



## Whipton Barton Federation Science Long Term Curriculum Map

Through Science at Whipton Barton Federation, we aim to give all our children an understanding of the world around them from the moment they join us. When children are studying Science at the primary level, they should be acquiring specific skills and knowledge to help them to think scientifically, to gain an understanding of scientific processes and also an understanding of the uses and implications of Science, today and for the future. This learning is built on each year.



At Whipton Barton Federation, scientific enquiry skills are embedded in each Science unit the children study with the aim of helping them to answer questions about the world around them. These topics are revisited and developed throughout their time with us. Please see the examples below to show you how these build up throughout the primary.

Children are natural scientists and throughout their Reception year, children are exposed to core scientific principles as they are encouraged to question the world around them and talk about the observations they make. For example, children are exposed to problems like, "Which materials would be good for bear to wear if he went splashing in the rain?" The activity encourages children to think in a scientific way – what are we trying to find out? What shall we do to do to test the materials? Which materials do you think would be good/bad? Explain your thoughts on that? How can we make sure the test is fair? What did we find out? Introducing them to the principles of a simple test from an early age ensure that children learn to develop the skills of observations, predictions, critical thinking and discussion. In the Early Years, the desire to explore and investigate is fostered through continuous provision and adult-led activities, with area such as exploration or interest trays set up in the environment. The Early Years curriculum is planned to ensure that children are exposed to a variety of science topics which include: classification of different animals, growing plants from seeds, life cycles of plants and animals (observing in real time the life cycle of a butterfly and a frog), seasons and changing states of matter. Science is both taught during continuous provision and topic time, but it is also integrated into most 'Talk Through Stories' texts that we teach. An example of this would be during our Superhero topic when we read the book



'Supertato: The Return of Evil Pea'. In this story, Evil Pea escapes from the freezer and freezes the whole of the supermarket. Throughout the week of reading this book, activities around the classroom include finding out the quickest way to melt ice, investigating where in the classroom is the best place for the ice to melt and thinking about how we can break the ice. Using the story also offers opportunities to discuss some of the illustrations in the book such as, 'Why are the red chillies rubbing themselves onto the ice? – a great response from a child at this point was, "Because chillies are hot and hot things melt ice". The scientific experiences that the children encounter throughout their Reception year excellently prepare them to become future scientists as they progress onto the next stage of their education in KS1.

In Year 1, children will begin to ask simple questions and recognise that they can be answered in a variety of ways. To develop our Working Scientifically skills we will observe the world around us closely, using simple equipment where appropriate and will start to think about how we could identify and classify the objects that we come across. Children will also look at: identifying wild plants and describing the basic structure of a variety of common plants, identifying the 5 main groups of organisms, define carnivores, herbivores and omnivores, label the human body, look at everyday materials and observe the changing seasons throughout the year.

In Year 2, children will develop their 'Working Scientifically' skills through using their observation and ideas to suggest answers to questions and gathering and recording data to help in answering questions. Children will also look at: explores the differences between things that are living, dead and those that have never been alive, identify habitats, look at simple food chains, describe what plants need to thrive, find out about the basic needs of animals and compare the suitability of everyday materials.

In Year 3, children pupils will be 'Working Scientifically' through asking relevant questions, setting up simple practical enquiries, making systematic and careful observations, recording findings and using results to draw simple conclusions. Children will also: identify and describe the function of plants, investigate the way in which water is transported in plants, identify the needs and structures of animals, compare and group together rock and soil types, explore light and shadows and look into the effect of forces.

In Year 4, children will look at 'Working Scientifically' through comparative and fair testing, using simple scientific language, drawings and charts, report findings from enquiries, using results to make predictions whilst suggesting improvements and raise further questions and use straightforward



food chains,

scientific evidence to answer questions to support their findings. Children will also: recognise living things can be grouped in a variety of ways, use classification keys, describe the functions of the human body, identify identify how sounds are made and investigate electricity.

In Year 5, children will engage in 'Work Scientifically' through planning different types of scientific enquiries, taking measurements, recording data and results, using test results to make predictions and identifying scientific evidence that has been used to support or refute ideas or arguments. Children will also: describe life cycles, group together everyday materials, demonstrate the changes of materials, begin learning about Earth and Space and investigate how to increase the effects of forces.

