

Science Curriculum Map

To be a Scientist I need	National Curriculum Aims in Science
 To create well-rounded scientists. To provide opportunities for all children to have the scientific skills and knowledge to prepare them for their future. To allow students to become knowledgeable in key scientific thoughts and ideas. To give children the opportunity to discover an interest and curiosity in science. To encourage children to understand more about the history of science and the impact of scientists and their discoveries on our world. Provide an opportunity for children to complete practical activities. To build on and use key scientific vocabulary. To develop children's perseverance skills in order to take risks and develop their resilience. 	 develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future

National Curriculum requirements KS1 END POINTS

Working scientifically

- asking simple questions and recognising that they can be answered in different ways
- observing closely, using simple equipment
- performing simple tests

- identifying and classifying
- using their observations and ideas to suggest answers to questions
- gathering and recording data to help in answering questions

Plants

- identify and name a variety of common wild and garden plants, including deciduous and evergreen trees
- identify and describe the basic structure of a variety of common flowering plants, including trees.
- observe and describe how seeds and bulbs grow into mature plants
- find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.

Animals, including humans

- identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals
- identify and name a variety of common animals that are carnivores, herbivores and omnivores
- describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets)
- identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.
- notice that animals, including humans, have offspring which grow into adults find out about and describe the basic needs of animals, including humans, for survival (water, food and air) describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene

Everyday materials

- distinguish between an object and the material from which it is made
- identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock

- describe the simple physical properties of a variety of everyday materials
 compare and group together a variety of everyday materials on the basis of their simple physical properties.
 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.

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

Living things and their habitats

- explore and compare the differences between things that are living, dead, and things that have never been alive
- identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other
- identify and name a variety of plants and animals in their habitats, including microhabitats
- describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food.

National Curriculum requirements Lower KS2 END POINTS

Working scientifically

- asking relevant questions and using different types of scientific enquiries to answer them
- setting up simple practical enquiries, comparative and fair tests
- making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers
- gathering, recording, classifying and presenting data in a variety of ways to help in answering questions

- recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions
- using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions
- identifying differences, similarities or changes related to simple scientific ideas and processes
- using straightforward scientific evidence to answer questions or to support their findings.

Plants

- identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers
- explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant investigate the way in which water is transported within plants
- explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.

Animals, including humans

- identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat
- identify that humans and some other animals have skeletons and muscles for support, protection and movement.

Rocks

- compare and group together different kinds of rocks on the basis of their appearance and simple physical properties
- describe in simple terms how fossils are formed when things that have lived are trapped within rock
- recognise that soils are made from rocks and organic matter.

Light

- 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.

Forces and magnets

- compare how things move on different surfaces
- notice that some forces need contact between two objects, but magnetic forces can act at a distance
- observe how magnets attract or repel each other and attract some materials and not others
- compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials
- describe magnets as having two poles
- predict whether two magnets will attract or repel each other, depending on which poles are facing.

National Curriculum requirements Upper KS2 END POINTS

Working Scientifically

- planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary
- taking measurements, using a range of scientific equipment, with increasing accuracy and precision,
- taking repeat readings when appropriate recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs
- using test results to make predictions to set up further comparative and fair tests
- reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations
- identifying scientific evidence that has been used to support or refute ideas or arguments

Living things and their habitats

- describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird
- describe the life process of reproduction in some plants and animals.
- describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals
- give reasons for classifying plants and animals based on specific characteristics.

Animals, including humans

- describe the changes as humans develop to old age.
- identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood
- recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function
- describe the ways in which nutrients and water are transported within animals, including humans.

Evolution and Inheritance

- 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.

Properties and changes of 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
- 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.

Light

- recognise that light appears to travel in straight lines
- use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye
- explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes
- use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.

Earth and Space

- 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.

Electricity

- 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.

Forces

- explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object
- identify the effects of air resistance, water resistance and friction, that act between moving surfaces
- recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.

