Science Progression of Knowledge

	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Plants	**Understanding the world** Use all their senses in hands-on exploration of natural materials. Explore collections of materials with similar and/or different properties. Plant seeds and care for growing plants. Understand the key features of the life cycle of a plant and an animal. Begin to understand the need to respect and care for the natural environment and all living things.	**Understanding the world** Explore the world around them making observations and drawings of plants. 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. **Communication and language** Express their ideas and feelings about their experiences using full sentences.	Name common plants and describe the basic structure of flowering plants, including deciduous and evergreen. 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.	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.	**Living Things and Habitats** Recognise that living things can be grouped in a variety of ways.	**Living Things and Habitats** Describe the differences in the lifecycles of a mammal, an amphibian, an insect and a bird.	**Living Things and Habitats** Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants, and animals. Give reasons for classifying plants and animals based on specific characteristics
Animals including humans	**Understanding the world** Understand the key features of the life cycle of a plant and an animal. Begin to understand the	**Understanding the world** Explore the natural world around them, making observations and drawing pictures of animals.	Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. Identify and name a variety of	Notice that animals, including humans, have offspring which grow into adults. Find out about and describe the basic needs of 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.	Describe the simple functions of the basic parts of the digestive system in humans. Identify the different types of teeth in humans	Describe the changes as humans develop from birth to old age.	Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function. Identify and name the main parts of the

	need to respect and care for the natural environment and all living things. Use all their senses in hands-on exploration of natural materials. Begin to make sense of their own life-story and family's history. Understand the key features of the life cycle of a plant and an animal. **Personal, Social and Emotional Development** Be increasingly independent in meeting their own care needs, e.g., brushing teeth, using the toilet, washing and drying their hands thoroughly. Make healthy choices about food, drink, activity and toothbrushing.	Begin to make sense of their own life-story and family's history. Begin to understand the key features of the lifecycle of a plant and animal. **People, culture and communities** Describe their immediate environment using knowledge from observation, discussion, stories and non-fiction texts and maps. **Personal, Social and Emotional Development** Manage their own basic hygiene and personal needs, including dressing, going to the toilet and understanding the importance of healthy food choices.	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.	for survival (water, food and air). Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.	Identify that humans and some other animals have skeletons and muscles for support, protection and movement.	and their simple functions. Construct and interpret a variety of food chains, identifying producers, predators and prey.	**Living Things and Habitats** Describe the differences in the lifecycles of a mammal, an amphibian, an insect and a bird. Describe the life processes of reproduction in some plants and animals.	human circulatory system and describe the function of the heart, blood vessels and blood. Describe the ways in which nutrients and water are transported within animals, including humans.

Living Things and Habitats	**Understanding the world** Use all their senses in hands-on exploration of natural materials. Explore collections of materials with similar and/or different properties. Begin to understand the need to respect and care for the natural environment and all living things. **Mathematics** Describe a familiar route. Discuss routes and locations, using words like 'in front of' and 'behind'. Extend and create ABAB patterns – stick, leaf, stick, leaf.	**People, culture and communities** Explain some similarities and differences between life in this country and life in other countries, drawing on knowledge from stories, non-fiction texts and maps. **Understanding the world** Begin to understand the need to respect and care for the natural environment and all living things. Explore the natural world around them.	**Plants** Identify and describe the basic structure of a variety of common flowering plants, including trees. **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.	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.	**Plants** Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves, and flowers.	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 environment. Recognise that environments can change and that this can sometimes pose dangers to living things.	Describe the differences in the lifecycles of a mammal, an amphibian, an insect and a bird. Describe the life processes of reproduction in some plants and animals.	Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants, and animals. Give reasons for classifying plants and animals based on specific characteristics
Evolution and Inheritance								**<u>Evolution and Inheritance</u>** 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 living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago.
Materials **Rocks and Soils**		**Speaking** Offer explanations for why things happen, making use of recently introduced vocabulary from stories, non-fiction, rhymes and poems where appropriate. **Understanding of the world** Use all their senses in hands on exploration of natural materials. Explore collections of materials with similar and/or different properties. Talk about what they see using a wide vocabulary. Explore how things work. Talk about the difference between materials and changes they notice. Understand some important	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.	Notice that some need contact between two objects, but magnetic forces can act at a distance (Forces) **<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 a rock. Recognise that soils are made	**<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 Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.	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 gases to decide how mixtures might be separated, including through filtering, sieving and evaporating.	**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.

		processes and changes in the natural world around them, including changing states of matter.			from rocks and organic matter.		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 this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda.	
Seasonal Changes		**Understanding of the world** Understand some important processes and changes in the natural world around them, including seasons.	Observe changes across the four seasons. Observe and describe weather associated with the seasons and how day length varies.				**Forces** Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.	**Light** 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.

