



Long Term Individual Subject Curriculum Plan 2025-2026

Subject: Science

Links between our school vision and mathematics

Belonging:

- **Inclusivity:** All students have access to science, fostering a sense of belonging.
- **Collaboration:** Teamwork in experiments helps students connect and work together.
- **Active Participation:** Hands-on, inquiry-based learning engages every student.

Serving:

- **Real-World Impact:** Science helps students apply knowledge to solve community and environmental issues.
- **Critical Thinking:** Students develop skills to make informed, responsible decisions.
- **Social Responsibility:** Topics like sustainability teach students to serve society and the planet.

Succeeding:

- **Skill Development:** Science nurtures key skills for academic and personal success.
- **Curiosity:** Encourages problem-solving and builds confidence through discovery.
- **Celebrating Achievement:** Success is recognised through exploration and progress.

Science in Key Stages 1 and 2						
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Y6 (Knowledge / Skills / Vocabulary)	<u>Animals, including Humans - The Circulatory System</u> - 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.	<u>Evolution and Inheritance</u> - 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.	<u>Living Things and their Habitats - Classification</u> - 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.	<u>Light and Astronomy</u> - 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.	<u>Electricity</u> - 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.	<u>Famous Scientists and Inventors</u>

	Skills – Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs The children decide how to record and present evidence. They record measurements using tables and line graphs. Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary Children decide for themselves how to gather evidence to answer a scientific question. They choose a type of enquiry to carry out and justify their choice. They carry out fair tests, recognising and controlling	Skills – Identifying scientific evidence that has been used to support or refute ideas or arguments Children answer their own and others' questions based on observations they have made, measurements they have taken or information they have gained from secondary sources. When doing this, they discuss whether other evidence (from secondary sources and their scientific understanding) supports or refutes their answer. Children talk about how their scientific ideas change due to new evidence that they have gathered. Children talk about how new discoveries change scientific understanding.	Skills – Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs Children record classifications using tables and classification keys. They record measurements using tally charts. Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary Children recognise how secondary sources can be used to answer questions that cannot be answered through practical work.	Skills – Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary Children independently ask scientific questions, stimulated by a scientific experience. The children select from a range of practical resources to gather evidence to answer their questions. Children select from a range of practical resources to gather evidence to answer their questions. They carry out fair tests, recognising and controlling variables. They decide what observations or measurements to make over time and for how long. Taking measurements, using a range of scientific equipment, with	Skills – Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary Given a wide range of resources, the children decide for themselves how to gather evidence to answer a scientific question. Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs Children record observations using labelled scientific diagrams. Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of	Skills – Identifying scientific evidence that has been used to support or refute ideas or arguments Children talk about how their scientific ideas change due to new evidence that they have gathered. Children talk about how new discoveries change scientific understanding.
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	variables. They decide what observations or measurements to make over time and for how long. They look for patterns and relationships using a suitable sample. Children recognise how secondary sources can be used to answer questions that cannot be answered through their own practical work. Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate During an enquiry, children make decisions as to whether they need to take repeat readings to ensure fair testing.			increasing accuracy and precision, taking repeat readings when appropriate Children select measuring equipment to give the most precise result – a ruler. Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bars and line graphs The children record observations using labelled diagrams. 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 In their conclusions, children: identify causal relationships and patterns in the	and degree of trust in results, in oral and written forms such as displays and other presentations In their conclusions, children: identify causal relationships and patterns in the natural world from their evidence; identify results that do not fit the overall pattern; and explain their findings using their subject knowledge. Children evaluate, for example, the choice of method used, the control of variables, the precision and accuracy or measurements. Children identify any limitations that reduce the trust they have in their data. Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking	
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				natural world from their evidence; identify results that do not fit the overall pattern; and explain their findings using their subject knowledge. Children communicate their findings to an audience using relevant scientific language and illustrations. Using test results to make predictions to set up further comparative and fair tests Children use the scientific knowledge gained from enquiry work to make predictions that they can investigate using comparative and fair tests.	repeat readings when appropriate During an enquiry, children make decisions as to whether they need to increase the sample size in order to get accurate data (closer to the true value). Using test results to make predictions to set up further comparative and fair tests Children use the scientific knowledge gained from enquiry work to make predictions that they can investigate using comparative and fair tests.	
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	Heart, pulse, rate, pumps, blood, blood vessels, transported, lungs, oxygen, carbon dioxide, nutrients, water, muscles, cycle, circulatory system, diet, exercise, drugs, lifestyle	Offspring, sexual reproduction, vary, characteristics, suited, adapted, environment, inherited, species, fossils	Vertebrates, fish, amphibians, reptiles, birds, mammals, invertebrates, insects, spiders, snails, worms, flowering, non-flowering	As for Year 3 - Light, plus straight lines, light rays	Circuit, complete circuit, circuit diagram, circuit symbol, cell, battery, bulb, buzzer, motor, switch, voltage	
Y5 (Knowledge / Skills / Vocabulary)	<u>Living Things and Their Habitats</u> - 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	<u>Properties and Changes of Materials</u> - 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	<u>Earth and Space</u> - 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	<u>Forces</u> - 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	<u>Animals including Humans</u> Describe the changes as humans develop to old age.	

