Science Progression of Skills

	PROGRAMME OF STUDY	SKILLS TAUGHT	
YEAR 1	During years 1 and 2, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content: ✓ asking simple questions and recognising that they can be answered in different ways ✓ observing closely, using simple equipment ✓ performing simple tests ✓ identifying and classifying ✓ using their observations and ideas to suggest answers to questions ✓ gathering and recording data to help in answering questions <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>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>Everyday 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. <u>Seasonal Changes:</u> ✓ observe changes across the four seasons ✓ observe and describe weather associated with the seasons and how day length varies.	**Working Scientifically**	▪ To use the following practical scientific methods, processes and skills (adult support may be needed). ▪ eg: Observe, name, sort, begin to make simple predictions, talk about, describe, explain.
		Questioning and enquiring. Planning.	▪ Ask simple questions about the world around us. ▪ Begin to recognise that they can be answered in different ways (diifferent types of enquiry including - observing changes over time, noticing patterns, grouping and classifying, carrying out simple comparative tests, finding things out from secondary sources).
		Observing and Measuring. Pattern seeking.	▪ Begin to observe closely, using simple equipment. ▪ Use simple observations and ideas to suggest answers to questions. ▪ To observe simple changes over time and, with guidance, begin to notice patterns and relationships. ▪ To say what I am looking for and what I am measuring. ▪ To know how to use simple equipment safely. ▪ Use simple measurements and equipment with support (eg hand lenses and egg timers) ▪ Begin to progress from non-standard units, reading cm, m, cl, l, °C.
		Investigating	▪ Perform simple tests with support. ▪ To begin to discuss my ideas about how to find things out. ▪ To begin to say what happened in my investigation.
		Recording and reporting findings.	▪ Gather and record data with some adult support, to help in answering questions. ▪ Begin to record simple data. ▪ Begin to record and communicate findings in a range of ways. ▪ Show results in a simple table that my teacher has provided.
		Identifying, grouping and classifying.	▪ Identify and classify with some support. ▪ To begin to observe and identify, compare and describe. ▪ To begin to use simple features to compare objects, materials and living things and, with help, decide how to sort and group them.
		Research	▪ Begin to use simple secondary sources to find answers. ▪ To begin to find information to help me from books and computers with help.
		Conclusions	▪ Begin to talk about what they have found out and how they found it out ▪ Begin to say what happened in an investigation. ▪ To begin to say whether surprised at the results or not. ▪ To begin to say what I would change about my investigation.
		Vocabulary	▪ Use some simple scientific language ▪ Begin to use some science words. ▪ Use comparative language with support.
		Understanding	▪ Begin to talk about how science helps us in our daily lives eg. torches and lights help us see hen it is dark. ▪ Begin to understand science can sometimes be dangerous.
YEAR 2	<u>Living Things & 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	**Working Scientifically**	▪ To use the following practical scientific methods, processes and skills (with increasing confidence). ▪ Eg, explore, match up, organise, identify, become more confident making simple predictions, describe, explain, research, investigate.
		Questioning and enquiring. Planning.	▪ Ask questions about the world around us. ▪ Recognise that they can be answered in different ways (different types of enquiry including - ▪ observing changes over time, noticing patterns, grouping and classifying, carrying out simple ▪ comparative tests, finding things out from secondary sources).