Earth and Space					**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 our eyes. Recognise that shadows are formed when the light source is blocked by a solid object. Find patterns in the way the size of the shadows change		**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 Earth rotation to explain day and night due to the apparent movement of the sun across the sky.	
Light and Sound	**Understanding of the world** Explore how things work. Talk about the differences in materials and changes they notice Explore how things work. **Expressive Arts and Design**	**Understanding of the world** Explore materials with different properties. Talk about what they see, using a wide vocabulary. **Expressive arts and design** Safely use and explore a variety of materials, tools and techniques,	**Materials** 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.	**Materials** Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock. **Plants** Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.	**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	**Sound** To identify how sounds are made, associating some of them with something vibrating. Recognise that vibrations from sounds travel through a medium to the ear.	**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.	**Light** Recognise that light travels 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

	Use drawing to represent ideas like movement or loud noises. Listen with increased attention to sounds. Respond to what they have heard, expressing their thoughts and feelings	experimenting with colour, design, texture form and function. Explore colour and colour-mixing. Play instruments with increasing control to express their feelings and ideas.	**Seasonal Change** Observe changes across the four seasons. Observe and describe weather associated with the seasons and how day length varies.		ways to protect our eyes. Recognise that shadows are formed when the light source is blocked by a solid object. Find patterns in the way the size of the shadows change **Plants** Explore [illegible] requirements of plants for growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant.	Find patterns between 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 sound gets fainter as the distance from the sound source increases.	**Earth and Space** Use Earth rotation to explain day and night due to the apparent movement of the sun across the sky.	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 object that casts them.
Forces	**Understanding the World.** Explore how things work. Explore and talk about different forces they can feel. Talk about the differences between materials and changes they notice.	**Understanding the World.** Explore and talk about different forces they can feel. Can talk about the differences between materials and changes they notice.	**Materials** 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.	**Materials** Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper, and cardboard for particular uses. Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.	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		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	

					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.		smaller force to have a greater effect. To describe the movements of the Earth, and other planets, relative to the Sun in the solar system (Earth and Space)	
Electricity	**Understanding the World.** Explore how things work.	Shows skills in making toys work by pressing parts or lifting flaps to achieve effects such as sound, movement or new images.	**Materials** 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.	**Materials** Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper, and cardboard for particular uses.		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	**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.	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 potion of switches. Use recognised symbols when representing a simple circuit in a diagram.

						lights in a simple series circuit. Recognise some common conductors and insulators, and associate metals with being good conductors.		

Science Progression of Working Scientifically Skills								
	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Asking Questions 		Shows curiosity about objects, events and people. Questions why things happen. Asks questions to clarify understanding and aspects of their familiar world e.g. place they live or natural world.	Explore the world around them and raise their own questions. (e.g growing, animals in their habitat, everyday materials) Can answer questions supported by the teacher, often through scenarios and recognise questions can be answered in different ways. Can begin to ask simple questions and use simple secondary sources to find answers.	Can answer questions supported by the teacher, often through scenarios and recognise questions can be answered in different ways. Can begin to ask simple questions and use simple secondary sources to find answers. Able to ask yes and no questions to sort and classify.	Raise own questions about the world around them and why this happens the way they do (e.g. the role of the roots and stem in nutrition and support, or how rocks are formed). Recognise how and when to use secondary sources to answer questions that cannot be answered in practical science. Can write a range of questions relevant to the topic.	Can decide how to gather evidence to answer questions. Raise questions to help identify and group (such as how a habitat changes, animals and living things including plants). Can write a range of questions using the world around them and their own scientific knowledge.	Can study and raise questions to answer (including about their local environment throughout the year). Can ask relevant questions and suggest reasons for similarities and differences. Use their scientific experiences to explore ideas and raise different questions. Can create further questions from	Can raise questions about local animals and how they are adapted to their environment. Can raise questions about a range of phenomena e.g., rainbows, colours on soap bubbles, objects looking bent in water. Can ask questions about a range of materials in order to support classification.