	Life cycle, reproduce, sexual, sperm, fertilises, egg, live young, metamorphosis, asexual, plantlets, runners, bulbs, cuttings	Thermal/electrical insulator/conductor, change of state, mixture, dissolve, solution, soluble, insoluble, filter, sieve, reversible/non-reversible change, burning, rusting, new material	Earth, Sun, Moon, (Mercury, Jupiter, Saturn, Venus, Mars, Uranus, Neptune), spherical, solar system, rotates, star, orbit, planets	Force, gravity, Earth, air resistance, water resistance, friction, mechanisms, simple machines, levers, pulleys, gears.	Puberty – the vocabulary to describe sexual characteristics
	Skills – Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs Record classifications using Venn diagrams. Children present the same data in different ways in order to help with answering questions. Children record measurements using bar charts, line graphs and scatter graphs. Planning different types of scientific enquiries to answer questions, including recognising and controlling	Skills – Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs Record classifications using Venn diagrams, Carroll diagrams and classification keys. They record observations using annotated photographs, videos, labelled diagrams, observational drawings, labelled scientific diagrams or writing. Children decide how to record and present evidence. They record measurements using tables. Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary Children independently ask scientific questions. They may be stimulated by a scientific experience or involve asking further questions based on their developed understanding following an enquiry. Using test results to make predictions to set up further comparative and fair tests Children use scientific knowledge gained from enquiry work to make predictions they can investigate using comparative and fair tests.	Skills – Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs Children record observations using videos. Identifying scientific evidence that has been used to support or refute ideas or arguments Children answer questions based on observations they have made and measurements they have taken. Reporting and presenting findings from enquiries, including conclusions, causal relationships and	Skills – Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary Children select from a range of practical resources to gather evidence to answer their questions. They carry out fair tests, recognising and controlling variables. Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs Children decide how to record and present evidence.	Skills – Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar charts and line graphs Children record observations in writing and in pictures. Record classifications in Venn diagrams. Children present the same data in different ways in order to help with answering questions. Children record measurements using bar charts, line graphs and scatter graphs. Identifying scientific evidence

	variables where necessary Children recognise how secondary sources can be used to answer questions that cannot be answered through practical work.	Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate During the enquiry, children make decisions as to whether they need to adjust the observation period and frequency, in order to get accurate data. The children select measuring equipment to give the most precise results. Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary Children independently ask scientific questions. This may be stimulated by a scientific experience or involve asking further questions based on their developed understanding following an enquiry. The children select from a range of practical resources to gather evidence to answer their questions. They carry out fair tests, recognising and controlling variables. They decide what observations or measurements to make over time and for how long. They look for patterns and relationships using a suitable sample. 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 In their conclusions, children identify causal relationships from their evidence, identify results that do not fit the overall pattern and explain their findings using their subject knowledge.	explanations of and degree of trust in results, in oral and written forms such as displays and other presentations In their conclusions, children identify causal relationships and patterns in the natural world from their evidence. Children encouraged to check the credibility of secondary sources used. Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary Children recognise how secondary sources can be used to answer questions that cannot be answered through practical work. Taking measurements, using a range of scientific equipment, with increasing accuracy	They record measurements using tables. They record observations e.g. using annotated photographs, videos, labelled diagrams, observational drawings, labelled scientific diagrams or writing. Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate Children select measuring equipment to give the most precise results. Using test results to make predictions to set up further comparative and fair tests Children use scientific knowledge gained from enquiries to make predictions they can investigate using	that has been used to support or refute ideas or arguments Children answer questions based on their observations and information from secondary sources. Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary Children recognise how secondary sources can be used to answer questions that cannot be answered through practical work. Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate Children consider the need to check further secondary
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		They communicate their findings to an audience using relevant scientific language and illustrations. Children should evaluate the choice of method used and the control of variables. The children identify any limitations that reduce the trust they have in their data. Identifying scientific evidence that has been used to support or refute ideas Children answer questions based on observations they have made. When doing this, they decide whether evidence from other groups supports or refutes their answer.	and precision, taking repeat readings when appropriate Children consider the need to check further secondary sources in order to ensure accurate data.	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 In their conclusions, children identify causal relationships from their evidence, identify results that do not fit the overall pattern and explain their findings using their subject knowledge. They communicate their findings to an audience using relevant scientific language and illustrations. Evaluate the choice of method used, the control of variables, the precision and accuracy of measurements.	sources in order to ensure accurate data. Reporting and presenting findings, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations Children encouraged to check the credibility of secondary sources used. In their conclusions, children identify causal relationships and patterns in the natural world from the evidence, identify results that do not fit the overall pattern and explain their findings using their subject knowledge.
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Y4 (knowledge / skills / vocabulary)	<u>Sound</u> • 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.	<u>Electricity</u> • 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.	<u>States of Matter</u> • 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.	<u>Animals including humans</u> • 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.	<u>Living things and their habitats</u> • 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.
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	Sound, source, vibrate, vibration, travel, pitch (high, low), volume, faint, loud, insulation	Electricity, electrical appliance/device, mains, plug, electrical circuit, complete circuit, component, cell, battery, positive, negative, connect/connections, loose connection, short circuit, crocodile clip, bulb, switch, buzzer, motor, conductor, insulator, metal, non-metal, symbol	Solid, liquid, gas, state change, melting, freezing, melting point, boiling point, evaporation, temperature, water cycle	Digestive system, digestion, mouth, teeth, saliva, oesophagus, stomach, small intestine, nutrients, large intestine, rectum, anus, teeth, incisor, canine, molar, premolars, herbivore, carnivore, omnivore, producer, predator, prey, food chain	Classification, classification keys, environment, habitat, human impact, positive, negative, migrate, hibernate
	Skills – Asking relevant questions and using different types of scientific enquiries to answer them Given a range of resources, children decide for themselves how to gather evidence to answer the question. Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including	Skills – 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 Children decide how to record and present evidence. Children record classifications using Venn diagrams. Record observations using pictures and labelled diagrams.	Skills – Asking relevant questions and using different types of scientific enquiries to answer them Recognise when secondary sources can be used to answer questions that cannot be answered through practical work. Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions. Recording findings using	Skills – Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers Children make systematic and careful observations. Children use equipment to measure temperature. They use standard units for their measurements. Gathering, recording,	Skills – Asking relevant questions and using different types of scientific enquiries to answer them Recognise when secondary sources can be used to answer questions that cannot be answered through practical work. 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 Children record observations using pictures. Record classifications – sometimes using Venn and Carroll diagrams. Setting up simple practical enquiries, comparative and fair tests Children carry out observations and tests to classify. Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions

	thermometers and data loggers The children make systematic and careful observations. The children use a data logger to measure the volume. They use standard units for their measurements. Setting up simple practical enquiries, comparative and fair tests Children plan to carry out comparative tests. Carry out simple fair tests. 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 They record measurements using tables. Identifying differences, similarities or	Setting up simple practical enquiries, comparative and fair tests Children plan to carry out comparative tests. Using straightforward scientific evidence to answer questions or to support their findings Children answer scientific questions based on observations they have made, measurements they have taken. The answers are consistent with the evidence. Identifying differences, similarities or changes related to simple scientific ideas and processes Interpret their data to generate simple comparative statements. They begin to identify naturally occurring patterns and causal relationships. Using results to draw simple conclusions, make	simple scientific language, drawings, labelled diagrams, keys, bar charts and tables Record their observations using labelled diagrams. Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions Communicate their findings to an audience both orally and in writing, using appropriate scientific vocabulary. Identifying differences, similarities or changes related to simple scientific ideas or processes Interpret their data to generate simple comparative statements. They	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 Record classifications using a Venn diagram. Record observations using labelled diagrams and in writing. Setting up simple practical enquiries, comparative and fair tests Children select from a range of practical resources to gather evidence to answer questions. They follow their plan to carry out fair tests, observations over time and pattern seeking. Using straightforward scientific evidence to answer questions or to support their findings	Communicate findings to an audience in writing, using appropriate scientific vocabulary.
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	changes related to simple scientific ideas and processes Interpret their data to generate simple comparative statements. They begin to identify naturally occurring patterns and causal relationships. Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions They draw conclusions based on their evidence and current subject knowledge. Children identify ways in which they adapted their method as they progressed or how they would do it differently if they repeated the enquiry. Children use their evidence to suggest values for different items tested using the same method. Reporting on findings from	predictions for new values, suggest improvements and raise further questions Draw conclusions based on their evidence and current subject knowledge. Identify ways in which they adapted their method as they progressed or how they would do it differently if they repeated the enquiry. Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions Children communicate their findings to an audience orally, using appropriate scientific vocabulary.	begin to identify naturally occurring patterns. Using straightforward scientific evidence to answer questions or to support their findings Children answer questions based on observations they have made. The answers are consistent with the evidence. Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers The children make systematic and careful observations. Setting up simple practical enquiries,	Children answer questions based on observations they have made and measurements they have taken. The answers are consistent with the evidence. Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions Children draw conclusions based on their evidence and current subject knowledge. Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions They communicate their findings to an audience both orally and in writing, using appropriate scientific vocabulary. Identifying differences,	
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	enquiries, including oral and written explanations, displays or presentations of results and conclusions They communicate their findings to an audience in writing, using scientific vocabulary.		comparative and fair tests Children follow their plan to carry out observations over time. The children select from a range of practical resources to gather evidence to answer questions.	similarities or changes related to simple scientific ideas and processes Children begin to identify naturally occurring patterns and causal relationships.	
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Y3 (knowledge / skills / vocabulary)	<u>Rocks and soils</u> • 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.	<u>Animals including humans – nutrition</u> • 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.	<u>Forces and Magnets</u> • 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	<u>Light</u> • 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.	<u>Animals including humans – skeletons and muscles</u> • Identify that humans and some other animals have skeletons and muscles for support, protection and movement.	<u>Plants</u> • Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers. • Explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant. • Investigate the way in which water is transported within plants. • Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.
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	Rock, stone, pebble, boulder, grain, crystals, layers, hard, soft, texture, absorb water, soil, fossil, marble, chalk, granite, sandstone, slate, soil, peat, sandy/chalk/clay soil	Nutrition, nutrients, carbohydrates, sugars, protein, vitamins, minerals, fibre, fat, water	Force, push, pull, twist, contact force, non-contact force, magnetic force, magnet, strength, bar magnet, ring magnet, button magnet, horseshoe magnet, attract, repel, magnetic material, metal, iron, steel, poles, north pole, south pole	Light, light source, dark, absence of light, transparent, translucent, opaque, shiny, matt, surface, shadow, reflect, mirror, sunlight, dangerous	Skeleton, bones, muscles, support, protect, move, skull, ribs, spine, muscles, joints	Photosynthesis, pollen, insect/wind pollination, seed formation, seed dispersal (wind dispersal, animal dispersal, water dispersal)
	Skills – Asking relevant questions and using different types of scientific enquiries to answer them Given a range of resources, the children decide for themselves how to gather evidence to answer the question. Children recognise when secondary sources can be used to answer questions that cannot be answered through practical work. Gathering, recording, classifying and	Skills – 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 Children record classifications using Venn diagrams. Using straightforward scientific evidence to answer questions or support their findings	Skills – 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 The children sometimes decide how to record and present evidence.	Skills – Asking relevant questions and using different types of scientific enquiries to answer them Children answer questions posed by the teacher. Setting up simple practical enquiries, comparative and fair tests Children carry out comparative tests and observations over time. Gathering, recording, classifying and presenting data in a variety of ways to	Skills – Asking relevant questions and using different types of scientific enquiries to answer them The children consider their prior knowledge when asking questions. They independently use a range of question stems. Where appropriate, they answer these questions. The children recognise when secondary sources can be used to answer questions that cannot be	Skills – Asking relevant questions and using different types of scientific enquiries to answer them The children consider their prior knowledge when asking questions. They independently use a range of question stems. Where appropriate, they answer these questions. The children recognise when secondary sources can be used to answer questions that cannot be

