

St. Augustine's Primary School – Whole School Science Overview

Early Years	Statements	As taught
EYFS	<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>Personal, Social and Emotional Development</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 • tooth-brushing • sensible amounts of 'screen time' • having a good sleep routine • being a safe pedestrian <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. • Understand the effect of changing seasons on the natural world around them. 	<p style="text-align: center;"><u>Understanding the World</u></p> <p><u>Autumn</u></p> <ul style="list-style-type: none"> • All About Me which focuses on labelling parts of the body= linking to KS1 Animals including humans. • Autumn – looking at the changes occurring in the natural world around us – linking to KS1 Seasons. • Winter – looking at the changes from Autumn into Winter – linking to KS1 Seasons. <p><u>Spring</u></p> <ul style="list-style-type: none"> • Frozen Kingdom – focusing on Antarctic and Arctic Animals and people who live in this environment – linking to Animals including human and Seasons. • Spring – looking at the changes from Winter into Spring – linking to KS1 Seasons. • People Who Help Us – this includes Doctors, Nurses, Paramedics and Vets linking to KS1 Animals including humans and Shop Keepers such as Flower Shops and Garden Centres linking to KS1 Plants. <p><u>Summer</u></p> <ul style="list-style-type: none"> • Plants – focusing on investigating and identifying signs of growth within our natural world. Planting seeds and experimenting growing runner bean seeds in a clear plastic bag to investigate root, shoot and plant growth. Identifying what a plant needs to grow and naming key parts of a plant – linking to KS1 Plants. • New Life – focusing on identifying signs of new life such as baby animals – linking to KS1 Animals including humans. I have in the past investigated chicks hatching and observing caterpillars turning into butterflies. • Summer – looking at the changes from Spring into Summer – linking to KS1 Seasons.

			<ul style="list-style-type: none">• Under the Sea – focusing on identifying different types of sea creatures – linking to KS1 – Animals including humans. <p>Throughout the year, also try to incorporate Everyday Materials. Focus on the difference between man-made materials and those found in the natural world. During Small World Play and other activities, include lots of natural found objects like conkers, leaves, pine cones, bark etc.</p>
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Year Group/Unit of Study		Working Scientifically	Key Knowledge
Year 1	1 Animals including Humans	<p>Asking Questions and Carrying Out Fair and Comparative Tests</p> <ul style="list-style-type: none"> begin to recognise ways in which they might answer scientific questions; ask people questions and use simple secondary sources to find answers; carry out simple practical tests, using simple equipment; experience different types of scientific enquiries, including practical activities; <p>Observing and Measuring Changes</p> <ul style="list-style-type: none"> observe the natural and humanly constructed world around them; make careful observations, sometimes using equipment to help them observe carefully. <p>Identifying, Classifying, Recording and Presenting Data</p> <ul style="list-style-type: none"> use simple features to compare objects, materials and living things; decide how to sort and classify objects into simple groups with some help; record and communicate findings in a range of ways with support; sort, group, gather and record data in a variety of ways to help in answering questions such as in simple sorting diagrams, pictograms, tally charts, block diagrams and simple tables <p>Drawing Conclusions, Noticing Patterns and Presenting Findings</p> <ul style="list-style-type: none"> begin to notice patterns and relationships with support; begin to draw simple conclusions; use simple and scientific language; 	<ul style="list-style-type: none"> 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

	<ul style="list-style-type: none"> • read and spell scientific vocabulary at a level consistent with their increasing word reading and spelling knowledge at key stage 1; • talk about their findings to a variety of audiences in a variety of ways. 		
	<p>Key Vocabulary: Bold for new words. Not bold for previous words. amphibians Birds, fish, mammals, reptiles, carnivore, herbivore, sight, hearing, touch, taste, smell</p>	<p>Links: Builds on – Understanding the world Foundation for – animals including humans (all year groups)</p>	<p>Adaptations made – Who – Sir David Attenborough, Charles Henry Turner</p>
<p>2 Seasonal Changes</p>	<p>Asking Questions and Carrying Out Fair and Comparative Tests</p> <ul style="list-style-type: none"> • explore the world around them, leading them to ask some simple scientific questions about how and why things happen; • begin to recognise ways in which they might answer scientific questions; • ask people questions and use simple secondary sources to find answers; • carry out simple practical tests, using simple equipment; • experience different types of scientific enquiries, including practical activities; • talk about the aim of scientific tests they are working on. <p>Observing and Measuring Changes</p> <ul style="list-style-type: none"> • observe the natural and humanly constructed world around them; • observe changes over time; • use simple measurements and equipment; • make careful observations, sometimes using equipment to help them observe carefully. <p>Identifying, Classifying, Recording and Presenting Data</p> <ul style="list-style-type: none"> • use simple features to compare objects, materials and living things; 		<ul style="list-style-type: none"> • observe changes across the 4 seasons • observe and describe weather associated with the seasons and how day length varies

	<ul style="list-style-type: none"> record and communicate findings in a range of ways with support; sort, group, gather and record data in a variety of ways to help in answering questions such as in simple sorting diagrams, pictograms, tally charts, block diagrams and simple tables <p>Drawing Conclusions, Noticing Patterns and Presenting Findings</p> <ul style="list-style-type: none"> begin to notice patterns and relationships with support; begin to draw simple conclusions; identify and discuss differences between their results; use simple and scientific language; read and spell scientific vocabulary at a level consistent with their increasing word reading and spelling knowledge at key stage 1; talk about their findings to a variety of audiences in a variety of ways. 		
	<p>Key Vocabulary: Bold for new words. Not bold for previous words. Seasons, autumn winter, spring, summer, weather, daylight.</p>	<p>Links: Builds on – Explore the natural world around them. Describe what they see, hear and feel while they are outside. Understand the effect of changing seasons on the natural world around them. Foundation for – weather understanding, living things and their habitats</p>	<p>Adaptations made – Who – Autumn/Winter - Greta Thunberg (changes to seasons) Spring/Summer – Chris Packham</p>
<p>3 Everyday Materials</p>	<p>Asking Questions and Carrying Out Fair and Comparative Tests</p> <ul style="list-style-type: none"> begin to recognise ways in which they might answer scientific questions; carry out simple practical tests, using simple equipment; experience different types of scientific enquiries, including practical activities; talk about the aim of scientific tests they are working on. <p>Observing and Measuring Changes</p>	<ul style="list-style-type: none"> 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 	

	<ul style="list-style-type: none"> observe the natural and humanly constructed world around them; make careful observations, sometimes using equipment to help them observe carefully. <p>Identifying, Classifying, Recording and Presenting Data</p> <ul style="list-style-type: none"> use simple features to compare objects, materials and living things; decide how to sort and classify objects into simple groups with some help; record and communicate findings in a range of ways with support; sort, group, gather and record data in a variety of ways to help in answering questions such as in simple sorting diagrams, pictograms, tally charts, block diagrams and simple tables <p>Drawing Conclusions, Noticing Patterns and Presenting Findings</p> <ul style="list-style-type: none"> begin to draw simple conclusions; identify and discuss differences between their results; use simple and scientific language; read and spell scientific vocabulary at a level consistent with their increasing word reading and spelling knowledge at key stage 1; talk about their findings to a variety of audiences in a variety of ways. 		
	<p>Key Vocabulary: Bold for new words. Not bold for previous words. Object, material, hard, soft, stretchy, shiny , dull, rough, smooth, bendy, not bendy Waterproof, not waterproof, absorbent, not absorbent, transparent, opaque</p>	<p>Links: Builds on – Explore the natural world around them. Foundation for – use of every day materials year 2, rocks and magnets year 3, states of matter year 4, properties and changes of material year 5</p>	<p>Adaptations made – Sarah Guppy WOW – design using recycled materials</p>
<p>4 Plants</p>	<p>Asking Questions and Carrying Out Fair and Comparative Tests</p>	<ul style="list-style-type: none"> identify and name a variety of common wild and garden plants, including deciduous and evergreen trees 	

- explore the world around them, leading them to ask some simple scientific questions about how and why things happen;
- begin to recognise ways in which they might answer scientific questions;
- carry out simple practical tests, using simple equipment;
- experience different types of scientific enquiries, including practical activities;
- talk about the aim of scientific tests they are working on.