In Year 6, children will 'Work Scientifically' by recognising and controlling variables, increase the accuracy and precision of taking measurements, record results with increasing complexity, make predictions to set up further comparative and fair tests and report and present findings. Children will also: describe how living things are classified, identify human needs and the impact of diet, exercise drugs and lifestyles, recognise that living things change over time, identify how animals are adapted to suit environments, explore light and investigate electricity with increased complexity.

All children are encouraged to develop and use a range of skills including observations, planning and investigations. Specialist vocabulary for topics is taught and built up, and effective questioning to communicate ideas is encouraged. Concepts taught should be reinforced by focusing on the key features of scientific enquiry, so that pupils learn to use a variety of approaches to answer relevant scientific questions.

We are developing the following types of scientific enquiry at Whipton Barton Federation: observing over time; pattern seeking; identifying, classifying and grouping; comparative and fair testing (controlled investigations); and researching using secondary sources. We aim, through our teaching, for our children to develop an interest and enthusiasm for Science.



Year	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
<b>Reception</b>	<p>Children are natural scientists and throughout their Reception year, children are exposed to core scientific principles as they are encouraged to question the world around them and talk about the observations they make. For example, children are exposed to problems like, "Which materials would be good for bear to wear if he went splashing in the rain?" The activity encourages children to think in a scientific way – what are we trying to find out? What shall we do to do to test the materials? Which materials do you think would be good/bad? Explain your thoughts on that? How can we make sure the test is fair? What did we find out? Introducing them to the principles of a simple test from an early age ensure that children learn to develop the skills of observations, predictions, critical thinking and discussion. In the Early Years, the desire to explore and investigate is fostered through continuous provision and adult-led activities, with area such as exploration or interest trays set up in the environment. The Early Years curriculum is planned to ensure that children are exposed to a variety of science topics which include: classification of different animals, growing plants from seeds, life cycles of plants and animals (observing in real time the life cycle of a butterfly and a frog), seasons and changing states of matter. Science is both taught during continuous provision and topic time, but it is also integrated into most 'Talk Through Stories' texts that we teach. An example of this would be during our Superhero topic when we read the book 'Supertato: The Return of Evil Pea'. In this story, Evil Pea escapes from the freezer and freezes the whole of the supermarket. Throughout the week of reading this book, activities around the classroom include finding out the quickest way to melt ice, investigating where in the classroom is the best place for the ice to melt and thinking about how we can break the ice. Using the story also offers opportunities to discuss some of the illustrations in the book such as, 'Why are the red chillies rubbing themselves onto the ice? – a great response from a child at this point was, "Because chillies are hot and hot things melt ice".</p>					
Year	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
<b>Year 1</b>	<p><b>Rising Star - Switched On 'Polar Adventures'</b></p> <p>I can ask simple questions and recognise that they can be answered in different ways.</p> <p>I can perform simple tests.</p>	<p><b>Rising Star - Switched On 'Who Am I?'</b></p> <p>I can observe things using simple equipment.</p> <p>I can identify and sort different things.</p>	<p><b>Rising Star - Switched On 'Holiday'</b></p> <p>I can ask simple questions and recognise that they can be answered in different ways.</p> <p>I can observe closely, using simple equipment.</p>	<p><b>Rising Star - Switched On 'On Safari'</b></p> <p>I can ask simple questions and recognise that they can be answered in different ways.</p> <p>I can observe closely.</p>	<p><b>Rising Star - Switched On 'Celebrations'</b></p> <p>I can observe things using simple equipment.</p> <p>I can identify and classify.</p> <p>I can perform simple tests.</p>	<p><b>Rising Star - Switched On 'Treasure Island'</b></p> <p>I can ask simple questions and recognise that they can be answered in different ways.</p> <p>I can observe closely, using simple equipment.</p>



	<p>I can identify and classify.</p> <p>I can use observations and ideas to suggest answers to questions.</p>	<p>I can collect and record data to help answer questions.</p>	<p>I can perform simple tests.</p> <p>I can identify and classify.</p> <p>I can use observations and ideas to suggest answers to questions.</p> <p>I can gather and record data to help in answering questions.</p>	<p>I can perform simple tests.</p> <p>I can identify and classify.</p> <p>I can gather and record data to help in answering questions.</p> <p>I can describe the simple physical properties of a variety of everyday materials.</p>	<p>I can use observations and ideas to suggest answers to questions.</p> <p>I can gather and record data to help in answering questions.</p>	<p>I can perform simple tests.</p> <p>I can identify and classify.</p> <p>I can use their observations and ideas to suggest answers to questions.</p> <p>I can gather and record data to help in answering questions.</p>
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**Year 1 National Curriculum Science Statements**