	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 The children record their observations using labelled diagrams. The children record their measurements using tables. Setting up simple practical enquiries, comparative and fair tests The children select from a range of practical resources to gather evidence to answer questions generated by the teacher. They follow their plan to carry out comparative tests. Identifying differences, similarities or changes related to simple scientific ideas and processes	Children answer their own and others' questions based on information they have gained from secondary sources.	Children record classifications using Venn diagrams and tables. Children record measurements using a table and a bar chart (given templates, if required). Children are supported to present the same data in different ways in order to help with answering the question. Setting up simple practical enquiries, comparative and fair tests Children plan to carry out observations and tests to classify and comparative tests. Making systematic and careful observations and, where appropriate, taking accurate measurements using standard	help in answering questions. Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables Children record classifications using Venn diagrams. Children record measurements using tables. Children record observations using photographs/pictures. Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions Children use their evidence to suggest values for different items tested using the same method. Children draw conclusions based on their evidence and current subject knowledge.	answered through practical work. 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 Record classifications using tables. Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions Following a scientific experience, the children ask further questions which can be answered by extending the same enquiry.	answered through practical work. 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 Record classifications using tables. Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions Following a scientific experience, the children ask further questions which can be answered by extending the same enquiry. Setting up simple practical enquiries,
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	Children interpret their data to generate simple comparative statements based on their evidence. They begin to identify causal relationships. Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers Children use equipment to measure capacity. Using straightforward scientific evidence to answer questions or to support their findings Children answer their own and others' questions based on observations they have made and measurements they have taken. The answers are consistent with the evidence.		units, a range of equipment, including thermometers and data loggers Children use equipment for measuring length. They use standard units for their measurements – cm/m. Using straightforward scientific evidence to answer questions or to support their findings Children answer their own and others' questions based on observations they have made. Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions Children draw conclusions based on their evidence and current			comparative and fair tests Children carry out pattern seeking.
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			subject knowledge. Children identify ways in which they adapted their method as they progressed or how they would do it differently if they repeated the enquiry. Asking relevant questions and using different types of scientific enquiries to answer them Given a range of resources, the children decide for themselves how to gather evidence to answer the question. They identify the type of enquiry that they have chosen to answer their question.			
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Y2 (knowledge / skills / vocabulary)	<u>Living Things and Their Habitats</u> • 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.	<u>Fighting Fit – Animals, including humans</u> • 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	<u>Plants and Living Things</u> • 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.	<u>Materials and Their Properties</u> • Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. • Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.
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	Living, dead, never been alive, suited, suitable, basic needs, food, food chain, shelter, move, feed Names of local habitats e.g. pond, woodland etc. Names of micro-habitats e.g. under logs, in bushes etc.	Offspring, reproduction, growth, child, young/old stages (examples - chick/hen, baby/child/adult, caterpillar/butterfly), exercise, heartbeat, breathing, hygiene, germs, disease, food types (examples – meat, fish, vegetables, bread, rice, pasta)	As for Year 1 plus light, shade, sun, warm, cool, water, grow, healthy	Names of materials – wood, metal, plastic, glass, brick, rock, paper, cardboard Properties of materials – as for Year 1 plus opaque, transparent and translucent, reflective, non-reflective, flexible, rigid Shape, push/pushing, pull/pulling, twist/twisting, squash/squashing, bend/bending, stretch/stretching
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	Skills – Asking simple questions and recognising that they can be answered in different ways The children are involved in planning how to use resources provided to answer the questions using different types of enquiry, helping them to recognise that there are different ways in which questions can be answered. Identifying and classifying Children use their observations and testing to compare objects, materials and living things. Gathering and recording data to help in answering questions Children record their observations in writing. They classify using simple prepared tables and sorting rings. Children record their measurements using tally charts, pictograms and block graphs. Using their observations and ideas to suggest answers to questions Children use their experiences of the world around them to suggest appropriate answers to questions. They are supported to relate these to their evidence – observations they have made and information they have gathered from secondary sources. Children recognise ‘best and worst’ from their data.	