Observing and Measuring Changes

- observe the natural and humanly constructed world around them;
- observe changes over time;
- use simple measurements and equipment;
- make careful observations, sometimes using equipment to help them observe carefully.

Identifying, Classifying, Recording and Presenting Data

- use simple features to compare objects, materials and living things;
- decide how to sort and classify objects into simple groups with some help;
- record and communicate findings in a range of ways with support;
- sort, group, gather and record data in a variety of ways to help in answering questions such as in simple sorting diagrams, pictograms, tally charts, block diagrams and simple tables

Drawing Conclusions, Noticing Patterns and Presenting Findings

- notice links between cause and effect with support;
- begin to notice patterns and relationships with support;
- begin to draw simple conclusions;
- use simple and scientific language;
- read and spell scientific vocabulary at a level consistent with their increasing word reading and spelling knowledge at key stage 1;

- identify and describe the basic structure of a variety of common flowering plants, including trees

		<ul style="list-style-type: none"> talk about their findings to a variety of audiences in a variety of ways. 		
		<p>Key Vocabulary: Bold for new words. Not bold for previous words. wild plants, garden plants, weed, deciduous, evergreen, roots, stem, leaves, flowers, petals, fruit, seed, bulb</p>	<p>Links: Builds on – Explore the natural world around them. Describe what they see, hear and feel while they are outside. Foundation for – plants year 2 and 3, living things and their habitats year 2, 3, 4, 5, 6</p>	<p>Adaptations made - WHO – Arit Anderson WOW – plant diary and bulb dissection</p>

Year 2	<p>1 Uses of Everyday Materials</p>	<p>Asking Questions and Carrying Out Fair and Comparative Tests</p> <ul style="list-style-type: none"> • explore the world around them, leading them to ask some simple scientific questions about how and why things happen; • begin to recognise ways in which they might answer scientific questions; • carry out simple practical tests, using simple equipment; • experience different types of scientific enquiries, including practical activities; • talk about the aim of scientific tests they are working on. • <p>Observing and Measuring Changes</p> <ul style="list-style-type: none"> • observe the natural and humanly constructed world around them; • make careful observations, sometimes using equipment to help them observe carefully. <p>Identifying, Classifying, Recording and Presenting Data</p> <ul style="list-style-type: none"> • use simple features to compare objects, materials and living things; • decide how to sort and classify objects into simple groups with some help; • record and communicate findings in a range of ways with support; • sort, group, gather and record data in a variety of ways to help in answering questions such as in simple sorting diagrams, pictograms, tally charts, block diagrams and simple tables <p>Drawing Conclusions, Noticing Patterns and Presenting Findings</p> <ul style="list-style-type: none"> • begin to draw simple conclusions; • identify and discuss differences between their results; • use simple and scientific language; • read and spell scientific vocabulary at a level consistent with their increasing word reading and spelling knowledge at key stage 1; 	<ul style="list-style-type: none"> • 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
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	<ul style="list-style-type: none"> talk about their findings to a variety of audiences in a variety of ways. 		
	<p>Key Vocabulary: Bold for new words. Not bold for previous words. Materials, suitability, properties, squash, twist, stretch, bend</p>	<p>Links: Builds on – Explore the natural world around them. Every day materials year 1. Foundation for – rocks and magnets year 3, states of matter year 4, properties and changes of material year 5</p>	<p>Adaptations made – Who – Stephanie Kwolek Outdoor exploration</p>
<p>2 Living Things and their Habitats</p>	<p>Asking Questions and Carrying Out Fair and Comparative Tests</p> <ul style="list-style-type: none"> explore the world around them, leading them to ask some simple scientific questions about how and why things happen; begin to recognise ways in which they might answer scientific questions; ask people questions and use simple secondary sources to find answers; carry out simple practical tests, using simple equipment; experience different types of scientific enquiries, including practical activities; talk about the aim of scientific tests they are working on. <p>Observing and Measuring Changes</p> <ul style="list-style-type: none"> observe the natural and humanly constructed world around them; make careful observations, sometimes using equipment to help them observe carefully. <p>Identifying, Classifying, Recording and Presenting Data</p> <ul style="list-style-type: none"> use simple features to compare objects, materials and living things; decide how to sort and classify objects into simple groups with some help; record and communicate findings in a range of ways with support; sort, group, gather and record data in a variety of ways to help in answering questions such as in simple sorting diagrams, pictograms, tally charts, block diagrams and simple tables 	<ul style="list-style-type: none"> 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 	

	<p>Drawing Conclusions, Noticing Patterns and Presenting Findings</p> <ul style="list-style-type: none"> notice links between cause and effect with support; begin to notice patterns and relationships with support; begin to draw simple conclusions; identify and discuss differences between their results; use simple and scientific language; read and spell scientific vocabulary at a level consistent with their increasing word reading and spelling knowledge at key stage 1; talk about their findings to a variety of audiences in a variety of ways. 		
	<p>Key Vocabulary: Bold for new words. Not bold for previous words. Life processes, living, dead, food chain, food processes, habitat, microhabitat, depend, survive</p>	<p>Links: Builds on – Explore the natural world around them. Describe what they see, hear and feel while they are outside. Understand the effect of changing seasons on the natural world around them. Plants year 1. Foundation for – plants 3, living things and their habitats year 3, 4, 5, 6.</p>	<p>Adaptations made – WOW- identifying mini-beasts and a bug hunt. Who – Rachel Carson</p>
<p>3 Plants</p>	<p>Asking Questions and Carrying Out Fair and Comparative Tests</p> <ul style="list-style-type: none"> explore the world around them, leading them to ask some simple scientific questions about how and why things happen; begin to recognise ways in which they might answer scientific questions; carry out simple practical tests, using simple equipment; experience different types of scientific enquiries, including practical activities; talk about the aim of scientific tests they are working on. <p>Observing and Measuring Changes</p> <ul style="list-style-type: none"> observe the natural and humanly constructed world around them; observe changes over time; 		<ul style="list-style-type: none"> 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

		<ul style="list-style-type: none"> • use simple measurements and equipment; • make careful observations, sometimes using equipment to help them observe carefully. <p>Identifying, Classifying, Recording and Presenting Data</p> <ul style="list-style-type: none"> • use simple features to compare objects, materials and living things; • record and communicate findings in a range of ways with support; • sort, group, gather and record data in a variety of ways to help in answering questions such as in simple sorting diagrams, pictograms, tally charts, block diagrams and simple tables <p>Drawing Conclusions, Noticing Patterns and Presenting Findings</p> <ul style="list-style-type: none"> • notice links between cause and effect with support; • begin to notice patterns and relationships with support; • begin to draw simple conclusions; • identify and discuss differences between their results; • use simple and scientific language; • read and spell scientific vocabulary at a level consistent with their increasing word reading and spelling knowledge at key stage 1; • talk about their findings to a variety of audiences in a variety of ways. 	
	<p>Key Vocabulary: Bold for new words. Not bold for previous words – seed dispersal, shoot, sprout, germination, nutrition, sunlight, water, temperature.</p>	<p>Links: Builds on – Explore the natural world around them. Describe what they see, hear and feel while they are outside. Understand the effect of changing seasons on the natural world around them. Plants year 1. Foundation for – plants 3, living things and their habitats year 3, 4, 5, 6</p>	<p>Adaptations made – WOW - Planting and growing seeds Who – George Washington Carver</p>

4
Animals
Including
Humans

Asking Questions and Carrying Out Fair and Comparative Tests

- explore the world around them, leading them to ask some simple scientific questions about how and why things happen;
- begin to recognise ways in which they might answer scientific questions;
- ask people questions and use simple secondary sources to find answers;
- carry out simple practical tests, using simple equipment;
- experience different types of scientific enquiries, including practical activities;

Observing and Measuring Changes

- observe changes over time;
- use simple measurements and equipment;
- make careful observations, sometimes using equipment to help them observe carefully.