	EYFS Science Skills Progression									
	Working Scientifically	Animals, including humans	Plants	Living things and their habitats (including evolution and inheritance)	Materials (including rocks and soils)	Earth and space (Including Seasons)	Electricity	Forces	Light	Sound
Skills	 Testing Scientific questioning Measuring Gathering and recording Communicating Findings Classifying Scientific research Concluding and questioning Using scientific evidence 									
Vocabulary	Observe, changes, sort, measure, explore, same, different	Body, brain, muscles, bones, stomach, lungs, oxygen, senses, hear, smell, taste, touch, feel, skin, head, neck, body, arms, legs, ears, eyes, nose, mouth, tongue, hands, feet, fingers, toes, elbows,	Trees, trunk, branches, seeds, soil, grains, crops, fruit, vegetables, leaf, stem, flower, roots, evergreen, deciduous	Insects, habitat, thorax, abdomen, head, bloom, born, hatch, aquarium, fin, gills, stream, pond, predator, absorb, evaporate, ice, liquid, recycle, pollution, natural, hear, feel	Paper, wood, plastic, stone, glass, waterproof	Seasons, spring, summer, autumn, winter, temperature, weather, sun, sunshine, rain, snow, sleet, ice, frost, fog, cloud, hot, cold, storm, sky, earth, night, day harvest, change,	Electricity, battery, plug	explore	Light, dark, day, night, see, hear, feel	Listen, noise

	knees, hair, teeth, young, old, growing, mammals, backbone, habitat	energy, moon, stars, daytime, night-time, opposite, evaporate, planet	
Attainment ARE	By the end of each key stage, pupils are expected to kr	now, apply and understand the matters, skills and processes spe	ecified in the relevant programme of study.

	EYFS Science Knowledge Progression											
Working Scientifically	Animals, including humans	Plants	Living things and their habitats (including evolution and inheritance)	Materials (including rocks and soils)	Earth and space (Including Seasons)	Electricity	Forces	Light	Sound			
Show curiosity and ask questions Make observations using their senses and simple equipment Make direct comparisons.	Talk about members of their immediate family and community. Name and describe people who are familiar to them. Recognise some		•Draw information from a simple map. Explore the natural world around them. Describe what they see, hear and feel whilst outside.	Explore the natural world around them. Describe what they see, hear and feel whilst outside			Explore the natural world around them.	Describe what they see, hear and feel whilst outside.	Describe what they see, hear and feel whilst outside.			

Use equipment to measure. Record their observations by drawing, taking photographs, using sorting rings or boxes and, in Reception, on simple tick sheets	environments that are different to the one in which they live.	Recognise some environments that are different to the one in which they live.			
Use their observations to help them to answer their questions Talk about what they are doing and have found out identify, sort and group					

EYFS Science Breadth of Study									
Autumn 1 Autumn 2 Spring 1 Spring 2 Summer 1									
Changes	Once upon a time	Lost and found	Dinosaurs	Minibeasts	Superheroes				
Autumn walk	Materials – 3 pigs homes	Ice melting – penguins in ice	Volcanoes	Magnetic spiders	Making potions				

Wind sreamers	Floating and sinking – equipment and boats	Herbivores, carnivores, omnivores	Super senses (scent pots etc.)
			Hatching eggs

	Year 1 Science Skills Progression									
	Working scientifically	Plants	Animals Including Humans	Everyday Materials	Seasonal Changes	Light and Sound				
Skills	 Perform simple tests (Year 1 focus) e.g. Which materials keep things warmest? Know whether the test has been successful and can say what has been learned Ask simple questions and recognise that they can be answered in different ways e.g. Why are flowers different colours? Why do some animals eat meat and others do not? Use simple equipment to observe closely (Y1 focus) Gather and record data to help in answering questions (Year 1 focus) Make a simple written explanation about what has been learned from an investigation or what conclusions have been found. Identify and classify e.g. Mammals and birds (Year1 focus) 									
Vocabulary	Experience, changes, patterns, grouping, sorting, classifying, compare, identify (name), data, record, equipment, questions, test, investigate, magnifying glass / hand lens, observe, patterns, measure	Plants, wild plants, garden plants, evergreen trees, deciduous trees, common flowering plants, flowers, vegetables, leaf/leaves, flower, blossom, petal, stem, trunk, branch, root, seed, bulb, bud, growth, grow, habitat, local area, leaf fall,	Names of common animals: fish, amphibians, reptiles, birds, mammals, carnivores, herbivores, omnivores, habitat, local area, pet, wild, animal, insect, minibeast, food, eat, grow, healthy, hygiene, offspring, adults, young, water, air, survive,	Everyday materials: wood, paper, plastic, metal, glass, water, rock, brick, stone, fabric material, foil, elastic, dough, rubber, card, cardboard, clay Object: make/made hard/soft shiny/dull stretchy/stiff rough/smooth bendy/not bendy waterproof/not	Seasons, seasonal change, spring, summer, autumn, winter, temperature, weather, sun, sunshine, rain, snow, sleet, ice, frost, fog, cloud, hot, cold, storm, sky, earth, night, day, day length	Sources of sound, hear, ears Sources of light, see, eyes, travel, electric, flames, sun,				