**Working Scientifically**

- Ask simple questions and recognise that they can be answered in different ways (Polar Regions) (On Safari) (Holiday)
- Use simple equipment to observe closely (Who am I?) (On Safari) (Holiday) (Celebrations)
- Perform simple tests (Polar Regions) (On Safari) (Holiday)
- Identify and classify (Polar Regions) (On Safari) (Holiday) (Celebrations)
- Use his/her observations and ideas to suggest answers to questions (Polar Regions) (On Safari) (Holiday) (Celebrations)
- Gather and record data to help in answering questions (Who am I?) (Holiday) (Celebrations)

**Animals, Including Humans**

- Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals (Polar Regions) (Holiday) (On Safari) (Treasure Island)
- Group animals according to what they eat (Treasure Island)



- Identify and name a variety of common animals that are carnivores, herbivores and omnivores (Holiday) (On Safari)
- Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds, mammals, including pets (Polar Regions) (Holiday) (On Safari)
- Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense (Who am I?) (Treasure Island)

### **Materials**

- Distinguish between an object and the material from which it is made (Celebrations)
- Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water and rock (Polar Regions) (Holiday) (On Safari) (Celebrations)
- Describe the simple physical properties of a variety of everyday materials (Polar Regions) (Holiday) (Celebrations) (Treasure Island)
- Compare and group together a variety of everyday materials on the basis of their simple physical properties (Treasure Island)

### **Plants**

- Identify and name a variety of common wild and garden plants, including, deciduous and evergreen trees (Treasure Island)
- Identify and describe the basic structure of a variety of common flowering plants, including trees (Celebrations)

### **Seasonal Changes- taught throughout the year, not as a stand-alone unit**

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



Year	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
<b>Year 2</b>	<p><b>Rising Star - Switched On 'Healthy Me'</b></p> <p>I can observe closely.</p> <p>I can perform simple tests.</p> <p>I can identify and classify.</p> <p>I can use observations and ideas to suggest answers to questions.</p> <p>I can gather and record data in answering questions.</p>	<p><b>Rising Star - Switched On 'Mini Worlds'</b></p> <p>I can observe closely.</p> <p>I can identify and classify.</p> <p>I can use observations and ideas to suggest answers to questions.</p> <p>I can gather and record data to help in answering questions.</p>	<p><b>Rising Star - Switched On 'Materials Monster'</b></p> <p>I can observe closely.</p> <p>I can perform simple tests.</p> <p>I can identify and classify.</p> <p>I can use observations and ideas to suggest answers to questions.</p> <p>I can gather and record data to help in answering questions.</p>	<p><b>Rising Star - Switched On 'Move It'</b></p> <p>I can observe closely.</p> <p>I can perform simple tests.</p> <p>I can identify and classify.</p> <p>I can use observations and ideas to suggest answers to questions.</p> <p>I can gather and record data to help in answering questions.</p>	<p><b>Rising Star - Switched On 'Young Gardeners'</b></p> <p>I can ask simple questions and recognise that they can be answered in different ways.</p> <p>I can observe closely, using simple equipment.</p> <p>I can perform simple tests.</p> <p>I can identify and classify.</p> <p>I can use observations and ideas to suggest answers to questions.</p> <p>I can gather and record data to help in answering questions.</p>	<p><b>Rising Star - Switched On 'Little Masterchefs'</b></p> <p>I can observe closely.</p> <p>I can perform simple tests.</p> <p>I can identify and classify.</p> <p>I can use observations and ideas to suggest answers to questions.</p> <p>I can gather and record data to help in answering questions.</p>



## Year 2 National Curriculum Science Statements

### Working Scientifically

- Ask simple questions and recognise that they can be answered in different ways, including use of scientific language from the national curriculum (Move It) (Young Gardeners)
- Use simple equipment to observe closely including changes over time (Healthy Me) (Mini Worlds) (Materials Monster) (Move It) (Young Gardeners)
- Communicate his/her ideas, what he/she does and what he/she finds out in a variety of ways (Little Masterchefs)
- Perform simple comparative tests (Healthy Me) (Materials Monster) (Young Gardeners)
- Identify groups and classify (Healthy Me) (Mini Worlds) (Materials Monster) (Move It) (Young Gardeners)
- Use his/her observations and ideas to suggest answers to questions noticing similarities, differences and patterns (Healthy Me) (Mini Worlds) (Materials Monster) (Move It) (Young Gardeners)
- Gather and record data to help in answering questions including from secondary sources of information (Healthy Me) (Mini Worlds) (Materials Monster) (Move It) (Young Gardeners)