Identifying, Classifying, Recording and Presenting Data

- use simple features to compare objects, materials and living things;
- decide how to sort and classify objects into simple groups with some help;
- record and communicate findings in a range of ways with support;
- sort, group, gather and record data in a variety of ways to help in answering questions such as in simple sorting diagrams, pictograms, tally charts, block diagrams and simple tables

Drawing Conclusions, Noticing Patterns and Presenting Findings

- notice links between cause and effect with support;
- begin to notice patterns and relationships with support;
- begin to draw simple conclusions;
- identify and discuss differences between their results;
- use simple and scientific language;

- 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

	<ul style="list-style-type: none"> • read and spell scientific vocabulary at a level consistent with their increasing word reading and spelling knowledge at key stage 1; • talk about their findings to a variety of audiences in a variety of ways. 		
	<p>Key Vocabulary: Bold for new words. Not bold for previous words. Adult, Develop, life cycle, offspring, young, live young, diet, disease, exercise, germs, hygiene , nutrition, pulse</p>	<p>Links: Builds on – Understanding the world, animals including humans year 1. Foundation for – animals including humans (all year groups)</p>	<p>Adaptations made – Who – Jane Goodall</p>
<p>5 Additional module - The environment</p>	<p>Information on climate change – reuse, recycle, helping the environment, living as global citizens.</p> <p>Asking Questions and Carrying Out Fair and Comparative Tests</p> <ul style="list-style-type: none"> • explore the world around them, leading them to ask some simple scientific questions about how and why things happen; • begin to recognise ways in which they might answer scientific questions; • ask people questions and use simple secondary sources to find answers; • carry out simple practical tests, using simple equipment; • experience different types of scientific enquiries, including practical activities; • talk about the aim of scientific tests they are working on. <p>Observing and Measuring Changes</p> <ul style="list-style-type: none"> • observe the natural and humanly constructed world around them; • observe changes over time; • use simple measurements and equipment; <p>Identifying, Classifying, Recording and Presenting Data</p> <ul style="list-style-type: none"> • use simple features to compare objects, materials and living things; • decide how to sort and classify objects into simple groups with some help; • record and communicate findings in a range of ways with support; • sort, group, gather and record data in a variety of ways to help in answering questions such as in simple sorting diagrams, pictograms, tally charts, block diagrams and simple tables <p>Drawing Conclusions, Noticing Patterns and Presenting Findings</p> <ul style="list-style-type: none"> • notice links between cause and effect with support; 		

		<ul style="list-style-type: none">• begin to notice patterns and relationships with support;• begin to draw simple conclusions;• identify and discuss differences between their results;• use simple and scientific language;• read and spell scientific vocabulary at a level consistent with their increasing word reading and spelling knowledge at key stage 1;• talk about their findings to a variety of audiences in a variety of ways.
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Year 3	<p>1 Plants</p>	<p>Asking Questions and Carrying Out Fair and Comparative Tests</p> <ul style="list-style-type: none"> • start to raise their own relevant questions about the world around them in response to a range of scientific experiences; • recognise when a fair test is necessary; • help decide how to set up a fair test, making decisions about what observations to make, how long to make them for and the type of simple equipment that might be used; • set up and carry out simple comparative and fair tests. <p>Observing and Measuring Changes</p> <ul style="list-style-type: none"> • make systematic and careful observations; • observe changes over time; • use a range of equipment, including thermometers and data loggers; • ask their own questions about what they observe; • where appropriate, take accurate measurements using standard units using a range of equipment. <p>Identifying, Classifying, Recording and Presenting Data</p> <ul style="list-style-type: none"> • collect data from their own observations and measurements; • present data in a variety of ways to help in answering questions; • use, read and spell scientific vocabulary correctly and with confidence, using their growing word reading and spelling knowledge; • record findings using scientific language, drawings, labelled diagrams, keys, bar charts and tables. <p>Drawing Conclusions, Noticing Patterns and Presenting Findings</p> <ul style="list-style-type: none"> • draw simple conclusions from their results; • make predictions; • first talk about, and then go on to write about, what they have found out; • report and present their results and conclusions to others in written and oral forms with increasing confidence. 	<ul style="list-style-type: none"> • 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
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	<p>Using Scientific Evidence and Secondary Sources of Information</p> <ul style="list-style-type: none"> • make links between their own science results and other scientific evidence; • use straightforward scientific evidence to answer questions or support their findings; • identify similarities, differences, patterns and changes relating to simple scientific ideas and processes; 		
	<p>Key Vocabulary: Bold for new words. Not bold for previous words – roots, stem, leaves, flowers, nutrients, evaporation. Fertilisation, petal, stamen, carpel, sepal, pollination, pollinator, germination, seed dispersal.</p>	<p>Links: Builds on – Explore the natural world around them. Describe what they see, hear and feel while they are outside. Understand the effect of changing seasons on the natural world around them. Plants year 1 and 2. Living things and their habitats year 2. Foundation for – living things and their habitats year 4, 5, 6</p>	<p>Adaptations made – Who – George Washington Carver (building on year 2) WOW – grow own plant (building on year 2)</p>
<p>2 Animals Including Humans</p>	<p>Asking Questions and Carrying Out Fair and Comparative Tests</p> <ul style="list-style-type: none"> • start to raise their own relevant questions about the world around them in response to a range of scientific experiences; • start to make their own decisions about the most appropriate type of scientific enquiry they might use to answer questions; • recognise when a fair test is necessary; • help decide how to set up a fair test, making decisions about what observations to make, how long to make them for and the type of simple equipment that might be used; • set up and carry out simple comparative and fair tests. <p>Observing and Measuring Changes</p> <ul style="list-style-type: none"> • make systematic and careful observations; • use a range of equipment, including thermometers and data loggers; • ask their own questions about what they observe; 	<ul style="list-style-type: none"> • 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 	

- where appropriate, take accurate measurements using standard units using a range of equipment.

Identifying, Classifying, Recording and Presenting Data

- talk about criteria for grouping, sorting and classifying;
- group and classify things;
- collect data from their own observations and measurements;
- present data in a variety of ways to help in answering questions;
- use, read and spell scientific vocabulary correctly and with confidence, using their growing word reading and spelling knowledge;
- record findings using scientific language, drawings, labelled diagrams, keys, bar charts and tables.

Drawing Conclusions, Noticing Patterns and Presenting Findings

- draw simple conclusions from their results;
- make predictions;
- suggest improvements to investigations;
- raise further questions which could be investigated;
- first talk about, and then go on to write about, what they have found out;
- report and present their results and conclusions to others in written and oral forms with increasing confidence.