		water, light, temperature, healthy growth, survive, soil, stages of growth	exercise, hygiene, egg, chick, chicken, caterpillar, pupa, moth, butterfly, tadpole, frog, frog spawn, lamb, sheep, calf, cow, foal, horse	waterproof transparent/opaque absorbent/not absorbent, squash, twist, bend, stretch	
Attainment ARE	study.	age, pupils are expected to ell scientific vocabulary at a			

	Year 1 Science Knowledge Progression										
Working scientifically	Plants	Animals Including Humans	Everyday Materials	Seasonal Changes							
Asking simple questions and recognising that they can be answered in different ways	Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees.	Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals	Distinguish between an object and the material from which it is made	Observe changes across the four seasons Observe and describe weather							
Observing closely, using simple equipment performing simple tests	Identify and describe the basic structure of a variety of common flowering plants, including trees.	Identify and name a variety of common animals that are carnivores, herbivores and	Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock	associated with the seasons and how day length varies.							
Identifying and classifying using their observations and ideas to suggest answers to questions		omnivores Describe and compare the structure of a variety of common	Describe the simple physical properties of a variety of everyday materials								

Gathering and recording data to help in answering questions.
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	Year 1 Science Breadth of Study Year A										
Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2						
Knock! Knock! Who's There?		The C	Quest	At The	Seaside						
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	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	Recognise that they need light in order to see things and that dark is the absence of light. Recognise that shadows are formed when the light from a light source is blocked by a solid object. Find patterns in the way	Compare how things move on different surfaces. Notice that some forces need contact between 2 objects.	Identify and name a variety of common animals including, fish, amphibians, reptiles, birds and mammals. Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds	Identify and name a variety of common animals that are carnivores, herbivores and omnivores. Identify that most living things live in habitats to which they are suited and describe how different habitats provide for the						

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.	some materials can be changed by squashing, bending, twisting and stretching.	that the size of shadows change.	and mammals including pets). Explore and compare the differences between things that are living, dead, and things that have never been alive. Identify and name a variety of plants and animals in their habitats,	basic needs of different kinds of animals and plants, and how they depend on each other. Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different
			including microhabitats.	sources of food.

	Year 1 Science Breadth of Study Year B								
Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2				
999 - What's Your Emergency?		Charlie & The Cl	hocolate Factory	Down At The Bottom Of The Garden					
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).	Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. Describe the importance for humans of exercise, eating the right amounts	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	Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. Identify and describe the basic structure of a variety of common flowering plants, including trees.	Identify 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.	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				

of different types of food, and hygiene.	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. Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for different uses. Find out how the shapes of solid objects made from some materials can be changed by squashing,	Observe changes across the 4 seasons. Observe and describe weather associated with the seasons and how day length varies. 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.	Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets).	habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other. Identify and name a variety of plants and animals in their habitats, including microhabitats. Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food.

	Plants	Animals Including Humans	Living Things and Their Habitats	Everyday Materials	Forces	Electricity	
Skills	Ask simple questions and recogn curriculum e.g. Why do some tre Use simple equipme Gather and record data to help in a Communicate his/her Ideas, wha Identify, group and classify acco Use his/her observations and Plants, wild plants, Names of common		hat they can be answered se their leaves in autumn animals have ich as thermometers and ering questions including block graphs of she does and what he/sh g to a given criteria e.g. D	d in different ways including and others do not? How underground habitats? rain gauges to observe of from secondary sources or tables. (Year 2 focus) the finds out in a variety of eciduous and coniferous	serve closely changes over time (Y2 focus) ources of information using drawings, labelled diagrams		
Vocabulary	Plants, wild plants, garden plants, evergreen trees, deciduous trees, common flowering plants, flowers, vegetables, leaf/leaves, flower, blossom, petal, stem, trunk, branch, root, seed, bulb, bud, growth, grow, habitat, local area, leaf fall, water, light, temperature, healthy growth, survive, soil, stages of growth	Names of common animals: fish, amphibians, reptiles, birds, mammals, carnivores, herbivores, omnivores, habitat, local area, pet, wild, animal, insect, minibeast, food, eat, grow, healthy, hygiene, offspring, adults, young, water, air, survive, exercise, hygiene, egg, chick, chicken, caterpillar, pupa, moth, butterfly, tadpole, frog, frog spawn, lamb, sheep, calf, cow, foal, horse	Pond, garden, field, park, woodland, sea shore, river, ocean, forest, rainforest, stones, rocks, logs, leaf, litter, habitat, micro-habitat, living, dead, not living, alive, healthy, food, food chain, depend, source of food, shelter, grow, growth, healthy, explore, compare, micro-habitats	Everyday materials: wood, paper, plastic, metal, glass, water, rock, brick, stone, fabric material, foil, elastic, dough, rubber, card, cardboard, clay Object: make/made hard/soft shiny/dull stretchy/stiff rough/smooth bendy/not bendy waterproof/not waterproof transparent/opaque absorbent, squash, twist, bend, stretch	Move, faster, slower, notice, describe, compare/ comparison	Electricity, appliances, circuit, bulb, wire, conductor	