### Animals, Including Humans

- Understand that animals, including humans, have offspring which grow into adults (Little Masterchefs)
- Describe the basic needs of animals, including humans, for survival (food, water, air) (Mini Worlds) (Little Masterchefs)
- Describe the importance for humans of exercise eating the right amounts of different types of food and hygiene (Healthy Me) (Little Masterchefs)

### Living Things and their Habitat

- Explore and compare the differences between things that are living, things that are dead and things that have never been alive (Mini Worlds)
- Identify that most living things live in habitats to which they are suited and describe how different habitats provide the basic needs of different kinds of animals and plants, and how they depend on each other (Mini Worlds)
- Identify and name a variety of plants and animals in their habitats, including micro-habitats (Mini Worlds)
- 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 (Mini Worlds)





### **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 (Mini Worlds) (Materials Monster) (Young Gardeners) (Little Masterchefs)
- Describe how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching (Materials Monster) (Move It) (Little Masterchefs)

### **Plants**

- Observe and describe how seeds and bulbs grow into mature plants (Young Gardeners) (Little Masterchefs)
- Describe how plants need water, light and a suitable temperature to grow, stay healthy and describe the impact of changing these (Young Gardeners)



Year	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Year 3	<p><b>Rising Star - Switched On 'Earth Rocks'</b></p> <p>I can set up and carry out simple, practical activities and fair tests.</p> <p>I can collect and record data from observations and tests.</p> <p>I can use results to draw conclusions and suggest improvements or new questions.</p>	<p><b>Rising Star - Switched On 'Food and Our Bodies'</b></p> <p>I can gather, record and present data in different ways.</p> <p>I can observe and compare animals with and without skeletons.</p> <p>I can make systematic and careful observations.</p>	<p><b>Rising Star - Switched On 'Mirror, Mirror'</b></p> <p>I can record observations and make sense of them.</p> <p>I can design and carry out a fair test.</p> <p>I can research and gather some key facts about how mirrors have been made over the centuries.</p>	<p><b>Rising Star - Switched On 'How does your garden grow?'</b></p> <p>I can set up simple practical enquiries.</p> <p>I can ask relevant questions and use different types of scientific enquiry to answer them.</p> <p>I can record the findings using drawings and labelled diagrams.</p>	<p><b>Rising Star - Switched On 'Opposites Attract'</b></p> <p>I can report and present findings from enquiries.</p> <p>I can list at least ten uses of magnets in everyday life.</p> <p>I can predict whether two magnets will attract or repel each other.</p>	<p><b>Rising Star - Switched On 'We are Astronauts'</b></p> <p>I can set up simple practical enquiries.</p> <p>I can ask relevant questions and use different types of scientific enquiry to answer them.</p> <p>I can record the findings using drawings and labelled diagrams.</p>



### Year 3 National Curriculum Science Statements

#### Working Scientifically

- Ask relevant questions and use different types of scientific enquiries to answer them (Mirror, Mirror) (How does your garden grow?) (Opposites Attract) (We are Astronauts)
- Set up simple practical enquiries, comparative and fair tests (Earth Rocks) (Mirror, Mirror) (How does your garden grow?) (Opposites Attract)
- Make systematic and careful observations and where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers (Food and Our Bodies)
- Gather, record, classify and present data in a variety of ways to help in answering questions (Earth Rocks) (Food and Our Bodies) (Opposites Attract)
- Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables (Mirror, Mirror) (How does your garden grow?)
- Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions (Mirror, Mirror) (We are Astronauts)
- Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions (Earth Rocks)
- Identify differences, similarities or changes related to simple scientific ideas and processes (Food and Our Bodies) (We are Astronauts)
- Use straightforward scientific evidence to answer questions or to support his/her findings (Food and Our Bodies) (Opposites Attract)

#### Animals, Including Humans

- Identify that animals, including humans, need the right types and amounts of nutrition and they cannot make their own food. They get nutrition from what they eat. (Food and Our Bodies)
- Identify that humans and some other animals have skeletons and muscles for support, protection and movement (Food and Our Bodies)