Skills – Asking simple questions and recognising that they can be answered in different ways The children develop their ability to ask questions. The children are involved in planning how to use resources provided to answer questions using different types of enquiry, helping them to recognise that there are different ways in which questions can be answered. Identifying and classifying The children sort and group objects, identifying their own criteria for sorting. Gathering and recording data to help in answering questions They classify using simple prepared tables and sorting rings. Children record observations using photographs, videos, drawings and writing. Performing simple tests Children use practical resources provided to gather evidence to answer questions. They make observations over time and carry out comparative tests. They also complete pattern seeking enquiries. Observing closely, using simple equipment Children make careful observations to support them in noticing change. They use appropriate senses, aided by digital microscopes, to make their observations. Using their observations and ideas to suggest answers to questions Children use their experiences of the world around them to suggest appropriate answers to questions. They are supported to relate these to their evidence –	Skills – Asking simple questions and recognising that they can be answered in different ways The children are involved in planning to how to use resources provided to answer the question using different types of enquiry, helping them to recognise that there are different ways in which questions can be answered. Identifying and classifying Children use their observations to compare objects and materials. They sort and group these things, identifying their own criteria for sorting. Observing closely, using simple equipment Explore the world around them and make careful observations using their senses and digital microscopes.	Skills – Asking simple questions and recognising that they can be answered in different ways Children plan how to use resources provided to answer the questions using different types of enquiry, helping them to recognise that there are different ways in which questions can be answered. Identifying and classifying Children use their observations to compare objects and materials. They sort and group these things, identifying their own criteria for sorting. Gathering and recording data to help in answering questions Record observations in writing. Using their observations and ideas to suggest answers to questions
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		information they have gained from secondary sources.	Take measurements using non-standard units. Performing simple tests The children use practical resources provided to gather evidence to answer questions generated. They carry out comparative tests, pattern seeking enquiries and make observations over time. Use their observations and ideas to suggest answers to questions Children use their experiences of the world around them to suggest appropriate answers to questions. They are supported to relate these to their evidence – observations they have made and measurements they have made. Children recognise 'best and worst' from their data. Gathering and recording data to	Children use their experiences of the world around them to suggest appropriate answers to questions. They are supported to relate these to their evidence – observations they have made. Children recognise 'best and worst'. Performing simple tests Use practical resources provided to gather evidence to answer questions. They carry out tests to classify and comparative tests.
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			help in answering questions Record observations as drawings and in writing. Children record their measurements using prepared tables and block graphs.	
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Y1 (knowledge / skills / vocabulary)	<u>Animals including humans</u> • 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.	<u>Seasonal change (and then ongoing)</u> • Observe changes across the four seasons. • Observe and describe weather associated with the seasons and how day length varies.	<u>Plants</u> • 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	<u>Materials</u> • 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.
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	Head, body, eyes, ears, mouth, teeth, leg, tail, wing, claw, fin, scales, feathers, fur, beak, paws, hooves Names of animals experienced first-hand from each vertebrate group Parts of the body Senses – touch, see, smell, taste, hear, fingers (skin), eyes, nose, ear and tongue	Weather (sunny, rainy, windy, snowy etc.) Seasons (winter, summer, spring, autumn) Sun, sunrise, sunset, day length	Leaf, flower, blossom, petal, fruit, berry, root, seed, trunk, branch, stem, bark, stalk, bud Names of trees in the local area Names of garden and wild flowering plants in the local area	Object, material, wood, plastic, glass, metal, water, rock, brick, paper, fabric, elastic, foil, card/cardboard, rubber, wool, clay, hard, soft, stretchy, stiff, bendy, floppy, waterproof, absorbent, breaks/tears, rough, smooth, shiny, dull, see-through, not see-through
	Skills – Observe closely, using simple equipment Children explore the world around them using appropriate senses – touch, see, smell and hear. Children begin to take measurements by comparisons. Identifying and classifying Children use their observations to compare living things. They sort and group these things, identifying their own criteria for sorting.	Skills – Observe closely, using simple equipment Children explore the world around them. They make careful observations to support them in noticing change. Ask questions and recognise these can be answered in different ways The children answer questions developed with the teacher often through a scenario. The children are involved in planning how to use resources provided to answer	Skills – Observe closely, using simple equipment Children explore the world around them. They make careful observations to support identification and comparison. They use appropriate senses, aided by magnifying glasses, to make their observations. Perform simple tests The children use practical resources provided to gather evidence to answer questions generated by themselves or the teacher. They carry out tests to make observations over time. Identifying and classifying Children use their observations to compare living things. They sort and group these things, identifying their own criteria for sorting. They use simple secondary sources (such as identification sheets) to name living	Skills – Perform simple tests Children use practical resources provided to gather evidence to answer questions. They carry out comparative tests. Identifying and classifying Children use their observations and testing to compare objects and materials. They sort and group these things based on their own criteria. Gathering and recording data to help in answering questions Children record observations in writing. They record their measurements using prepared tables. They classify using simple prepared tables and sorting rings. Using their observations and ideas to suggest answers to questions Children use their experiences of the world around them to suggest appropriate answers to questions. They are supported