Using Scientific Evidence and Secondary Sources of Information

- use straightforward scientific evidence to answer questions or support their findings;
- identify similarities, differences, patterns and changes relating to simple scientific ideas and processes;

Key Vocabulary:
Bold for new words.
 Not bold for previous words – healthy, nutrients, energy, **saturated fats, unsaturated**

Links: Builds on – Understanding the world, animals including humans year 1 and 2.
 Foundation for – animals including humans (all year groups)

Adaptations made –
 Who – Malinda Russell
 WOW – make a skeleton and make it move

fats, vertebrate, invertebrate, muscles, tendons, joints.

3
Rocks

Asking Questions and Carrying Out Fair and Comparative Tests

- start to raise their own relevant questions about the world around them in response to a range of scientific experiences;
- set up and carry out simple comparative and fair tests.

Observing and Measuring Changes

- make systematic and careful observations;
- observe changes over time;
- use a range of equipment, including thermometers and data loggers;
- ask their own questions about what they observe;
- where appropriate, take accurate measurements using standard units using a range of equipment.

Identifying, Classifying, Recording and Presenting Data

- talk about criteria for grouping, sorting and classifying;
- group and classify things;
- collect data from their own observations and measurements;
- present data in a variety of ways to help in answering questions;
- use, read and spell scientific vocabulary correctly and with confidence, using their growing word reading and spelling knowledge;
- record findings using scientific language, drawings, labelled diagrams, keys, bar charts and tables.

Drawing Conclusions, Noticing Patterns and Presenting Findings

- draw simple conclusions from their results;
- make predictions;
- first talk about, and then go on to write about, what they have found out;
- report and present their results and conclusions to others in written and oral forms with increasing confidence.

- 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

	<p>Using Scientific Evidence and Secondary Sources of Information</p> <ul style="list-style-type: none"> • make links between their own science results and other scientific evidence; • identify similarities, differences, patterns and changes relating to simple scientific ideas and processes; • recognise when and how secondary sources might help them to answer questions that cannot be answered through practical investigations. 		
	<p>Key Vocabulary: Bold for new words. Not bold for previous words – igneous rocks, sedimentary rocks, metamorphic rocks, magma, lava, sediment, permeable, impermeable, fossilisation, palaeontology, erosion.</p>	<p>Links: Builds on – Explore the natural world around them. Every day materials year 1 and 2. Foundation for – states of matter year 4, properties and changes of material year 5, fossils year 6.</p>	<p>Adaptations made – Who – Mary Anning WOW – make own soil</p>
<p>4 Light</p>	<p>Asking Questions and Carrying Out Fair and Comparative Tests</p> <ul style="list-style-type: none"> • start to raise their own relevant questions about the world around them in response to a range of scientific experiences; • help decide how to set up a fair test, making decisions about what observations to make, how long to make them for and the type of simple equipment that might be used; • set up and carry out simple comparative and fair tests. <p>Observing and Measuring Changes</p> <ul style="list-style-type: none"> • make systematic and careful observations; • use a range of equipment, including thermometers and data loggers; • ask their own questions about what they observe; • where appropriate, take accurate measurements using standard units using a range of equipment. <p>Identifying, Classifying, Recording and Presenting Data</p> <ul style="list-style-type: none"> • group and classify things; 	<ul style="list-style-type: none"> • 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 	

	<ul style="list-style-type: none"> • collect data from their own observations and measurements; • present data in a variety of ways to help in answering questions; • use, read and spell scientific vocabulary correctly and with confidence, using their growing word reading and spelling knowledge; • record findings using scientific language, drawings, labelled diagrams, keys, bar charts and tables. <p>Drawing Conclusions, Noticing Patterns and Presenting Findings</p> <ul style="list-style-type: none"> • draw simple conclusions from their results; • make predictions; • first talk about, and then go on to write about, what they have found out; • report and present their results and conclusions to others in written and oral forms with increasing confidence. <p>Using Scientific Evidence and Secondary Sources of Information</p> <ul style="list-style-type: none"> • make links between their own science results and other scientific evidence; • use straightforward scientific evidence to answer questions or support their findings; • identify similarities, differences, patterns and changes relating to simple scientific ideas and processes; 		
	<p>Key Vocabulary: Bold for new words. Not bold for previous words – light, light source, dark, reflection, reflective, reflect, ray, pupil, retina, shadow, opaque, translucent, transparent.</p>	<p>Links: Builds on – Explore the natural world around them. Every day materials year 1 and 2. Foundation for – electricity year 4, materials year 5, light year 6.</p>	<p>Adaptations made – Who – Thomas Eddidson WOW – investigation to block out light Cross-curricular with English – Marie Curie in science week</p>
<p>5 Forces and Magnets</p>	<p>Asking Questions and Carrying Out Fair and Comparative Tests</p> <ul style="list-style-type: none"> • start to raise their own relevant questions about the world around them in response to a range of scientific experiences; • set up and carry out simple comparative and fair tests. 	<ul style="list-style-type: none"> • 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 	

Observing and Measuring Changes

- make systematic and careful observations;
- use a range of equipment, including thermometers and data loggers;
- ask their own questions about what they observe;

Identifying, Classifying, Recording and Presenting Data

- group and classify things;
- collect data from their own observations and measurements;
- present data in a variety of ways to help in answering questions;
- use, read and spell scientific vocabulary correctly and with confidence, using their growing word reading and spelling knowledge;
- record findings using scientific language, drawings, labelled diagrams, keys, bar charts and tables.

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Drawing Conclusions, Noticing Patterns and Presenting Findings

- draw simple conclusions from their results;
- make predictions;
- first talk about, and then go on to write about, what they have found out;
- report and present their results and conclusions to others in written and oral forms with increasing confidence.

Using Scientific Evidence and Secondary Sources of Information

- make links between their own science results and other scientific evidence;
- identify similarities, differences, patterns and changes relating to simple scientific ideas and processes;
- recognise when and how secondary sources might help them to answer questions that cannot be answered through practical investigations.

- 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

	<p>Key Vocabulary: Bold for new words. Not bold for previous words – forces, friction, surfaces, magnet, magnetic, magnetic field, poles, repel, attract</p>	<p>Links: Builds on – Explore the natural world around them. Every day materials year 1 and 2. Foundation for – forces year 5.</p>	<p>Adaptations made – Who – Isaac Newtown WOW – investigation into strength of magnets</p>

