify their understanding. <p>Understanding the World The Natural World</p> <ul style="list-style-type: none"> • 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. | |
| <p>Ongoing</p> | <p><u>Personal, Social and Emotional Development</u></p> <ul style="list-style-type: none"> • Know and talk about the different factors that support their overall health and wellbeing: • regular physical activity • healthy eating • toothbrushing • sensible amounts of ‘screen time’ • having a good sleep routine • being a safe pedestrian <p><u>ELG</u> Personal, Social and Emotional Development Managing Self Manage their own basic hygiene and personal needs, including dressing, going to the toilet and understanding the importance of healthy food choices.</p> | | |

Science Year 1

Working Scientifically

During years 1 and 2, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:

- 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.

Seasonal Changes

I can tell you about seasonal changes.

Pupils should be taught to:

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



Animals, including Humans

I can tell you how I group animals.
I can tell you how to label the human body
and compare the structures of different
animals.

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)

Everyday Materials

I can tell you how I compare and group
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.



Plants

I can tell you about different plants and trees
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.



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



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| Comparative / fair testing Changing one variable to see its effect on another, whilst keeping all others the same. |  |
| Research Using secondary sources of information to answer scientific questions. |  |
| Observation over time Observing changes that occur over a period of time ranging from minutes to months. |  |
| Pattern-seeking Identifying patterns and looking for relationships in enquiries where variables are difficult to control. |  |
| Identifying, grouping and classifying Making observations to name, sort and organise items. |  |
| Problem-solving Applying prior scientific knowledge to find answers to problems. |  |

Science Year 2

Working Scientifically

During years 1 and 2, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:

- 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.

Animals, including Humans

I can tell you about the basic needs of animals, including humans, for survival.

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

I can tell you why different materials are chosen for different purposes and designs.

I can tell you how materials can be changed by squashing, bending, twisting and stretching.

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.



Plants

I can tell you how to grow plants and keep them healthy.

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.

Living Things and their Habitats

I can tell you how to recognise living, non-living and dead things.

I can tell you about living things and 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 micro-habitats.
- 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.





Comparative / fair testing

Changing one variable to see its effect on another, whilst keeping all others the same.



Research

Using secondary sources of information to answer scientific questions.



Observation over time

Observing changes that occur over a period of time ranging from minutes to months.



Pattern-seeking

Identifying patterns and looking for relationships in enquiries where variables are difficult to control.



Identifying, grouping and classifying

Making observations to name, sort and organise items.



Problem-solving

Applying prior scientific knowledge to find answers to problems.



Science Year 3

Working Scientifically

During years 3 and 4, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:

- 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.

Light

I can tell you how light is reflected and how shadows are formed.

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
- find patterns in the way that the size of shadows change.



Animals including Humans

I can tell you how animals including humans, feed and move.

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.



Plants

I can tell you how about the function of different parts of flowering plants. I can tell you about different species of plants and their different requirements for healthy growth.

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.



Forces and Magnets

I can tell you about forces in action, including magnetism

Pupils should be taught to:

- compare how things move on different surfaces.

Rocks

I can tell you about rocks and soils, including how they are formed.

Pupils should be taught to:

- notice that some forces need contact between two 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 two poles.
- predict whether two magnets will attract or repel each other, depending on which poles are facing.



- 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.



Comparative / fair testing

Changing one variable to see its effect on another, whilst keeping all others the same.



Research

Using secondary sources of information to answer scientific questions.



Observation over time

Observing changes that occur over a period of time ranging from minutes to months.



Pattern-seeking

Identifying patterns and looking for relationships in enquiries where variables are difficult to control.



Identifying, grouping and classifying

Making observations to name, sort and organise items.



Problem-solving

Applying prior scientific knowledge to find answers to problems.



Science Year 4

Working Scientifically

During years 3 and 4, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:

- 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.

States of Matter I can tell you about the effect of temperature on solids, liquids and gases.

Pupils should be taught to:

- 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.



Electricity I can tell you how electricity travels.

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.



Living Things and their Habitats I can tell you how to classify living things

Pupils should be taught to:

- 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.



Sound I can tell you how sound travels.

Pupils should be taught to:

- identify how sounds are made, associating some of them with something vibrating.

Animals including Humans I can tell you how the environment affects different animals

Pupils should be taught to:

- describe the simple functions of the basic parts of the digestive system in human.

- 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.



- 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.



Comparative / fair testing

Changing one variable to see its effect on another, whilst keeping all others the same.



Research

Using secondary sources of information to answer scientific questions.



Observation over time

Observing changes that occur over a period of time ranging from minutes to months.



Pattern-seeking

Identifying patterns and looking for relationships in enquiries where variables are difficult to control.



Identifying, grouping and classifying

Making observations to name, sort and organise items.



Problem-solving

Applying prior scientific knowledge to find answers to problems.



Science Year 5

Working Scientifically

During years 5 and 6, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:

- 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 graph.
- using test results to make predictions to set up further comparative and fair tests.
- reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations.
- identifying scientific evidence that has been used to support or refute ideas or arguments.

Properties and Changes of Material

I can tell you about reversible and irreversible changes in materials.

I can tell you how to separate 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

I can tell you about the movements of the moon; the movements of the Earth and other planets, in relation to the Sun.

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.

Living Things

I can tell you how different living things reproduce.

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.



Forces



Animals including Humans

I can tell you the effects of forces in the world around us.

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.



I can tell you how we change as we get older

Pupils should be taught to:

- describe the changes as humans develop to old age.



Comparative / fair testing

Changing one variable to see its effect on another, whilst keeping all others the same.



Research

Using secondary sources of information to answer scientific questions.



Observation over time

Observing changes that occur over a period of time ranging from minutes to months.



Pattern-seeking

Identifying patterns and looking for relationships in enquiries where variables are difficult to control.



Identifying, grouping and classifying

Making observations to name, sort and organise items.



Problem-solving

Applying prior scientific knowledge to find answers to problems.



Science Year 6

Working Scientifically

During years 5 and 6, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:

- 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 graph
- using test results to make predictions to set up further comparative and fair tests
- reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations
- identifying scientific evidence that has been used to support or refute ideas or arguments.

Animals including Humans I can tell you how to ensure our bodies function well.

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.



Light I can tell you how we see 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 I can tell you how circuits can be represented and changed.

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

Evolution and Inheritance I can tell you how living things evolve.

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

Living Things I can tell you how living things are classified.

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.

bulbs, the loudness of buzzers and the on/off position of switches.

- use recognised symbols when representing a simple circuit in a diagram.



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.



- give reasons for classifying plants and animals based on specific characteristics.



Comparative / fair testing

Changing one variable to see its effect on another, whilst keeping all others the same.



Research

Using secondary sources of information to answer scientific questions.



Observation over time

Observing changes that occur over a period of time ranging from minutes to months.



Pattern-seeking

Identifying patterns and looking for relationships in enquiries where variables are difficult to control.



Identifying, grouping and classifying

Making observations to name, sort and organise items.



Problem-solving

Applying prior scientific knowledge to find answers to problems.