	Gathering and recording data to help in answering questions Children record their observations using drawings and labelled diagrams. Children classify using simple prepared tables and sorting rings. Using their observations and ideas to suggest answers to questions Children recognise the 'biggest and smallest'.	the questions using different types of enquiry. Identifying and classifying Children use their observations to compare living things. They sort and group these things, identifying their own criteria for sorting. Gathering and recording data to help in answering questions The children record their measurements using pictograms.	things. They describe the characteristics they used to identify a living thing. Gathering and recording data to help in answering questions The children record their observations using drawings and labelled diagrams. They classify using simple prepared tables and sorting rings.	to relate these to their evidence e.g. observations they have made. The children recognise 'best and worst' from their data.
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Science in EYFS.
Characteristics of Effective Learning (CofEL)
<u>Playing and Exploring</u> Realise that their actions have an effect on the world, so they want to keep repeating them. Plan and think ahead about how they will explore or play with objects. Guide their own thinking and actions by referring to visual aids or by talking to themselves whilst playing. Make independent choices. Bring their own interests and fascinations into early years settings. Respond to new experiences that you bring to their attention. <u>Active Learning</u> Begin to predict sequences because they know routines. Begin to correct their mistakes themselves. Keep on trying when things are difficult.

Creating and Thinking Critically Take part in simple pretend play. Sort materials. Review their progress as they try to achieve a goal. Solve real problems. Know more, so feel confident about coming up with their own ideas. Make more links between those ideas. Concentrate on achieving something that's important to them.	
Birth to 5 Matters.	Development Matters.
<u>Range 3 and 4 (Nursery)</u> Range 3: Understanding the World • Exploration and Curiosity: Begins to explore and respond to different natural phenomena in their environment, such as water, light, or shadows. • Noticing Changes: Shows interest in objects, materials, and how things work, experimenting with actions like pushing, pulling, or dropping. • Engaging with Nature: Enjoys exploring the outdoors and noticing features such as plants, animals, or weather changes. Expressive Arts and Design ...s to explore objects and materials, noticing differences in textures, sounds, appearances. Range 4: Understanding the World • Cause and Effect: Explores cause-and-effect relationships, such as pressing a button to see a light come on or pouring water to see it flow. • Observation Skills: Notices detailed features of objects, living things, and the natural world, such as the shape of leaves, the color of flowers, or the behavior of animals.	<u>3 & 4 year olds (Nursery)</u> Use all their senses in hands-on exploration of natural materials (UW). Explore collections of materials with similar and/or different properties. (UW). Talk about what they see, using a wide vocabulary. (UW). Plant seeds and care for growing plants. (UW). Understand the key features of the life cycle of a plant and an animal. (UW). Begin to understand the need to respect and care for the natural environment and all living things. (UW). Explore and talk about different forces they can feel. (UW). Talk about the differences between materials and changes they notice. (UW).