Year 4	<p>1 States of Matter</p>	<p>Asking Questions and Carrying Out Fair and Comparative Tests</p> <ul style="list-style-type: none"> • start to make their own decisions about the most appropriate type of scientific enquiry they might use to answer questions; • recognise when a fair test is necessary; • help decide how to set up a fair test, making decisions about what observations to make, how long to make them for and the type of simple equipment that might be used; • set up and carry out simple comparative and fair tests. <p>Observing and Measuring Changes</p> <ul style="list-style-type: none"> • make systematic and careful observations; • observe changes over time; • use a range of equipment, including thermometers and data loggers; • ask their own questions about what they observe; • where appropriate, take accurate measurements using standard units using a range of equipment. <p>Identifying, Classifying, Recording and Presenting Data</p> <ul style="list-style-type: none"> • group and classify things; • collect data from their own observations and measurements; • present data in a variety of ways to help in answering questions; • use, read and spell scientific vocabulary correctly and with confidence, using their growing word reading and spelling knowledge; • record findings using scientific language, drawings, labelled diagrams, keys, bar charts and tables. <p>Drawing Conclusions, Noticing Patterns and Presenting Findings</p> <ul style="list-style-type: none"> • draw simple conclusions from their results; • make predictions; • suggest improvements to investigations; • raise further questions which could be investigated; 	<ul style="list-style-type: none"> • 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
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	<ul style="list-style-type: none"> • first talk about, and then go on to write about, what they have found out; • report and present their results and conclusions to others in written and oral forms with increasing confidence. <p>Using Scientific Evidence and Secondary Sources of Information</p> <ul style="list-style-type: none"> • make links between their own science results and other scientific evidence; • use straightforward scientific evidence to answer questions or support their findings; • identify similarities, differences, patterns and changes relating to simple scientific ideas and processes; 		
	<p>Key Vocabulary: Bold for new words. Not bold for previous words – states of matter, solids, liquid, gas, water vapour, melt, freeze, evaporate, condense, precipitation.</p>	<p>Links: Builds on – Explore the natural world around them. Every day materials year 1 and 2. Foundation for – properties and changes of material year 5</p>	<p>Adaptations made – Who – Chien-Shiung Wu WOW - investigation</p>
<p>2 Living Things and Their Habitats</p>	<p>Asking Questions and Carrying Out Fair and Comparative Tests</p> <ul style="list-style-type: none"> • start to raise their own relevant questions about the world around them in response to a range of scientific experiences; <p>Observing and Measuring Changes</p> <ul style="list-style-type: none"> • make systematic and careful observations; • use a range of equipment, including thermometers and data loggers; • where appropriate, take accurate measurements using standard units using a range of equipment. <p>Identifying, Classifying, Recording and Presenting Data</p> <ul style="list-style-type: none"> • talk about criteria for grouping, sorting and classifying; • group and classify things; • collect data from their own observations and measurements; 	<ul style="list-style-type: none"> • 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 	

	<ul style="list-style-type: none"> • present data in a variety of ways to help in answering questions; • use, read and spell scientific vocabulary correctly and with confidence, using their growing word reading and spelling knowledge; • record findings using scientific language, drawings, labelled diagrams, keys, bar charts and tables. <p>Drawing Conclusions, Noticing Patterns and Presenting Findings</p> <ul style="list-style-type: none"> • first talk about, and then go on to write about, what they have found out; <p>Using Scientific Evidence and Secondary Sources of Information</p> <ul style="list-style-type: none"> • make links between their own science results and other scientific evidence; • use straightforward scientific evidence to answer questions or support their findings; • identify similarities, differences, patterns and changes relating to simple scientific ideas and processes; • recognise when and how secondary sources might help them to answer questions that cannot be answered through practical investigations. 		
	<p>Key Vocabulary: Bold for new words. Not bold for previous words – organisms, life processes, respiration, sensitivity, reproduction, excretion, nutrition, habitat, environment, endangered species, extinct, classification, vertebrates, invertebrates, specimen, characteristics.</p>	<p>Links: Builds on – Explore the natural world around them. Describe what they see, hear and feel while they are outside. Understand the effect of changing seasons on the natural world around them. Seasonal changes year 1, Plants year 1, 2, 3. Living things and their habitats year 2. Foundation for – living things and their habitats year 5, 6</p>	<p>Adaptations made – Who – Maria Sibylla Merian WOW – live insect ecosystem</p>
<p>3 Sound</p>	<p>Asking Questions and Carrying Out Fair and Comparative Tests</p> <ul style="list-style-type: none"> • start to raise their own relevant questions about the world around them in response to a range of scientific experiences; 	<ul style="list-style-type: none"> • identify how sounds are made, associating some of them with something vibrating • recognise that vibrations from sounds travel through a medium to the ear 	

		<ul style="list-style-type: none"> • set up and carry out simple comparative and fair tests. <p>Observing and Measuring Changes</p> <ul style="list-style-type: none"> • make systematic and careful observations; • use a range of equipment, including thermometers and data loggers; • ask their own questions about what they observe; • where appropriate, take accurate measurements using standard units using a range of equipment. <p>Identifying, Classifying, Recording and Presenting Data</p> <ul style="list-style-type: none"> • collect data from their own observations and measurements; • use, read and spell scientific vocabulary correctly and with confidence, using their growing word reading and spelling knowledge; • record findings using scientific language, drawings, labelled diagrams, keys, bar charts and tables. <p>Drawing Conclusions, Noticing Patterns and Presenting Findings</p> <ul style="list-style-type: none"> • draw simple conclusions from their results; • first talk about, and then go on to write about, what they have found out; • report and present their results and conclusions to others in written and oral forms with increasing confidence. <p>Using Scientific Evidence and Secondary Sources of Information</p> <ul style="list-style-type: none"> • make links between their own science results and other scientific evidence; • use straightforward scientific evidence to answer questions or support their findings; • identify similarities, differences, patterns and changes relating to simple scientific ideas and processes; • 	<ul style="list-style-type: none"> • 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
	<p>Key Vocabulary: Bold for new words.</p>	<p>Links: Builds on – Explore the natural world around them. Every day materials year 1 and 2.</p>	<p>Adaptations made – Who – Thomas Edison WOW – Sound party</p>

	<p>Not bold for previous words – vibration, sound wave, volume, amplitude, pitch, ear, particles, distance, soundproof, absorb sound, vacuum, eardrum</p>	<p>Foundation for – not continued in ks2.</p>	
<p>4 Animals Including Humans</p>	<p>Asking Questions and Carrying Out Fair and Comparative Tests</p> <ul style="list-style-type: none"> • start to raise their own relevant questions about the world around them in response to a range of scientific experiences; • start to make their own decisions about the most appropriate type of scientific enquiry they might use to answer questions; • recognise when a fair test is necessary; • help decide how to set up a fair test, making decisions about what observations to make, how long to make them for and the type of simple equipment that might be used; • set up and carry out simple comparative and fair tests. <p>Observing and Measuring Changes</p> <ul style="list-style-type: none"> • make systematic and careful observations; • observe changes over time; • use a range of equipment, including thermometers and data loggers; <p>Identifying, Classifying, Recording and Presenting Data</p> <ul style="list-style-type: none"> • collect data from their own observations and measurements; • present data in a variety of ways to help in answering questions; • use, read and spell scientific vocabulary correctly and with confidence, using their growing word reading and spelling knowledge; • record findings using scientific language, drawings, labelled diagrams, keys, bar charts and tables. <p>Drawing Conclusions, Noticing Patterns and Presenting Findings</p> <ul style="list-style-type: none"> • draw simple conclusions from their results; • make predictions; • suggest improvements to investigations; 	<ul style="list-style-type: none"> • describe the simple functions of the basic parts of the digestive system in humans • identify the different types of teeth in humans and their simple functions • construct and interpret a variety of food chains, identifying producers, predators and prey 	

		<ul style="list-style-type: none"> • raise further questions which could be investigated; • first talk about, and then go on to write about, what they have found out; • report and present their results and conclusions to others in written and oral forms with increasing confidence. <p>Using Scientific Evidence and Secondary Sources of Information</p> <ul style="list-style-type: none"> • use straightforward scientific evidence to answer questions or support their findings; • identify similarities, differences, patterns and changes relating to simple scientific ideas and processes; • recognise when and how secondary sources might help them to answer questions that cannot be answered through practical investigations. 	
	<p>Key Vocabulary:</p> <p>Bold for new words. Not bold for previous words – digest, oesophagus, stomach, small intestine, large intestine, rectum, herbivore, omnivore, carnivore, producer, predator, prey</p>	<p>Links: Builds on – Understanding the world, animals including humans year 1, 2 and 3. Foundation for – animals including humans (all year groups)</p>	<p>Adaptations made – Who – Rosalind Franklin WOW – toothpaste investigation</p>
<p>5 Electricity</p>	<p>Asking Questions and Carrying Out Fair and Comparative Tests</p> <ul style="list-style-type: none"> • start to raise their own relevant questions about the world around them in response to a range of scientific experiences; • set up and carry out simple comparative and fair tests. <p>Observing and Measuring Changes</p> <ul style="list-style-type: none"> • make systematic and careful observations; • use a range of equipment, including thermometers and data loggers; • ask their own questions about what they observe; <p>Identifying, Classifying, Recording and Presenting Data</p> <ul style="list-style-type: none"> • group and classify things; • collect data from their own observations and measurements; 	<ul style="list-style-type: none"> • 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 	