Attainment ARE	By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study. Pupils should read and spell scientific vocabulary at a level consistent with their increasing word-reading and spelling knowledge at key stage 1.					
Greater Depth						

	Year 2 Science Kno	wledge Progression	
Plants	Animals Including Humans	Living Things and Their Habitats	Everyday Materials
Observe and describe how seeds and bulbs grow into mature plants.	Notice that animals, including humans, have offspring which grow into adults.	Explore and compare the differences between things that are living, dead, and things that have never been alive.	Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock,
Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.	Find out about and describe the basic needs of animals, including humans, for survival (water, food and air). Describe the importance for humans of	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	Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting
	exercise, eating the right amounts of different types of food, and hygiene.	animals and plants, and how they depend on each other. Identify and name a variety of plants and	and stretching.
		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.	

		Year 2 Science Brea	dth of Study Year A		
Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Knock! Knock! Who's There?		The (Quest	At The	Seaside
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.	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.	Recognise that they need light in order to see things and that dark is the absence of light. Recognise that shadows are formed when the light from a light source is blocked by a solid object. Find patterns in the way that the size of shadows change.	Compare how things move on different surfaces. Notice that some forces need contact between 2 objects.	Identify and name a variety of common animals including, fish, amphibians, reptiles, birds and mammals. Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets). Explore and compare the differences between things that are living, dead, and things that have never been alive. Identify and name a variety of plants and animals in their habitats, including microhabitats.	Identify and name a variety of common animals that are carnivores, herbivores and omnivores. 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. 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.

		Year 2 Science Brea	dth of Study Year B		
Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
999 - What's Yo	our Emergency?	Charlie & The C	hocolate Factory	Down At The Bott	om Of The Garden
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).	Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.	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. Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock,	Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. Identify and describe the basic structure of a variety of common flowering plants, including trees. Observe changes across the 4 seasons. Observe and describe weather associated with the seasons and how day length varies. 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.	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).	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

	paper and cardboard for different uses. Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.	food chain, and identify and name different sources of food.
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				Year 3/ 4	Science Skills P	rogression				
	Working Scientifically	Living Things and Their Habitats	Animals Including Humans	States of Matter	Sound	Electricity	Plants	Rocks	Light	Forces
Skills	 Set up simple practical enquiries, comparative and fair tests e.g. To see which type of soil is most suitable when growing two similar plants? To se if their right hand is as efficient as their left. Set up a fair test with different variables e.g. the best conditions for a plant to grow. Can explain to a partner why a test is a fair one. Set up simple practical enquiries, comparative and fair tests e.g. Which of two instruments make the highest or lowest sound and does a glass of it weigh more than a glass of water. Set up a fair test with more than one variable e.g. using different materials to cut out sound. Can explain to others why a test is fair e.g. discover how fast ice melts in different temps. Ask relevant questions and use different types of scientific enquiries to answer them e.g. Why does the moon appear as different shapes in the night sky? Why do shadows change during the day? Where does a fossil come from? Ask relevant questions and use different types of scientific enquiries to answer them e.g. Why are steam and ice the same thing? Why is the liver important in the digestive system? What do we mean by pitch when it comes to sound? Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment including thermometers and data loggers (Year 3 focus) Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment including thermometers and data loggers (Year 4 focus Gather, record, classify and present data in a variety of ways to help in answering questions drawings, labelled diagrams, keys and child constructe bar charts and tables (Year 3 focus) 								es a glass of ice an explain to shapes in the liver of equipment,	