#### Forces and Magnets

- Compare how things move on different surfaces (Opposites Attract)
- Notice that some forces need contact between two objects, but magnetic forces can act as a distance (Opposites Attract)
- Observe how magnets attract or repel each other and attract some materials and not others (Opposites Attract)
- 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 (Opposites Attract)
- Describe magnets as having two poles (Opposites Attract) (We are Astronauts)
- Predict whether two magnets will attract or repel each other depending on which poles are facing (Opposites Attract) (We are Astronauts)



### Light

- Recognise that he/she needs light in order to see things and that dark is the absence of light (Mirror, Mirror)
- Notice that light is reflected from surfaces (Mirror, Mirror)
- Recognise that light from the sun can be dangerous and there are ways to protect your eyes (Mirror, Mirror)
- Recognise that shadows are formed when the light from a light source is blocked by a solid object (Mirror, Mirror) (We are Astronauts)
- Find patterns in the way that a shadow changes in size (Mirror, Mirror) (We are Astronauts)

### Plants

- Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers (How does your garden grow?)
- Explore and describe 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 (How does your garden grow?)
- Investigate the way in which water is transported in plants (How does your garden grow?)
- Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal (How does your garden grow?)

### Rocks

- Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties (Earth Rocks) (We are Astronauts)
- Describe in simple terms how fossils are formed when things that have lived are trapped within rock (Earth Rocks)
- Recognise that soils are made from rocks and organic matter (Earth Rocks) (We are Astronauts)



Year	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Year 4	<p><b>Rising Star - Switched On 'What's that sound?'</b></p> <p>I can use results to form conclusions.</p> <p>I can use evidence to answer questions.</p>	<p><b>Rising Star - Switched On ' Living Things'</b></p> <p>I can ask questions that can be used to construct a key.</p> <p>I can make careful observations.</p> <p>I can ask relevant questions in order to sort and classify.</p>	<p><b>Rising Star - Switched On 'Looking at States'</b></p> <p>I can record what has been learnt in a variety of ways.</p> <p>I can use research skills to find out about temperature.</p> <p>I can make careful observations and record these.</p>	<p><b>Rising Star - Switched On 'Teeth and Eating'</b></p> <p>I can make observations and form conclusions.</p> <p>I can make observations and record findings using scientific language and labelled diagrams.</p>	<p><b>Rising Star - Switched On 'Power It Up'</b></p> <p>I can classify and record data.</p> <p>I can use results to draw simple conclusions.</p> <p>I can apply prior learning to a problem or question.</p>	<p><b>Rising Star - Switched On 'Brilliant Bubbles'</b></p> <p>I can set up simple practical enquiries and fair tests.</p> <p>I can record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables.</p> <p>I can use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further.</p> <p>I can identify differences, similarities or changes related to simple scientific ideas and processes.</p>



### Year 4 National Curriculum Science Statements

#### Working Scientifically

- Ask relevant questions and use different types of scientific enquiries to answer them (What's that sound?)
- Set up simple practical enquiries and fair tests (What's that sound?) (Brilliant Bubbles)
- Make systematic and careful observations and where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers (Living Things) (Teeth and Eating)
- Gather, record, classify and present data in a variety of easy to help in answering questions (What's that sound?) (Power it Up)
- Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables (Living Things) (Looking at States) (Power it Up)
- Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions (What's that sound?) (Looking at States) (Power it Up) (Brilliant Bubbles)
- Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions (What's that sound?) (Looking at States) (Teeth and Eating) (Brilliant Bubbles)
- Identify differences, similarities or changes related to simple scientific ideas and processes (Power it Up) (Brilliant Bubbles)
- Use straightforward scientific evidence to answer questions or to support his/her findings (What's that sound?) (Power it Up)

#### Animals, Including Humans

- Describe the simple functions of the basic parts of the digestive system in humans (Teeth and Eating)
- Identify the different types of teeth in humans and their simple functions (Teeth and Eating)
- Construct and interpret a variety of food chains, identifying producers, predators and prey (Living Things) (Teeth and Eating)

#### Electricity

- Identify common appliances that run on electricity (Power it Up)
- Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers (Power it Up)
- Identify whether or not a lamp will lighting simple series circuit, based on whether or not the lamp is part of a complete loop with a battery (Power it Up)



- Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit (Power it Up)
- Recognise some common conductors and insulators and associate metals, with being good conductors (Power it Up)

### **Living things and their Habitat**

- Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment (Living Things)
- Recognise that environments can change and that this can sometimes pose danger and have an impact on living things

### **Sound**

- Identify how sounds are made, associating some of them with something vibrating (What's that sound?)
- Recognise that vibrations from sounds travel through a medium to the ear (What's that sound?)
- Find patterns between the volume of a sound and the strength of the vibrations that produced it (What's that sound?)
- Recognise that sounds gets fainter as the distance from the sound source increases (What's that sound?)