	<ul style="list-style-type: none"> • present data in a variety of ways to help in answering questions; • use, read and spell scientific vocabulary correctly and with confidence, using their growing word reading and spelling knowledge; • record findings using scientific language, drawings, labelled diagrams, keys, bar charts and tables. <p>Drawing Conclusions, Noticing Patterns and Presenting Findings</p> <ul style="list-style-type: none"> • draw simple conclusions from their results; • make predictions; • first talk about, and then go on to write about, what they have found out; • report and present their results and conclusions to others in written and oral forms with increasing confidence. <p>Using Scientific Evidence and Secondary Sources of Information</p> <ul style="list-style-type: none"> • make links between their own science results and other scientific evidence; • use straightforward scientific evidence to answer questions or support their findings; • identify similarities, differences, patterns and changes relating to simple scientific ideas and processes; • recognise when and how secondary sources might help them to answer questions that cannot be answered through practical investigations. 		
	<p>Key Vocabulary: Bold for new words. Not bold for previous words - electricity, generate, renewable, non-renewable, appliances, battery, circuit.</p>	<p>Links: Builds on – Explore the natural world around them. Every day materials year 1 and 2. Light year 3. Foundation for – materials year 5, light year 6.</p>	<p>Adaptations made – Who – Garrett Morgan Maria Telbes</p>

Year 5	<p>1 Animals Including Humans</p>	<p>Asking Questions and Carrying Out Fair and Comparative Tests</p> <ul style="list-style-type: none"> • with growing independence, raise their own relevant questions about the world around them in response to a range of scientific experiences; • with increasing independence, make their own decisions about the most appropriate type of scientific enquiry they might use to answer questions; • explore and talk about their ideas, raising different kinds of scientific questions; • ask their own questions about scientific phenomena; <p>Observing and Measuring Changes</p> <ul style="list-style-type: none"> • N/A <p>Identifying, Classifying, Recording and Presenting Data</p> <ul style="list-style-type: none"> • independently group, classify and describe living things and materials; • use and develop keys and other information records to identify, classify and describe living things and materials; • decide how to record data from a choice of familiar approaches; • record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar graphs and line graphs <p>Drawing Conclusions, Noticing Patterns and Presenting Findings</p> <ul style="list-style-type: none"> • notice patterns; • draw conclusions based in their data and observations; • use their scientific knowledge and understanding to explain their findings; • read, spell and pronounce scientific vocabulary correctly; • identify patterns that might be found in the natural environment; • look for different causal relationships in their data; • independently report and present their conclusions to others in oral and written forms. 	<ul style="list-style-type: none"> • describe the changes as humans develop to old age
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		<p>Using Scientific Evidence and Secondary Sources of Information</p> <ul style="list-style-type: none"> • use primary and secondary sources evidence to justify ideas; • identify evidence that refutes or supports their ideas; • recognise where secondary sources will be most useful to research ideas and begin to separate opinion from fact; • use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas; 	
		<p>Key Vocabulary: adolescence, puberty, menstruation, adulthood, life expectancy, fertilisation, prenatal, reproduce, asexual reproduction, sexual reproduction, life cycle Bold for new words. Not bold for previous words.</p>	<p>Links: Builds on – Understanding the world, animals including humans year 1, 2, 3 and 4. Foundation for – animals including humans year 6.</p> <p>Adaptations made – WOW – cross-curricular with RSE Who – Elizabeth Blackwell, Elizabeth Garrett Anderson</p>
<p>2 Properties and Changes of Materials</p>		<p>Asking Questions and Carrying Out Fair and Comparative Tests</p> <ul style="list-style-type: none"> • with growing independence, raise their own relevant questions about the world around them in response to a range of scientific experiences; • with increasing independence, make their own decisions about the most appropriate type of scientific enquiry they might use to answer questions; • explore and talk about their ideas, raising different kinds of scientific questions; • ask their own questions about scientific phenomena; • select and plan the most appropriate type of scientific enquiry to use to answer scientific questions; • make their own decisions about what observations to make, what measurements to use and how long to make them for, and whether to repeat them; • plan, set up and carry out comparative and fair tests to answer questions, including recognising and controlling variables where necessary; <p>Observing and Measuring Changes</p> <ul style="list-style-type: none"> • choose the most appropriate equipment to make measurements and explain how to use it accurately; 	<ul style="list-style-type: none"> • 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

	<ul style="list-style-type: none"> • take measurements using a range of scientific equipment with increasing accuracy and precision; • make careful and focused observations; • know the importance of taking repeat readings and take repeat readings where appropriate. <p>Identifying, Classifying, Recording and Presenting Data</p> <ul style="list-style-type: none"> • independently group, classify and describe living things and materials; • record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar graphs and line graphs <p>Drawing Conclusions, Noticing Patterns and Presenting Findings</p> <ul style="list-style-type: none"> • notice patterns; • draw conclusions based in their data and observations; • use their scientific knowledge and understanding to explain their findings; • read, spell and pronounce scientific vocabulary correctly; • look for different causal relationships in their data; • independently report and present their conclusions to others in oral and written forms. <p>Using Scientific Evidence and Secondary Sources of Information</p> <ul style="list-style-type: none"> • use primary and secondary sources evidence to justify ideas; • use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas; 		
	<p>Key Vocabulary: materials, solids, liquids, gases, melting, freezing, evaporating, condensing, conductor, insulator, transparency.</p> <p>Bold for new words.</p> <p>Not bold for previous words.</p>	<p>Links: Builds on – Explore the natural world around them. Every day materials year 1 and 2. Light, rocks, forces and magnets year 3, states of matter and electricity year 4. Foundation for – light and electricity year 6.</p>	<p>Adaptations made – WOW – lots of opportunities to investigate and explore Who – Elijah McCoy</p>
<p>3 Living Things and Their Habitats</p>	<p>Asking Questions and Carrying Out Fair and Comparative Tests</p> <ul style="list-style-type: none"> • explore and talk about their ideas, raising different kinds of scientific questions; . 	<ul style="list-style-type: none"> • describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird 	

<p>(moved to summer 2)</p>	<p>Observing and Measuring Changes</p> <ul style="list-style-type: none"> take measurements using a range of scientific equipment with increasing accuracy and precision; <p>Identifying, Classifying, Recording and Presenting Data</p> <ul style="list-style-type: none"> independently group, classify and describe living things and materials; <p>Drawing Conclusions, Noticing Patterns and Presenting Findings</p> <ul style="list-style-type: none"> read, spell and pronounce scientific vocabulary correctly; identify patterns that might be found in the natural environment; independently report and present their conclusions to others in oral and written forms. <p>Using Scientific Evidence and Secondary Sources of Information</p> <ul style="list-style-type: none"> use primary and secondary sources evidence to justify ideas; recognise where secondary sources will be most useful to research ideas and begin to separate opinion from fact; use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas; 		<ul style="list-style-type: none"> describe the life process of reproduction in some plants and animals
	<p>Key Vocabulary: asexual reproduction, fertilise, gestation, life cycle, metamorphosis, pollination, reproduction, sexual reproduction. Bold for new words. Not bold for previous words.</p>	<p>Links: Builds on – Explore the natural world around them. Describe what they see, hear and feel while they are outside. Understand the effect of changing seasons on the natural world around them. Seasonal changes year 1, Plants year 1, 2, 3. Living things and their habitats year 2 and 4 Foundation for – living things and their habitats year 6</p>	<p>Adaptations made – WOW – building ecosystems (science week) Who - Flemmie Pansy Kittrell</p>
<p>4 Forces</p>	<p>Asking Questions and Carrying Out Fair and Comparative Tests</p> <ul style="list-style-type: none"> explore and talk about their ideas, raising different kinds of scientific questions; 		

- ask their own questions about scientific phenomena;
- make their own decisions about what observations to make, what measurements to use and how long to make them for, and whether to repeat them;
- plan, set up and carry out comparative and fair tests to answer questions, including recognising and controlling variables where necessary;
- use their test results to identify when further tests and observations may be needed;
- use test results to make predictions for further tests.