- Gather, record, classify and present data in a variety of ways to help in answering questions drawings, labelled diagrams, keys and child constructed bar charts and tables (Year 4 focus)
 - Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions (Year 3 focus)
 - Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions (Year 4 focus)
 - Group information according to common factors e.g. materials that make good conductors or insulators. (Yr4 focus) e.g. Venn Diagrams with bisecting sets or Carroll Diagrams
 - Use research to find out a range of things e.g. How reflection can help us see things that are around the corner. What are the main differences between sedimentary and igneous rocks?
- Use research to find out a range of things e.g. Which materials make effective conductors and insulators of electricity? How much time it takes to
 digest our food.
 - Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions (Year 3 focus)
 - Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions (Year 4 focus)
 - Use straightforward scientific evidence to answer questions or to support his/her findings (Year 3 focus)
 - Use straight forward scientific evidence to answer questions or to support his/her findings (Year 4 focus)

Manalaudam	Davidan	Forderson	Ni. daile a	Called Bassiel	Carrad	Ela atui aitu		Daala aatt	Calabada al	
Vocabulary	Develop,	Environment,	Nutrition,	Solid, liquid,	Sound,	Electricity,	producer,	Rock, soil,	Light, dark	Move,
	enquiry,	non-flowerin	diet,	gas,	vibration,	simple	predator,	fossil, organic	(absence of	movement,
	practical, fair	g plants,	skeleton,	temperature,	vibrate,	circuit, light	prey,	matter,	light), reflect,	surfaces,
	test,	ferns,	muscles,	heat	pitch,	bulb, cell,	nutrition,	grains,	shadow,	forces, push,
	comparative	mosses,	protection,	(heating),	volume,	wire, buzzer,		crystals,	opaque,	pull, contact,
	test,	flowering	support,	cool	medium,	switch,		sedimentary	mirror,	distance,
	relationships,	plants,	movement,	(cooling),	travels,	motor,		rock,	reflective,	magnet, bar
	conclusion,	grasses,	bones, skull,	water cycle,		battery,		metamorphic	surface,	magnet, ring
	accurate,	Vertebrate	shell,	evaporation,		series,		rock, igneous	absence,	magnet,
	thermometer	animals: fish,	digestive	condensation		circuit,		rock	protect,	horseshoe
	, data logger,	birds,	system,	, melting,		conductor,		(including	blocked,	magnet,
	estimate	mammals,	stomach,	freezing,		insulator,		rocks and		attract, repel,
	data,	amphibians,	small	formation.		lamp, loop		soils)		poles (of
	diagram, key,	reptiles,	intestine,					Properties,		magnets),
	(identifying)	Invertebrate	large					hardness,		magnetic,
	table, chart,	animals:	intestine,					solubility,		materials,
	bar chart,	snails,	oesophagus,					physical		forces,
	results,	worms, slugs,	Types of					properties,		attraction,
	predictions,	spiders,	teeth: molar,					formation,		,
	explanation,	insects,	premolar,					compare,		
	reason,	Human	' '					observe,		
	Teasuii,	Tiulliali	incisor,					observe,		

	similarity, difference, question, evidence, information, findings, criteria, values, properties, characteristic	impact – litter, deforestation , population increase, nature reserves.	canine saliva, local environment,							
Attainment ARE		programme of	By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study. Pupils should read and spell scientific vocabulary at a level consistent with their increasing word-reading and spelling knowledge at key stage 1.							