### **States of Matter**

- Compare and group materials together, according to whether they are solids, liquids or gases (Looking at States) (Brilliant Bubbles)
- Observe some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (Looking at States) (Brilliant Bubbles)
- Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature (Looking at States)



Year	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
<b>Year 5</b>	<p><b>Rising Star - Switched On ' Out of this World'</b></p> <p>I can identify scientific evidence that has been used to support a theory.</p> <p>I can use simple models to explain scientific ideas.</p>	<p><b>Rising Star - Switched On ' Material World'</b></p> <p>I can plan comparative or fair tests and then take accurate measurements and make accurate observations.</p> <p>I can use relevant scientific language to explain their ideas.</p> <p>I can report and present findings from enquiries.</p>	<p><b>Rising Star - Switched On 'Circle of Life'</b></p> <p>I can take measurements and presenting findings from enquiries.</p> <p>I can report and present findings from enquiries.</p>	<p><b>Rising Star - Switched On ' Let's Get Moving'</b></p> <p>I can explain some of the effects of gravity.</p> <p>I can set up, carry out and make sense of a variety of investigations.</p> <p>I can design and make machines that use levers, pulleys, springs and gears.</p>	<p><b>Rising Star - Switched On 'Growing Up and Growing Old'</b></p> <p>I can identify scientific evidence that has been used and to support or refute ideas or argument.</p> <p>I can collect and compare data.</p>	<p><b>Rising Star - Switched On 'Super Scientists'</b></p> <p>I can report and present findings from enquiries, including conclusions, casual relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations.</p>





## Year 5 National Curriculum Science Statements

### Working Scientifically

- Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary (Out of this World) (Let's Get Moving) (Staying Alive)
- Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate (Material World) (Circle of Life) (Let's Get Moving) (Staying Alive)
- Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs
- Use test results to make predictions to set up further comparative and fair tests (Out of this World) (Material World) (Growing Up and Growing Old) (Staying Alive)
- Report and present findings from enquiries, including conclusions, casual relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations (Material World) (Circle of Life) (Let's Get Moving) (Super Scientists) (Staying Alive)
- Identify scientific evidence that has been used and to support or refute ideas or argument (Material World) (Let's Get Moving) (Growing Up and Growing Old) (Super Scientists) (Staying Alive)

### Animals, Including Humans

- Describe the changes as humans develop to old age (Growing Up and Growing Old) (Staying Alive)

### Earth and Space

- Describe the movement of the Earth, and other planets, relative to the Sun in the Solar system (Out of this World)
- Describe the movement of the moon relative to the Earth (Out of this World)
- Describe the sun, Earth and Moon as approximately spherical bodies (Out of this World)
- Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky (Out of this World)



### **Forces and Magnets**

- Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object (Let's Get Moving)
- Identify the effects of air resistance, water resistance and friction, that act between moving surfaces (Let's Get Moving)
- Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect (Let's Get Moving)

### **Living things and their Habitat**

- Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird (Circle of Life) (Growing Up and Growing Old) (Staying Alive)
- Describe the life processes of reproduction in some plants and animals (Circle of Life) (Growing Up and Growing Old) (Staying Alive)

### **Materials**

- 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 (Material World)
- Recognise that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution (Material World)
- Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating (Material World) (Super Scientists)
- Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic (Super Scientists)
- Demonstrate that dissolving, mixing, and changes of state are reversible changes (Material World)
- 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 (Material World) (Super Scientists)