Observing and Measuring Changes

- choose the most appropriate equipment to make measurements and explain how to use it accurately;
- take measurements using a range of scientific equipment with increasing accuracy and precision;
- know the importance of taking repeat readings and take repeat readings where appropriate.

Identifying, Classifying, Recording and Presenting Data

- record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar graphs and line graphs

Drawing Conclusions, Noticing Patterns and Presenting Findings

- notice patterns;
- draw conclusions based in their data and observations;
- use their scientific knowledge and understanding to explain their findings;
- read, spell and pronounce scientific vocabulary correctly;
- identify patterns that might be found in the natural environment;
- look for different causal relationships in their data;
- independently report and present their conclusions to others in oral and written forms.

Using Scientific Evidence and Secondary Sources of Information

	<ul style="list-style-type: none"> • use primary and secondary sources evidence to justify ideas; • identify evidence that refutes or supports their ideas; • recognise where secondary sources will be most useful to research ideas and begin to separate opinion from fact; • use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas; • talk about how scientific ideas have developed over time. 		
	<p>Key Vocabulary: forces, gravity, earth's gravitational pull, weight, mass, friction, air resistance, water resistance, buoyancy, streamlined, mechanism, up thrust Bold for new words. Not bold for previous words.</p>	<p>Links: Builds on – Explore the natural world around them. Every day materials year 1 and 2. Light, rocks, forces and magnets year 3, states of matter and electricity year 4. Foundation for – ks3</p>	<p>Adaptations made – WOW – designing own machine Boat racing Cross-curricular links with DT for marble run WHO – Newton and Galilee (building on previous learning in year 3)</p>
<p>5 Earth and Space</p>	<p>Asking Questions and Carrying Out Fair and Comparative Tests</p> <ul style="list-style-type: none"> • with growing independence, raise their own relevant questions about the world around them in response to a range of scientific experiences; • with increasing independence, make their own decisions about the most appropriate type of scientific enquiry they might use to answer questions; • explore and talk about their ideas, raising different kinds of scientific questions; • ask their own questions about scientific phenomena; <p>Observing and Measuring Changes</p> <p>N/A</p> <p>Identifying, Classifying, Recording and Presenting Data</p> <ul style="list-style-type: none"> • record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar graphs and line graphs <p>Drawing Conclusions, Noticing Patterns and Presenting Findings</p> <ul style="list-style-type: none"> • notice patterns; • draw conclusions based in their data and observations; 	<ul style="list-style-type: none"> • 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 	

		<ul style="list-style-type: none"> • use their scientific knowledge and understanding to explain their findings; • read, spell and pronounce scientific vocabulary correctly; • identify patterns that might be found in the natural environment; • look for different causal relationships in their data; • independently report and present their conclusions to others in oral and written forms. <p>Using Scientific Evidence and Secondary Sources of Information</p> <ul style="list-style-type: none"> • use primary and secondary sources evidence to justify ideas; • identify evidence that refutes or supports their ideas; • recognise where secondary sources will be most useful to research ideas and begin to separate opinion from fact; • use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas; • talk about how scientific ideas have developed over time. 		
		<p>Key Vocabulary: Sun, star, moon, planet, sphere, spherical bodies, satellite, orbit, rotate, axis, geocentric model, heliocentric model, astronomer Bold for new words. Not bold for previous words.</p>	<p>Links: Builds on – Explore the natural world around them. Describe what they see, hear and feel while they are outside. Understand the effect of changing seasons on the natural world around them. Year 1 seasons and length of day. Foundation for – ks3</p>	<p>Adaptations made – Who – cross-curricular with English Katherine Johnson Mae Jemison</p>
	Short section at end of 5 th module on BEM women in science history -- Renee Gordon, Alexa Irene Canady and Gladysis West			

Year 6	<p>1 Living Things and Their habitats</p> <p>- autumn 2</p>	<p>Asking Questions and Carrying Out Fair and Comparative Tests</p> <ul style="list-style-type: none"> • explore and talk about their ideas, raising different kinds of scientific questions; • select and plan the most appropriate type of scientific enquiry to use to answer scientific questions; • plan, set up and carry out comparative and fair tests to answer questions, including recognising and controlling variables where necessary; <p>Observing and Measuring Changes</p> <ul style="list-style-type: none"> • make careful and focused observations; <p>Identifying, Classifying, Recording and Presenting Data</p> <ul style="list-style-type: none"> • independently group, classify and describe living things and materials; • use and develop keys and other information records to identify, classify and describe living things and materials; • record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar graphs and line graphs <p>Drawing Conclusions, Noticing Patterns and Presenting Findings</p> <ul style="list-style-type: none"> • draw conclusions based in their data and observations; • use their scientific knowledge and understanding to explain their findings; • read, spell and pronounce scientific vocabulary correctly; • identify patterns that might be found in the natural environment; • independently report and present their conclusions to others in oral and written forms. <p>Using Scientific Evidence and Secondary Sources of Information</p> <ul style="list-style-type: none"> • recognise where secondary sources will be most useful to research ideas and begin to separate opinion from fact; • use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas; 	<ul style="list-style-type: none"> • 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
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	<ul style="list-style-type: none"> talk about how scientific ideas have developed over time. 		
	<p>Key Vocabulary: characteristics, classify, taxonomist, key, microorganism, microscope, species. Bold for new words.. Not bold for previous words.</p>	<p>Links: Builds on – Explore the natural world around them. Describe what they see, hear and feel while they are outside. Understand the effect of changing seasons on the natural world around them. Seasonal changes year 1, Plants year 1, 2, 3. Living things and their habitats year 2, 4 and 5. Foundation for – ks3</p>	<p>Adaptations made – WOW – mould investigation WHO – Carl Linnaeus</p>
<p>2 Electricity</p>	<p>Asking Questions and Carrying Out Fair and Comparative Tests</p> <ul style="list-style-type: none"> with growing independence, raise their own relevant questions about the world around them in response to a range of scientific experiences; with increasing independence, make their own decisions about the most appropriate type of scientific enquiry they might use to answer questions; explore and talk about their ideas, raising different kinds of scientific questions; select and plan the most appropriate type of scientific enquiry to use to answer scientific questions; make their own decisions about what observations to make, what measurements to use and how long to make them for, and whether to repeat them; plan, set up and carry out comparative and fair tests to answer questions, including recognising and controlling variables where necessary; use their test results to identify when further tests and observations may be needed; use test results to make predictions for further tests. <p>Observing and Measuring Changes</p> <ul style="list-style-type: none"> make careful and focused observations; <p>Identifying, Classifying, Recording and Presenting Data</p> <ul style="list-style-type: none"> independently group, classify and describe living things and materials; 	<ul style="list-style-type: none"> 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 	