Working Scientifically	Living Things and Their Habitats	Animals Including Humans	States of Matter	Sound	Electricity	Plants	Rocks	Light	Forces and Light
Asking relevant	Recognise that	Identify that	Compare and	Identify how	Identify	Identify and	Compare and	Recognise that	Compare how
questions and	living things	animals,	group	sounds are	common	describe the	group together	they need light	things move
using different	can be	including	materials	made,	appliances that	functions of	different kinds	in order to see	on different
types of	grouped in a	humans, need	together,	associating	run on	different parts	of rocks on the	things and that	surfaces.
scientific	variety of	the right types	according to	some of them	electricity.	of flowering	basis of their	dark is the	
enquiries to	ways.	and amount of	whether they	with		plants: roots,	appearance	absence of	Notice that
answer them.		nutrition, and	are solids,	something	Construct a	stem/trunk,	and simple	light	some forces
	Explore and	that they	liquids or	vibrating.	simple series	leaves and	physical	Notice that	need contact
Setting up	use	cannot make	gases.		electrical	flowers.	properties.	light is	between two
simple	classification	their own		Recognise that	circuit,			reflected from	objects, but
practical	keys to help	food; they get	Observe that	vibrations from	identifying and	Explore the	Describe in	surfaces.	magnetic
enquiries,	group, identify	nutrition from	some materials	sounds travel	naming its	requirements	simple terms		forces can act
comparative	and name a	what they eat.	change state	through a	basic parts,	of plants for	how fossils are	Recognise that	at a distance.
and fair tests.	variety of living		when they are	medium to the	including cells,	life and growth	formed when	light from the	
	things in their	Identify that	heated or	ear.	wires, bulbs,	(air, light,	things that	sun can be	Observe how
	local and wider	humans and	cooled, and		switches and	water,	have lived are	dangerous and	magnets
Making	environment.	some other	measure or	Find patterns	buzzers.	nutrients from	trapped within	that there are	attract or repel
systematic and		animals have	research the	between the		soil, and room	rock.	ways to	each other and
careful	Recognise that	skeletons and	temperature at	pitch of a	Identify	to grow) and		protect their	attract some
observations	environments	muscles for	which this	sound and	whether or not	how they vary	Recognise that	eyes.	materials and
and, where	can change	support,	happens in	features of the	a lamp will	from plant to	soils are made		not others.
appropriate,	and that this	protection and	degrees	object that	light in a	plant.	from rocks and	Recognise that	Compare and
taking accurate	can sometimes	movement.	Celsius (°C).	produced it.	simple series		organic matter.	shadows are	group together
measurements	pose dangers				circuit, based	Investigate the		formed when	a variety of
using standard	to living things.	Y4	Identify the	Find patterns	on whether or	way in which		the light from	everyday
units, using a		Describe the	part played by	between the	not the lamp is	water is		a light source	materials on
range of		simple	evaporation	volume of a	part of a	transported		is blocked by	the basis of
equipment,		functions of	and	sound and the	complete loop	within plants.		an opaque	whether they
including		the basic parts	condensation	strength of the	with a battery.			object.	are attracted
thermometers		of the	in the water	vibrations that		Explore the			to a magnet,
and data		digestive	cycle and	produced it.	Recognise that	part that		Find patterns	and identify
loggers.			associate the		a switch opens	flowers play in		in the way that	

	ı				ı	I	I	T .	
Gathering,		system in	rate of	Recognise that	and closes a	the life cycle of		the size of	some magnetic
recording,		humans.	evaporation	sounds get	circuit and	flowering		shadows	materials.
classifying and			with	fainter as the	associate this	plants,		change.	
presenting		Identify the	temperature.	distance from	with whether	including			Describe
data in a		different types		the sound	or not a lamp	pollination,			magnets as
variety of ways		of teeth in		source	lights in a	seed formation			having two
to help in		humans and		increases.	simple series	and seed			poles.
answering		their simple			circuit.	dispersal.			'
questions.		functions.							Predict
1					Recognise				whether two
Recording		Construct and			some common				magnets will
findings using		interpret a			conductors				attract or repel
simple		variety of food			and insulators,				each other,
scientific		chains,			and associate				depending on
language,		identifying			metals with				which poles
drawings,		producers,			being good				are facing.
labelled		predators and			conductors.				
diagrams, keys,		prey.							
bar charts, and		/							
tables.									
Reporting on									
findings from									
enquiries,									
including oral									
and written									
explanations,									
displays or									
presentations									
of results and									
conclusions.									
Using results									
to draw simple									
conclusions,									

		Year 3/4 Science Bre	adth of Study Year A		
Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2

Rainf	orests	The Shan	g Dynasty	Britain (1900s-1950s)		
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.	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.	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.	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.	Identify common appliances that run on electricity. Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers. Identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery. Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit. Recognise some common conductors and insulators, and associate metals with being good conductors.		

		Year 3/4 Science Bre	adth of Study Year B		
Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2

Prehistoric and Roman Britain	Around the W	orld in 80 Days	Land of the Pharaohs		
Compare how things move on different surfaces. Notice that some forces need contact between 2 objects, but magnetic forces can act at a distance. Observe how magnets attract or repel each other and attract some materials and not others. Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials. Describe magnets as having 2 poles. Predict whether 2 magnets will attract or repel each other, depending on which poles are facing.	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.	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.	Identify how sounds are made, associating some of them with something vibrating. Recognise that vibrations from sounds travel through a medium to the ear. Find patterns between the pitch of a sound and features of the object that produced it. Find patterns between the volume of a sound and the strength of the vibrations that produced it. Recognise that sounds get fainter as the distance from the sound source increases.	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 a solid object. Find patterns in the way that the size of shadows change.	