Year	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
<b>Year 6</b>	<p><b>Rising Star - Switched On ' Staying Alive'</b></p> <p>I can take and record measurements.</p> <p>I can present data in appropriate ways.</p> <p>I can use evidence to support or refute an assertion.</p> <p>I can analyse data.</p>	<p><b>Rising Star - Switched On ' Classifying Critters'</b></p> <p>I can decide on the best way to present evidence.</p> <p>I can interpret observations and use them to develop explanations.</p> <p>I can interpret observations and use them to develop explanations.</p>	<p><b>Rising Star - Switched On ' Let it Shine'</b></p> <p>I can represent and report on findings.</p> <p>I can take accurate measurements.</p> <p>I can identify and manage variables in an investigation.</p> <p>I can present findings and conclusions from experiments.</p> <p>I can use secondary sources to answer questions.</p> <p>I can make observations and raise further questions to investigate.</p>	<p><b>Rising Star - Switched On 'We're Evolving'</b></p> <p>I can collect and present data in a variety of ways.</p> <p>I can develop research skills and interpret data</p> <p>I can recognise that observations can be used to support ideas.</p>	<p><b>Rising Star - Switched On 'Electrifying'</b></p> <p>I can present findings and conclusions.</p> <p>I can plan how to investigate an idea by managing variables.</p> <p>I can use results to make predictions and suggest further tests to conduct.</p>	<p><b>Rising Star - Switched On ' We are Dinosaur Hunters'</b></p> <p>I can make accurate measurements.</p> <p>I can record and interpret results.</p> <p>I can use results to make predictions.</p> <p>I can make accurate observations.</p> <p>I can present and evaluate the findings from their enquiries.</p> <p>I can make detailed observations.</p> <p>I can decide if I agree with other people's results and ideas.</p> <p>I can explain what my observations show.</p>



I can say how good my evidence is and whether it needs more research.

### Year 6 National Curriculum Science Statements

#### Working Scientifically

- Plan different types of scientific enquiries to answer their own or others' questions, including recognising and controlling variables where necessary (Classifying Critters) (Let it Shine) (We're Evolving) (Electrifying)
- Take measurements, using a range of scientific equipment with increasing accuracy and precision, taking repeat readings when appropriate (Let it Shine) (Electrifying) (We are Dinosaur Hunters)
- Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs (Staying Alive) (Electrifying) (We are Dinosaur Hunters)
- Use test results to make predictions to set up further comparative and fair tests (We are Dinosaur Hunters)
- Report and present findings from enquiries, including conclusions, casual relationships and explanations of and degree of trust in results in oral and written forms such as displays and other presentations (Staying Alive) (Classifying Critters) (Let it Shine) (Let it Shine) (We're Evolving) (Electrifying) (We are Dinosaur Hunters)
- Identify scientific evidence that has been used to support or refute ideas or arguments (Staying Alive)
- Describe and evaluate their own and other peoples scientific ideas related to topics in the national curriculum (including ideas that have changed over time), using evidence from a range of sources (We're Evolving) (We are Dinosaur Hunters)
- Group and classify things and recognise patterns (Classifying Critters)
- Find things out using a wide range of secondary sources of information (Let it Shine) (We are Dinosaur Hunters)
- Use appropriate scientific language and ideas from the national curriculum to explain, evaluate and communicate his/her methods and findings (Let it Shine) (We are Dinosaur Hunters)

#### Animals, Including Humans

- Identify and name the main parts of the human circulatory system and describe the functions of the heart, blood vessels and blood (Staying Alive)
- Recognise the impact of diet and exercise, drugs and lifestyle on the way their bodies function (Staying Alive)
- Describe the ways in which nutrients and water are transported within animals, including humans (Staying Alive) (classifying critters)



### **Electricity**

- Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit (Electrifying)
- 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 (Electrifying)
- Use recognised symbols when representing a simple circuit in a diagram (Electrifying)

### **Evolution and Inheritance**

- Recognise that living things have changed over time that fossils provide information about living things that inhabited the Earth millions of years ago (classifying critters) (We're Evolving) (We are Dinosaur Hunters)
- Recognise that living things produce offspring of the same kind but normally offspring vary and are not identical to their parents (classifying critters) (We're Evolving)
- Identify how animals and planets are adapted to suit their environment in different ways and that adaptations may lead to evolution (We're Evolving)

### **Light**

- Recognise that light appears to travel in straight lines (Let it Shine)
- 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 (Let it Shine)
- 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 (Let it Shine)
- Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them (Let it Shine)

### **Classification**

- 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 (Classifying Critters) (We're Evolving)
- Give reasons for classifying plants and animals based on specific characteristics and based on similarities and differences, including micro-organisms, plants and animals (Classifying Critters)
- Give reasons for classifying plants and animals based on specific characteristics (Classifying Critters)



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