• Awareness of Change: Shows interest in and curiosity about changes over time, such as seeds growing into plants or ice melting. • Environmental Engagement: Shows curiosity about the natural environment, talking about what they see, hear, or feel, such as <i>the wind is blowing</i> or <i>the bird is chirping</i>. Physical Development • Hands-On Exploration: Develops fine motor skills through physical engagement with natural materials like sand, soil, water, or leaves.	
<u>Range 5 & 6 (Reception)</u> <u>Range 5:</u> Understanding the World • Exploring Natural Phenomena: Explores and talks about forces and how things work, such as why objects float or sink, or how magnets attract. • Noticing Changes: Observes and comments on the changes they see in the environment, like leaves changing color or the weather becoming colder. • Animal and Plant Awareness: Develops an interest in living things, observing animals and plants, and talking about features like shapes, sizes, or colors. • Cause and Effect: Explores and begins to understand cause-and-effect relationships, such as what happens when water is poured, sand is dug, or seeds are planted. • Materials and Properties: Shows curiosity about different materials, exploring their textures, shapes, and uses, and identifying similarities or differences.	<u>Children in Reception</u> Explore the natural world around them (UW). Describe what they see, hear and feel whilst outside. (UW). Recognise some environments that are different from the one in which they live. (UW). Understand the effect of changing seasons on the natural world around them. (UW).

Communication and Language • Uses a widening vocabulary to talk about what they see, hear, and experience, including terms like <i>soft</i>, <i>hard</i>, <i>wet</i>, <i>dry</i>, <i>growing</i>, or <i>changing</i>. Range 6: Understanding the World • Living Things and Habitats: Talks about similarities and differences in living things, exploring their habitats and how they meet their needs (e.g., animals in water or on land). • Observation and Explanation: Notices, observes, and explains changes in the natural world, such as the growth of plants, melting ice, or changes in the weather. • Scientific Inquiry: Explores and questions how things work, such as what makes wheels roll or how shadows are formed, beginning to make simple predictions. • Sustainability and Care: Develops an understanding of how to care for the environment, such as watering plants, feeding birds, or picking up litter. • Seasons and Weather: Recognises and talks about patterns in weather and seasons, identifying how they affect people, animals, and plants. Physical Development • Engages in activities that develop fine motor skills while exploring scientific materials, such as planting seeds, digging soil, or sorting objects by size or texture.	
Early Learning Goals (ELG).	
• Explore the natural world around them, making observations and drawing pictures of animals and plants. (UW – The Natural World) • Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class. (UW – The Natural World)	

• Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter. (UW – The Natural World)	
What Science Looks like in Nursery In nursery, science is woven into everyday experiences, fostering curiosity, exploration, and observation of the natural and physical world. Children use all their senses to investigate natural materials, noticing textures, colors, and patterns, and engage with collections of objects to compare properties like hard and soft or heavy and light. They observe and discuss changes, such as seeds growing, ice melting, or leaves changing color, building an understanding of cause and effect. Outdoor play is integral, offering opportunities to explore weather, seasons, and local wildlife, encouraging respect and care for living things and the environment. Children experiment with forces, such as pushing and pulling or rolling objects, and explore contrasting environments, like comparing parks and beaches. Practitioners model rich vocabulary, supporting children to describe what they see, hear, and feel, while playful, hands-on activities lay the foundation for scientific thinking and inquiry. Through these experiences, science in nursery becomes an exciting and meaningful part of their world.	By the End of Nursery, a Child at the Expected Level of Development Will Know By the end of Nursery, a child at the expected level of development in science will have developed a strong sense of curiosity about the world around them. They will have explored and observed living things, such as plants, animals, and insects, showing interest in how they grow and change. Children will notice and talk about changes in their environment, such as the weather, the seasons, or how materials like ice or water behave. They will begin to understand cause and effect, such as noticing that things float or sink or that plants need water to grow. Through hands-on exploration, they will have used their senses to investigate natural materials and will be able to describe their observations using simple scientific language like <i>wet</i>, <i>dry</i>, <i>big</i>, <i>small</i>, <i>soft</i>, or <i>rough</i>. Children will begin to care for living things and the environment, showing respect for nature and understanding basic concepts of change and growth. They will express their ideas with increasing confidence, using their growing vocabulary to talk about what they see and experience in the natural world.
What Science Looks like in Reception.	By the End of Reception, a Child at the Expected Level of Development Will Know.
In Reception, science becomes a more focused and purposeful exploration of the world, building on children's natural curiosity. Children begin to ask questions about how and why things happen, using their observations and experiences to make simple predictions and explanations. They explore changes in the natural world, such as how plants grow, how weather changes over time, and how animals and people adapt to their environments. Hands-on investigations, like planting seeds, experimenting with water, or observing living creatures, help children develop a deeper understanding of living things, materials, and forces. They begin to use scientific vocabulary to describe their findings, such as <i>growing</i>, <i>changing</i>, <i>heavier</i>, <i>lighter</i>, <i>cold</i>, and <i>hot</i>. Through guided discovery and practical activities, children learn to make observations, notice patterns, and talk about the relationships between cause and effect. Science in Reception emphasises exploration, enquiry, and experimentation, supporting children's developing understanding of the world around them and nurturing their ability to think like young scientists.	By the end of Reception, a child at the expected level of development in science will have a growing understanding of the natural world and the changes around them. They will be able to observe and describe how plants and animals grow, change, and adapt to their environments, using simple scientific vocabulary like <i>growth</i>, <i>lifecycles</i>, <i>habitat</i>, and <i>seasons</i>. Children will understand basic concepts of force and motion, such as pushing, pulling, and the effects of gravity. They will have explored and noticed the properties of materials, identifying whether things are hard, soft, rough, or smooth, and how they change, like water turning to ice. Children will demonstrate an understanding of cause and effect through experiments and observations, such as recognising the need for light and water for plant growth. They will be able to make simple predictions and express their ideas using appropriate vocabulary. Through hands-on exploration and enquiry, they will develop a sense of wonder and an understanding of how things work, while also showing respect for the environment and living things.