			Able to ask yes and no questions to sort and classify.		Can answer questions posed by the teacher, independently or with support. Identify new questions from data. Can raise questions and carry out tests with support to find things out. Can carry out research using a small range of secondary sources.	They recognise when secondary sources can be used to answer questions and can select appropriate information from sources.	enquiries to investigate. Independently uses secondary sources to find relevant facts about a topic. Raise further questions from enquiries/research.	Ask appropriate questions to group and classify. Can use secondary sources to research (e.g., unfamiliar animals and plants from a broad range of habitats). Use ideas from secondary sources to support their ideas. Can raise questions to further prove a scientific enquiry.
Making Predictions 		Shows curiosity about objects, events and people. Questions why things happen.	Can make basic predictions over things they can see or their own ideas. Can use some scientific vocabulary.	Draws on knowledge from observations to make a prediction. Can begin to test predictions and later answer questions (predictions can be a guess). Ask questions about what might happen in the future.	Uses evidence and subject knowledge to refute statements. Make predictions from questions posed. Makes further predictions from what is observed or tested.	Use subject knowledge or research to make predictions. Raise further predictions from results based on patterns. Make predictions for new values.	Use subject knowledge, observations, or previous learning to make predictions. Can add further detail and explanations for their predictions when prompted. Can base predictions on previous scientific enquiry.	Develops predictions not based on results of a scientific enquiry but using own ideas and subject knowledge. Use evidence to support predictions. Gather evidence through practical science to support predictions.

							Can identify a range of variables which could affect their investigation.	Use test results to make predictions to set up further comparative and fair tests.
Setting up Tests 		Find ways to solve problems/find new ways to do things. Test out ideas. Take risks through trial and error. Engage in open ended activities. Choose the resources they need for their chosen activity from their environment.	Begin to recognise different ways they may answer scientific questions. Experience different types of enquiry including practical activities. Use practical resources provided by the teacher and can suggest some resources of their own. Can carry out simple tests to classify, compare or pattern seek.	Carry out simple comparative tests using their own ideas. Experience different types of enquiry including practical activities. Within the planning frame can suggest resources they may need for the test. Can carry out simple tests linked to the types of enquiry: observation, testing, pattern seeking, identifying and classifying and research.	Perform a range of scientific investigations including different types of scientific enquiry. Set up practical enquiries: comparative, and fair tests. (post it note approach scaffolded by the teacher). Children investigate and answer own questions linked to shared post it note planning frame. Understand there are different variables to be controlled. (Can identify some variables e.g. what was changed and what was kept the same). Follow basic instructions scaffolded by the	Can identify the type of enquiry needed to answer a question. Follow a plan to carry out observations and tests. Can select from a range of resources to gather evidence and answer questions, to classify, compare and perform fair tests. Use post it note planning approach with more independence in identifying variables and what needs measuring. Children choose their method to carry out the investigation.	Recognise when and how to set up comparative and fair tests and explain which variables need to be controlled and changed. Can identify independent and dependent variables to identify causal relationships. Understand what type of scientific enquiry is needed to answer and prove/disprove scientific questions or phenomena.	Children choose the type of enquiry needed to carry out their investigation. Children can pose and answer their own questions, controlling variables where necessary independently. Decide whether they need to increase the sample size for validity. Children understand how to gather data to prove a prediction. Can identify a range of factors which may affect their investigation.

					teacher to conduct investigation. Use a range of equipment using thermometers and data loggers (with support).			
Observation and Measurement 		**Observation** Explore the natural world making observations (e.g seasons) Explore different equipment and finding out what its uses are. Know similarities and differences between the natural world around them. Observe and describe what they see using everyday language. **Measurement** Take measurements initially by comparisons then begin to use non-standard units.	**Observation** Uses appropriate senses aided by equipment such as magnifying glasses and digital microscopes to make observations. With help and prompting, observe changes over time and can describe the changes. Can identify and group, compare and contrast using observations, video and photographs. **Measurement** Use discrete e.g., counting and continuous data e.g. liquid to manageable	**Observation** Observe closely, using simple equipment. Can identify a variety of plants and animals using observations. Observe how different plants grow and record findings including similar plants at different stages of growth and notice similarities and differences. Use their observations and ideas to suggest answers to questions. Observe through video, first-hand observations and measurement how different	**Observation** Make systematic and careful observations. Look for naturally occurring patterns and relationships. Collect data from their own observations and measurements. Closely observe stages of plant life cycle over a period of time, noting patterns. Observe how water is transported in plants. Observe patterns in the way magnets behave in relation to each other. Can make observations and	**Observation** Make systematic and careful observations to identify plants and animals in their habitats and how the habitat changes throughout the year. Use observations to ask questions and group objects using classification keys. Observe closely and describe processes such as changes of state. Observe and record evaporation over a period of time.	**Observation** Observe and compare the life cycles of plants and animals in their local environment with other plants and animals around the world. Observe changes over a period of time. (e.g. animals). Make their own decisions about what to observe. **Measurement** Take repeat measurements where appropriate. Can choose the middle value or find the mean average.	**Observation** Children answer their own and others' questions on observations they have made. Their answers are based on evidence. Observe and raise questions about animals and how they are adapted to their environment. Observe properties of materials to group and classify based on their characteristics and properties. **Measurement**