	Working Scientificall Y	Living Things and Their Habitats	Animals Including Humans	States of Matter	Sound	Electricity	Materials	Earth and Space	Light	Forces	Plants
Skills	• Take • Re	Habitats et up an investivate most frictivate most frictivate. Know what we which type of fair test when the measurement of measurement accord data and cord data and cor	igation when it on? Set up an e variables are i of investigation needed e.g. Do	enquiry based in a given enquiry based in a given enquire is needed to so pes light travel Plan different to e of scientific entered assing complexion enquiries, incomplexion enquiries, incomplexio	investigation e. iry and can isol ma uit a particular in straight line: be fferent types of types of scienti, quipment, with including co ity using scienti ty using scienti	g. Find out what de with difference scientific enquises? Know how the tween oxygen from scientific enquiries to a increasing acts including capath increasing acts apacity, mass, ific diagrams a (Year 5 for fors, causal religious causal religious acts and capacity acts are acts and capacity acts acts and capacity acts	nat adults/ chilly when investigated the	not. Set up a fadren can do not ting. e.g. Finding at the relation quiry based inversives own or others' cision, taking recision, taking recis	w that they cong out how efformship between estigation e.g. ns. questions. epeat readings repeat reading tables, scatter tables, scatter	uldn't do when ective parachuin pulse and exe What is the rewind when approprias when approprias when approprias graphs, bar and graphs, bar a	they were a tes are when rcise. Set up a lationship fate (Y5 maths riate (Y6 focus d line graphs
	• (• Use results to d	raw conclusion raw conclusion Identify s	written written assify things ar Find thin s. Is evaluative enquiries and enquiries and enquiries and scientific evide	forms such as and recognise pangs out using a week when explaining the control of	ons, causal relations, causal relations, causal relations and or atterns using appropriate range of sing findings from the stoother enquired to supple to su	ationships and ther presentati ppropriate way secondary sou om scientific en piries where ap piries where ap pport or refute	explanations of the constant o	of and degree of us) ge.g. classificate tion clear about when a focus) clear about when a focus) clear about when a focus) nents (Year 5 focus)	tion keys at has happene at has happene ocus)	d in recent

Vocabulary	Variables, evidence, justify, accuracy, precision, scatter graphs, bar graphs, line graphs, argument (science), causal, relationship , precision, classificatio n, comparativ e,refute ideas/ theories	Life cycles, reproduction, life processes, sexual and asexual reproduction (plants), root cuttings, classification, microorganisms, organisms, evolution, evolve, adaptation, variation, inherit, inheritance, taxonomy, DNA, genetic, chromosomes, mutations	Puberty, gestation period, circulatory system, heart, lungs, blood vessels, blood, lifestyle, disease, water transportati on, nutrient transportati on, oxygen, air, breathing, exercise, diet, drugs, de/oxygena ted, capillaries, arteries, veins	Dissolve, solution, filtering, sieving, ir/reversible changes, burning, oxidisation, acid	Waves, insulation, ear drum, anvil, stirrup, pitch, loudness, vibrate, pitch, patterns, fainter	Voltage, component s, symbols, circuit, diagram, conductivity, insulation, brightness, volume, amps, volts, variation, buzzer, switch	Transparenc y, electrical conductivity , thermal comparativ e, magnetism, dissolve, solution, substance, separating, mixing, filtering, sieving, reversible change, burning, rusting, reactions, ir/reversible change, evaporating	Solar system planets: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Neptune, Uranus, Moon, stars, spherical bodies, rotation, orbit, satellite, gravity, light years	Light sources, periscope, straight lines, incident and reflection, refraction, disperse, object, bounce, translucent, transparent, light spectrum, opaque, infa-red, camera obscura, retina, prism	Gravity, air resistance, water resistance, friction, levers, pulleys, gears, springs, gravity, force, effect, mechanism, accelerate, decelerate, drag	Evolution, inheritance, sexual and asexual reproductio n (plants), adaptation, variation, inherit, stem, pollen, sepal, filament, anther, ovary, petal, ovum, carpel, pollination
Attainment ARE		1 .	each key stage of study. Pupils s key stage 1.								
Greater Depth											

