



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. • <i>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.</i> 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. • <i>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</i> • <i>give reasons for classifying plants and animals based on specific characteristics.</i> Animals, including humans • describe the changes as humans develop to old age. • <i>identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood</i> • <i>recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function</i> • <i>describe the ways in which nutrients and water are transported within animals, including humans.</i>

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 know, apply and understand the matters, skills and processes specified 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 Use their observations to help them to answer their questions Talk about what they are doing and have found out identify, sort and group	environments that are different to the one in which they live.		Recognise some environments that are different to the one in which they live.						
---	--	--	---	--	--	--	--	--	--

EYFS Science Breadth of Study					
Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
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 streamers		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	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.					

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 Observing closely, using simple equipment performing simple tests Identifying and classifying using their observations and ideas to suggest answers to questions	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 Describe and compare the structure of a variety of common	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	Observe changes across the four seasons Observe and describe weather associated with the seasons and how day length varies.

Gathering and recording data to help in answering questions.		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.	Compare and group together a variety of everyday materials on the basis of their simple physical properties.	
--	--	--	--	--

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 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, including microhabitats.	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 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 Chocolate 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, bending, twisting and stretching.	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	• Perform simple comparative and fair tests (Yr 2 focus) e.g. Finding out how seeds grow best • Ask simple questions and recognise that they can be answered in different ways including use of scientific language from the national curriculum e.g. Why do some trees lose their leaves in autumn and others do not? How long are the roots of tall trees? Why do some animals have underground habitats? • Use simple equipment such as thermometers and rain gauges to observe closely changes over time (Y2 focus) • Gather and record data to help in answering questions including from secondary sources of information using drawings, labelled diagrams, block graphs or tables. (Year 2 focus) • Communicate his/her Ideas, what he/she does and what he/she finds out in a variety of ways e.g. simple written reports or write ups. • Identify, group and classify according to a given criteria e.g. Deciduous and coniferous trees (Year 2 focus) e.g. using a Venn Diagram • Use his/her observations and ideas to suggest answers to questions noticing similarities, differences and patterns (Year 2 focus)					
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/not 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 Knowledge Progression			
Plants	Animals Including Humans	Living Things and Their Habitats	Everyday Materials
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.	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.	Explore and compare the differences between things that are living, dead, and things that have never been alive. Identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other. Identify and name a variety of plants and animals in their habitats, including micro-habitats. Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food.	Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.

Year 2 Science Breadth 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 Breadth of Study Year B					
Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
999 - What's Your Emergency?		Charlie & The Chocolate 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 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

	<i>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)</i> <i>Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions (Year 3 focus)</i> <i>Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions (Year 4 focus)</i> <i>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</i> <i>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?</i> <i>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.</i> <i>Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions (Year 3 focus)</i> <i>Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions (Year 4 focus)</i> <i>Use straightforward scientific evidence to answer questions or to support his/her findings (Year 3 focus)</i> <i>Use straight forward scientific evidence to answer questions or to support his/her findings (Year 4 focus)</i>									
Vocabulary	Develop, enquiry, practical, fair test, comparative test, relationships, conclusion, accurate, thermometer, data logger, estimate data, diagram, key, (identifying) table, chart, bar chart, results, predictions, explanation, reason,	Environment, non-flowering plants, ferns, mosses, flowering plants, grasses, Vertebrate animals: fish, birds, mammals, amphibians, reptiles, Invertebrate animals: snails, worms, slugs, spiders, insects, Human	Nutrition, diet, skeleton, muscles, protection, support, movement, bones, skull, shell, digestive system, stomach, small intestine, large intestine, oesophagus, Types of teeth: molar, premolar, incisor,	Solid, liquid, gas, temperature, heat (heating), cool (cooling), water cycle, evaporation, condensation, melting, freezing, formation.	Sound, vibration, vibrate, pitch, volume, medium, travels,	Electricity, simple circuit, light bulb, cell, wire, buzzer, switch, motor, battery, series, circuit, conductor, insulator, lamp, loop	producer, predator, prey, nutrition,	Rock, soil, fossil, organic matter, grains, crystals, sedimentary rock, metamorphic rock, igneous rock (including rocks and soils) Properties, hardness, solubility, physical properties, formation, compare, observe,	Light, dark (absence of light), reflect, shadow, opaque, mirror, reflective, surface, absence, protect, blocked,	Move, movement, surfaces, forces, push, pull, contact, distance, magnet, bar magnet, ring magnet, horseshoe magnet, attract, repel, poles (of magnets), magnetic, materials, forces, attraction,

	similarity, difference, question, evidence, information, findings, criteria, values, properties, characteristics	impact – litter, deforestation , population increase, nature reserves.	canine saliva, local environment,							
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.								

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

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,		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.	rate of evaporation with temperature.	Recognise that sounds get fainter as the distance from the sound source increases.	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.	the life cycle of flowering plants, including pollination, seed formation and seed dispersal.		the size of shadows change.	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.
---	--	---	--	---	---	--	--	------------------------------------	--

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.									
--	--	--	--	--	--	--	--	--	--

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

Rainforests		The Shang 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 Breadth of Study Year B					
Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2

Prehistoric and Roman Britain	Around the World 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 Scientifically	Living Things and Their Habitats	Animals Including Humans	States of Matter	Sound	Electricity	Materials	Earth and Space	Light	Forces	Plants
Skills	- Set up an investigation when it is appropriate e.g. finding out which materials dissolve or not. Set up a fair test when needed e.g. Which surfaces create most friction? Set up an enquiry based investigation e.g. Find out what adults/ children can do now that they couldn't do when they were a baby. Know what variables are in a given enquiry and can isolate each one when investigating. e.g. Finding out how effective parachutes are when made with different materials. - Know which type of investigation is needed to suit a particular scientific enquiry e.g. Looking at the relationship between pulse and exercise. Set up a fair test when needed e.g. Does light travel in straight lines? Know how to set up an enquiry based investigation e.g. What is the relationship between oxygen and blood? - Plan different types of scientific enquires to answer given questions. - Plan different types of scientific enquiries to answer their own or others' questions. - Take measurements using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate (Y5 maths focus including capacity and mass) - Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate (Y6 focus including capacity, mass, ratio and proportion) - Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs (Year 5 focus) - Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs (Year 6 focus) - Report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations (Year 5 focus) - Report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations (Year 6 focus) - Group and classify things and recognise patterns using appropriate ways of presenting e.g. classification keys - Find things out using a wide range of secondary sources of information - Use results to draw conclusions. Is evaluative when explaining findings from scientific enquiries and is clear about what has happened in recent enquiries and can relate this to other enquiries where appropriate (Year 5 focus) - Use results to draw conclusions. Is evaluative when explaining findings from scientific enquiries and is clear about what has happened in recent enquiries and can relate this to other enquiries where appropriate (Year 6 focus) - Identify scientific evidence that has been used to support or refute ideas or arguments (Year 5 focus) - Identify scientific evidence that has been used to support or refute ideas or arguments (Year 6 focus)										

Year 5/6 Science Knowledge 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. 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	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. Give reasons for classifying plants and animals based on specific characteristics. (including evolution and inheritance) Recognise that living things have changed over time and that fossils provide	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.	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.	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	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.	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	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.

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.	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.			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.		objects that cast them.	
---	--	--	--	--	--	--------------------------------	--

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 Saxons 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 humans 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 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.	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.	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.	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.
--	---	---	---	--	---

		and the action of acid on bicarbonate of soda.			
--	--	---	--	--	--