		Make links and notice patterns in their experiences.	common standard units. Can use simple measurements and equipment such as hand lenses and egg timers to gather data. Can use non-standard measures to compare.	animals including humans grow and offer explanations. Compare objects based on observable features. **<u>Measurement</u>** Use standard units to estimate and measure length, height, temperature, and capacity. Can use rulers, scales, thermometers and measuring vessels with some degree of accuracy. Make decisions about what measurements to use and how long to make them for.	decide how to record them to answer a question. **<u>Measurement</u>** Take accurate measurements using standard units, can measure and compare. (e.g., amount of liquid and height of a plant to the nearest 1⁄2 cm). Use a range of equipment for measuring time, length, capacity and temperature. Begin to use a range of scales. Can read digital measurements from data loggers appropriately.	Identify differences, similarities or changes related to simple scientific ideas or processes. **<u>Measurement</u>** Uses a range of scales. Takes and records accurate measurements using standard units. Can record measurements to 2dp. Use thermometers to explore the effects of temperature of substances. Use data loggers to record sound in decibels and notice patterns. Use volt metres to measure voltage in a circuit to observe patterns and	Select measuring equipment to give most precise results e.g., ruler, tape measure, trundle wheels, force metres with suitable scales. Can explain advantages and disadvantages of different measuring equipment. Children make quantitative measurements about conductivity and insulation.	Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings where appropriate. When collecting measurements, the decide whether they need to increase sample size for validity and reliability. Can record measurements to 3dp. Can use protractors and rulers and force metres to measure accurately choosing correct units.

						answer questions. Begin to gather repeat readings to increase accuracy.		
Recording Data 		Draw pictures of objects in their own environment. Can take photos of things of interest to them. Can count results. Start to mark make to record results. Can order items. Can sort in more than 2 groups using familiar categories. Can create a class chart using pictures and objects.	Begin to show accuracy in drawings and simple labels. Use key scientific vocabulary provided by the teacher. Can complete a simple (prepared) table of results. Can add marks to a chart to collect data. Can use sorting rings to classify in more than 2 groups answering yes or no questions. Can sort using a simple 2 criteria Venn diagram. Can complete a prepared block graph/pictogram.	The children record their observations e.g. using photographs, videos, drawings, labelled diagrams or in writing. Record findings using scientific language. Gather and record data to help in answering questions. Count results using a tally chart. Use prepared tables to record results. Can identify and classify. Use simple keys based and yes or no questions. Can sort into 2 groups explaining their reasons clearly. Can record using prepared vertical bar charts.	Record findings using scientific language, drawings and labelled diagrams. Can complete a table (with given template) where they add headings and results. Can use simple classification keys and Venn diagrams with 2 sorting criteria and 1 intersecting. Begin to use Carroll diagrams. Can give reasons for their sorting criteria. Can produce vertical and horizontal bar charts adding own labels and bars.	Record findings using systematic and careful observational drawings and labelled diagrams. Children supported to present the same data in different ways- choice over recording. Can create own tables with their own headings. Can convert between units of measure. Can record using classification keys. Can use Venn and Carroll diagrams for classification, choosing their own criteria.	Children decide how to record data from a choice of familiar approaches. Present results in a variety of ways to help in answering questions. Can produce their own results table indicating cause and effect. Records results systematically. Use and develop classification keys and other information records to identify, classify and describe. Can classify in a number of ways. Use line or scatter graphs to calculate range in a set of	Children present the same data in different ways to help answer the question. Record data and results with increasing complexity e.g accuracy of measurements, multiple data sets and different scales. Use scientific diagrams and labels. They can calculate the mean and range of a set of data. Use multiple data sets. Can use and produce classification keys independently by posing questions.