	<ul style="list-style-type: none"> decide how to record data from a choice of familiar approaches; record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar graphs and line graphs <p>Drawing Conclusions, Noticing Patterns and Presenting Findings</p> <ul style="list-style-type: none"> notice patterns; draw conclusions based in their data and observations; use their scientific knowledge and understanding to explain their findings; read, spell and pronounce scientific vocabulary correctly; look for different causal relationships in their data; discuss the degree of trust they can have in a set of results; independently report and present their conclusions to others in oral and written forms. <p>Using Scientific Evidence and Secondary Sources of Information</p> <ul style="list-style-type: none"> recognise where secondary sources will be most useful to research ideas and begin to separate opinion from fact; use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas; talk about how scientific ideas have developed over time. 		
	<p>Key Vocabulary: circuit, symbol, cell/battery, current, amps, voltage, resistance, electrons Bold for new words. Not bold for previous words.</p>	<p>Links: Builds on – Explore the natural world around them. Every day materials year 1 and 2. Light year 3, materials year 5. Foundation for – ks3</p>	<p>Adaptations made – Added in additional investigations on how to affect the brightness of a bulb. WOW – building circuits Who – Lewis H Latimer</p>
<p>3 Animals including Humans</p>	<p>Asking Questions and Carrying Out Fair and Comparative Tests</p> <ul style="list-style-type: none"> with increasing independence, make their own decisions about the most appropriate type of scientific enquiry they might use to answer questions; explore and talk about their ideas, raising different kinds of scientific questions; 	<ul style="list-style-type: none"> 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 	

- select and plan the most appropriate type of scientific enquiry to use to answer scientific questions;
- make their own decisions about what observations to make, what measurements to use and how long to make them for, and whether to repeat them;
- plan, set up and carry out comparative and fair tests to answer questions, including recognising and controlling variables where necessary;
- use their test results to identify when further tests and observations may be needed;
- use test results to make predictions for further tests.

Observing and Measuring Changes

- choose the most appropriate equipment to make measurements and explain how to use it accurately;
- take measurements using a range of scientific equipment with increasing accuracy and precision;
- know the importance of taking repeat readings and take repeat readings where appropriate.

Identifying, Classifying, Recording and Presenting Data

- independently group, classify and describe living things and materials;
- decide how to record data from a choice of familiar approaches;
- record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar graphs and line graphs

Drawing Conclusions, Noticing Patterns and Presenting Findings

- notice patterns;
- draw conclusions based in their data and observations;
- use their scientific knowledge and understanding to explain their findings;
- read, spell and pronounce scientific vocabulary correctly;
- look for different causal relationships in their data;

	<ul style="list-style-type: none"> • discuss the degree of trust they can have in a set of results; • independently report and present their conclusions to others in oral and written forms. <p>Using Scientific Evidence and Secondary Sources of Information</p> <ul style="list-style-type: none"> • recognise where secondary sources will be most useful to research ideas and begin to separate opinion from fact; • use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas; • talk about how scientific ideas have developed over time. 		
	<p>Key Vocabulary: circulatory system, heart, blood vessels, oxygenated blood, deoxygenated blood Bold for new words. Not bold for previous words.</p>	<p>Links: Builds on – Understanding the world, animals including humans year 1, 2, 3, 4 and 5. Foundation for – ks3</p>	<p>Adaptations made – WOW- An outdoor circulatory game to model the movement of oxygenated and deoxygenated blood around the body Dissecting a heart demonstration WHO – Marie Maynard Daly</p>
<p>4 Evolution and Inheritance</p>	<p>Asking Questions and Carrying Out Fair and Comparative Tests</p> <ul style="list-style-type: none"> • with growing independence, raise their own relevant questions about the world around them in response to a range of scientific experiences; • explore and talk about their ideas, raising different kinds of scientific questions; • ask their own questions about scientific phenomena; <p>Observing and Measuring Changes</p> <p>N/A</p> <p>Identifying, Classifying, Recording and Presenting Data</p> <ul style="list-style-type: none"> • independently group, classify and describe living things and materials; • use and develop keys and other information records to identify, classify and describe living things and materials; 	<ul style="list-style-type: none"> • 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 	

		<ul style="list-style-type: none"> record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar graphs and line graphs <p>Drawing Conclusions, Noticing Patterns and Presenting Findings</p> <ul style="list-style-type: none"> notice patterns; draw conclusions based in their data and observations; use their scientific knowledge and understanding to explain their findings; read, spell and pronounce scientific vocabulary correctly; identify patterns that might be found in the natural environment; independently report and present their conclusions to others in oral and written forms. <p>Using Scientific Evidence and Secondary Sources of Information</p> <ul style="list-style-type: none"> use primary and secondary sources evidence to justify ideas; identify evidence that refutes or supports their ideas; recognise where secondary sources will be most useful to research ideas and begin to separate opinion from fact; use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas; talk about how scientific ideas have developed over time. 		
		<p>Key Vocabulary: offspring, inheritance, variations, characteristics, adaptation, habitat, environment, evolution fossil, natural selection, adaptive traits, inherited traits. Bold for new words. Not bold for previous words.</p>	<p>Links: Builds on – life cycles in living things and their habitats throughout (inc year 5) Foundation for – ks3</p>	<p>Adaptations made - WOW - Opportunity to look at a variety of fossils and make observations. Beak investigation Science week – surviving on Mars, Gentoo penguin Who – Charles Darwin, Mary Leaky</p>
5 Light		<p>Asking Questions and Carrying Out Fair and Comparative Tests</p> <ul style="list-style-type: none"> explore and talk about their ideas, raising different kinds of scientific questions; ask their own questions about scientific phenomena; 	<ul style="list-style-type: none"> 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 	

	<p>Observing and Measuring Changes</p> <ul style="list-style-type: none"> • choose the most appropriate equipment to make measurements and explain how to use it accurately; • take measurements using a range of scientific equipment with increasing accuracy and precision; • know the importance of taking repeat readings and take repeat readings where appropriate. <p>Identifying, Classifying, Recording and Presenting Data</p> <ul style="list-style-type: none"> • record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar graphs and line graphs <p>Drawing Conclusions, Noticing Patterns and Presenting Findings</p> <ul style="list-style-type: none"> • notice patterns; • draw conclusions based in their data and observations; • use their scientific knowledge and understanding to explain their findings; • read, spell and pronounce scientific vocabulary correctly; • discuss the degree of trust they can have in a set of results; • independently report and present their conclusions to others in oral and written forms. <p>Using Scientific Evidence and Secondary Sources of Information</p> <ul style="list-style-type: none"> • identify evidence that refutes or supports their ideas; • recognise where secondary sources will be most useful to research ideas and begin to separate opinion from fact; • use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas; • talk about how scientific ideas have developed over time. 	<ul style="list-style-type: none"> • 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 	
	<p>Key Vocabulary: light, light source, reflection, incident ray, reflected ray, the law of reflection, refraction, visible spectrum,</p>	<p>Links: Builds on – Explore the natural world around them. Every day materials year 1 and 2. Light year 3, materials year 5. Foundation for – ks3</p>	<p>Adaptations made – WOW – refraction practical Who – Isaac Newton (building on year 5) Patricia Bath</p>

		<p>prism, shadow, transparent, translucent, opaque. Bold for new words. Not bold for previous words.</p>		
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