Scientific Specific Vocabulary Nursery

Explore, Investigate, Observe, Look, Touch, Feel, See, Hear, Smell, Taste

Hard, Soft, Smooth, Rough, Wet, Dry, Cold, Hot, Heavy, Light, Bumpy, Sticky, Squishy, Shiny, Fluffy, Crunchy, Warm

Plant, Tree, Flower, Leaf, Seed, Roots, Grow, Petal, Fruit, Vegetable, Animal, Insect, Bug, Bird, Fish, Dog, Cat, Butterfly, Ladybird

Sky, Sun, Cloud, Rain, Snow, Wind, Mud, Sand, Soil, Water, Ice, Shadow, Light, Snow

Change, Grow, Grow bigger, Shrink, Change shape, Melt, Freeze, Harder, Softer, Hotter, Colder

Why?, Because, Happen, Effect, Action, Reaction, Push, Pull

Roll, Slide, Bounce, Float, Sink, Jump, Fly

Up, Down, Under, Over, In, Out, On, Off, Next to, Behind, In front of

Sunny, Rainy, Windy, Cloudy, Cold, Hot, Dry, Wet, Stormy

Magnifying glass, Binoculars, Telescope, Bucket, Shovel, Watering can

Scientific Specific Vocabulary Reception

Explore, Investigate, Observe, Look, Touch, Feel, See, Hear, Smell, Taste, Question, Predict, Explain

Hard, Soft, Smooth, Rough, Wet, Dry, Cold, Hot, Heavy, Light, Bumpy, Sticky, Squishy, Shiny, Fluffy, Crunchy, Warm, Transparent, Opaque, Flexible, Brittle, Absorb, Float, Sink

Plant, Tree, Flower, Leaf, Seed, Roots, Stem, Petal, Fruit, Vegetable, Animal, Insect, Bug, Bird, Fish, Dog, Cat, Butterfly, Ladybird, Habitat, Lifecycles, Grow, Decay, Feed, Care, Alive, Dead

Sky, Sun, Cloud, Rain, Snow, Wind, Mud, Sand, Soil, Water, Ice, Shadow, Light, Weather, Moon, Stars, Day, Night, Seasons (Spring, Summer, Autumn, Winter)

Change, Grow, Grow bigger, Shrink, Change shape, Melt, Freeze, Harder, Softer, Hotter, Colder, Ripen, Germinate, Grow taller, Sprout, Blossom

Why?, Because, Happen, Effect, Action, Reaction, Push, Pull, Force, Motion, Bounce, Roll, Move

Roll, Slide, Bounce, Float, Sink, Jump, Fly, Twist, Spin, Stretch, Squeeze, Expand

Up, Down, Under, Over, In, Out, On, Off, Next to, Behind, In front of, Between, Above, Below, Around, Through

Sunny, Rainy, Windy, Cloudy, Cold, Hot, Dry, Wet, Stormy, Foggy, Lightning, Thunder, Freezing, Melting, Temperature

Magnifying glass, Binoculars, Telescope, Bucket, Shovel, Watering can, Microscope, Ruler, Scale, Thermometer, Sandpaper, Sponge, Tongs