				Can use results from tally charts.		Can use discrete and continuous data, presenting data in a line/scatter graph. Can construct a pictogram/bar chart independently.	data (different scales used). Can produce bar graphs with various increments.	Can independently collect data and produce scatter and line graphs using various scales and multiple data. Can create bar charts and pie charts to present data.
Interpreting Results		Offer explanations for why things happen- making use of some recently introduced scientific vocabulary. Develop their own narrative and explain by connecting ideas or events. Develop vocabulary which meets the breadth of their experiences.	Can use evidence from simple tests when answering questions. With help, begin to notice patterns and relationships. Talk about what they have found out and how they found it out. Can make comparisons and recognise biggest/smallest, most effective/least effective from data.	Communicate findings to an audience using relevant scientific language and illustrations. Can identify causal relationships and patterns in results. Can identify which results do not fit the overall pattern and explain findings. Refers to the table of results when describing what has happened. Draws a basic conclusion (with support from the teacher) using own scientific knowledge, observations and comparisons.	Begin to look for naturally occurring patterns and relationships from data. Draws conclusions based on observations. Can compare something using results and the conclusion is consistent with the data. Able to adjust opinion and predictions based on results. Can give reasons for results including any anomalies. Uses findings and results to answer questions raised.	Draws simple conclusions from results to answer questions and support their ideas. Look for casual relationships in data and identify evidence that refutes/supports ideas. Report on findings to an audience orally and in writing using appropriate scientific vocabulary for a range of audiences. Children use evidence to suggest values for different items tested	Identify patterns and casual relationships that may be found in the natural environment. Children interpret data to generate simple comparative statements based on evidence. Use results to draw conclusions and can identify external factors that cannot be controlled e.g. temperature inside and outside. Use scientific language and illustrations to discuss, communicate	Look for patterns and relationships using a suitable sample. Use oral and written forms such as displays to report conclusions, casual relationships and give an explanation of the degree of trust in their results. Children can pose further questions which can be answered by extending the enquiry. Makes suggestions for ideas that can be explored

				Uses results of investigations to answer enquiry questions.	Use simple scientific language to discuss ideas and communicate their findings in ways appropriate for different audiences orally and written. Apply their knowledge of the topic when evaluating. Explain any amendments and how this impacted the investigation/ test.	using the same method. Draw conclusions based on straightforward evidence and current subject knowledge to support their findings. Suggest improvements and raise further questions.	and justify scientific ideas. Use results to make predictions and identify whether further observations, comparative tests, fair tests, pattern seeking, or research might be needed. Can use comparative statements to explain results and how things work. Evaluates how effectively variables were controlled.	using pattern seeking. Can spot anomalies and identify results that do not fit the overall pattern. Use data to refute or support ideas or arguments. Focuses on scientific reasons for overall pattern rather than a comparison. Uses labelled diagrams to support their explanation. Use ideas from secondary sources to support their ideas, choosing appropriate websites.
Evaluating		Develop their own narrative and explanations by connecting ideas or events. Talk about what I have found and say what worked well.	With scaffolding and prompting can suggest improvements to their enquiries. Talk about some changes that could be made.	With support can suggest improvements to their enquiries. Suggest some things that could be changed and evaluate why things went wrong.	Suggest improvements and raises further questions. Uses evidence and subject knowledge to refute statements.	Evaluate and communicate their methods and findings. Suggest ways to improve what they have already done.	Evaluate and decide when further observations, comparative and fair tests might be needed. Evaluate different aspects of their enquiries	Children can describe and evaluate their own and other people's scientific ideas using evidence from a range of sources.

		Describe how things work in simple terms and make basic alterations and suggest things that did not work (e.g. this button does not work so press this one). Questions why things happen. Children will come up with alternative ways of doing this through exploration. Children can say or indicate by smiley faces/scale if they have achieved the learning objective.	Use simple success ladders to evaluate their tests or understanding against the learning objective.	Use success ladders with multiple criteria to evaluate the test or their understanding against the learning objective.	Make suggest improvements from enquiries. Make basic statements about what worked well and what they would change. Use success ladders confidently to evaluate their tests or understanding against multiple criteria and suggest simple next steps.	Begin to evaluate different aspects of their enquiries such as equipment. Begin to understand how the enquiry improves outcomes from their questions. Use different charts to evaluate such as ranking scales, star diagrams and success ladders. Suggest points for development based on the weakest aspects.	such as equipment and accuracy of measurements. State how the enquiry improves outcomes from their questions. Children can relate their results to the question and state if their test has enabled them to answer it. Use a range of charts to evaluate such as ranking scales, star diagrams including those with negative numbers. Suggest next steps based on the weakest aspects and state how this will help them or the test progress or give different results.	Evaluate their choice of method, the control of variables, the precision and accuracy of measurements and the credibility of secondary sources. Children use scientific language and evaluate how their enquiry has answered the question.