			Year 5/6 Science Kno	owledge Progression			
Working Scientifically	Living Things and Their Habitats	Animals Including Humans	Electricity	Materials	Earth and Space	Light	Forces
Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.	Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. Describe the life process of	Describe the changes as humans develop to old age. Identify and name the main parts of the human circulatory system, and describe the	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 group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity	Describe the movement of the Earth, and other planets, relative to the Sun in the solar system. Describe the movement of the	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	Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.
Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat	reproduction in some plants and animals. Give reasons for classifying plants and animals based on specific	functions of the heart, blood vessels and blood. Recognise the impact of diet, exercise, drugs and	Compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness	(electrical and thermal), and response to magnets. Know that some materials will dissolve in liquid to	Moon relative to the Earth. Describe the Sun, Earth and Moon as approximately spherical bodies.	they give out or reflect light into the eye. Explain that we see things because light travels from light sources to our eyes	Identify the effects of air resistance, water resistance and friction, that act between moving surfaces.
readings when appropriate. Recording data and results of increasing complexity using	characteristics. (including evolution and inheritance)	lifestyle on the way their bodies function. Describe the ways in which nutrients	of buzzers and the on/off position of switches. Use recognised symbols when	form a solution, and describe how to recover a substance from a solution.	Use the idea of the Earth's rotation to explain day and night and the apparent movement of the	or from light sources to objects and then to our eyes.	Recognise that some mechanisms including levers, pulleys and gears, allow a smaller force to have a
scientific diagrams and labels, classification keys, tables, scatter	Recognise that living things have changed over time and that fossils provide	and water are transported within animals, including humans.	representing a simple circuit in a diagram.	Use knowledge of solids, liquids and gases to decide how mixtures might be	sun across the sky.	light travels in straight lines to explain why shadows have the same shape as the	greater effect.

graphs, bar and line	information about	separated,	objects that cast	
graphs.	living things that	including through	them.	
	inhabited the Earth	filtering, sieving		
Using test results to	millions of years	and evaporating.		
make predictions to	ago.			
set up further		Give reasons, based		
comparative and		on evidence from		
fair tests.	Recognise that	comparative and		
	living things	fair tests, for the		
Reporting and	produce offspring	particular uses of		
presenting findings	of the same kind,	everyday materials,		
from enquiries,	but normally	including metals,		
including	offspring vary and	wood and plastic.		
conclusions, causal	are not identical to			
relationships and	their parents.	Demonstrate that		
explanations of and		dissolving, mixing		
degree of trust in	Identify how	and changes of		
results, in oral and	animals and plants	state are reversible		
written forms such	are adapted to suit	changes.		
as displays and	their environment			
other	in different ways	Explain that some		
presentations.	and that adaptation	changes result in		
	may lead to	the formation of		
Identifying	evolution.	new materials, and		
scientific evidence		that this kind of		
that has been used		change is not		
to support or refute		usually reversible,		
ideas or arguments.		including changes		
		associated with		
		burning and the		
		action of acid on		
		bicarbonate of		
		soda.		
		_		

	Year 5/6 Science Breadth of Study Year A										
Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2						
World War II		Anglo Saxon	s and Vikings	Ancient Maya							
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.	Recognise that light appears to travel in straight lines. Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye. Explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes. Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.	Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird Describe the life process of reproduction in some plants and animals.	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.	Describe the changes as hur	mans develop to old age.						

Year 5/6 Science Breadth of Study Year B								
Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2			
Space		Tudors		Ancient Greece				
Describe the movement of	Explain that unsupported	Compare and group	Identify and name the	Describe how living things	Associate the brightness of			

the Earth, and other objects fall towards the planets, relative to the Sun Earth because of the force in the solar system. of gravity acting between Describe the movement of the Earth and the falling the Moon relative to the object. Identify the effects of air Earth. Describe the Sun, Earth resistance, water and Moon as resistance and friction that approximately spherical act between moving bodies. surfaces. Use the idea of the Earth's Recognise that some rotation to explain day and mechanisms including levers, pulleys and gears night, and the apparent movement of the sun allow a smaller force to across the sky. have a greater effect.

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

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.

are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals.

Give reasons for classifying plants and animals based on specific characteristics.

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.

a lamp or the volume of a

	and the action of acid on		
	laterale and a selection		
	bicarbonate of soda.		