	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>Plants:</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>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>Uses of Everyday Materials:</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.	**Observing and Measuring. Pattern seeking.**	▪ Observe closely, using simple equipment. ▪ Use observations and ideas to suggest answers to questions. ▪ To observe changes over time and, with guidance begin, to notice patterns and relationships. ▪ To say what I am looking for and what I am measuring. ▪ To know how to use simple equipment safely. ▪ Use simple measurements and equipment with increasing independence (eg hand lenses and egg timers) ▪ Begin to progress from non-standard units, reading mm, cm, m, ml, l, °C
		Investigating	▪ Perform simple tests. ▪ To discuss my ideas about how to find things out. ▪ To say what happened in my investigation.
		Recording and reporting findings.	▪ Gather and record data to help in answering questions. ▪ Record simple data. ▪ Record and communicate findings in a range of ways. ▪ Show results in a table that my teacher has provided.
		Identifying, grouping and classifying.	▪ Identify and classify. ▪ Observe and identify, compare and describe. ▪ Use simple features to compare objects, materials and living things and, with help, decide how to sort and group them.
		Research	▪ Use simple secondary ▪ sources to find answers. ▪ Can find information to help me from books and computers with help.
		Conclusions	▪ Talk about what they have found out and how they found it out. ▪ To say what happened in the investigation. ▪ To say whether I was surprised at the results or not. ▪ To say what I would change about my investigation.
		Vocabulary	▪ Use simple scientific language and some science words. ▪ Use comparative language – bigger, faster etc
		Understanding	▪ Talk about how science helps us in our daily lives eg. torches and lights help us see hen it is ▪ dark. ▪ Begin to understand science can sometimes be dangerous.
YEAR 3	During years 3 and 4, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content: ✓ asking relevant questions and using different types of scientific enquiries to answer them ✓ setting up simple practical enquiries, comparative and fair tests ✓ making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers ✓ gathering, recording, classifying and presenting data in a variety of ways to help in answering questions ✓ recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables ✓ reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions ✓ using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions ✓ identifying differences, similarities or changes related to simple scientific ideas and processes ✓ using straightforward scientific evidence to answer questions or to support their findings.	**Working Scientifically**	▪ To use the following practical scientific methods, processes and skills. ▪ Eg, explore, identify, investigate, gather, record and classify information, begin to use different types of scientific enquiry, begin to ask relevant questions, report on findings, begin to use reports to draw conclusions.
		Questioning and enquiring. Planning.	▪ Ask some relevant questions and use different types of scientific enquiries to answer them. ▪ Begin to explore everyday phenomena and the relationships between living things and familiar environments. ▪ Begin to develop their ideas about functions, relationships and interactions. ▪ Begin to raise their own questions about the world around them. ▪ Begin to make some decisions about which types of enquiry will be the best way of answering questions including observing changes over time, noticing patterns, grouping and classifying, carrying out simple comparative and fair tests, finding things out using secondary sources.
		Observing and Measuring. Pattern seeking.	▪ Begin to make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. ▪ Begin to look for naturally occurring patterns and relationships and decide what data to collect to identify them. ▪ Help to make decisions about what observations to make, how long to make them for and the type of simple equipment that might be used. ▪ Learn to use some new equipment appropriately (eg data loggers). ▪ Begin to see a pattern in my results. ▪ Begin to choose from a selection of equipment. ▪ Begin to observe and measure accurately using standard units including time in minutes and seconds.
		Investigating	▪ Set up some simple practical enquiries, comparative and fair tests. ▪ Begin to recognise when a simple fair test is necessary and help to decide how to set it up. ▪ Begin to think of more than one variable factor.

	Plants: ✓ identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers ✓ explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant ✓ investigate the way in which water is transported within plants ✓ explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. Animals, including humans: ✓ identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat ✓ identify that humans and some other animals have skeletons and muscles for support, protection and movement. Rocks: ✓ compare and group together different kinds of rocks on the basis of their appearance and simple physical properties ✓ describe in simple terms how fossils are formed when things that have lived are trapped within rock ✓ recognise that soils are made from rocks and organic matter. Light: ✓ recognise that they need light in order to see things and that dark is the absence of light ✓ notice that light is reflected from surfaces ✓ recognise that light from the sun can be dangerous and that there are ways to protect their eyes ✓ recognise that shadows are formed when the light from a light source is blocked by an opaque object ✓ find patterns in the way that the size of shadows change. Forces & Magnets: ✓ compare how things move on different surfaces ✓ notice that some forces need contact between two objects, but magnetic forces can act at a distance ✓ observe how magnets attract or repel each other and attract some materials and not others ✓ compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials ✓ describe magnets as having two poles ✓ predict whether two magnets will attract or repel each other, depending on which poles are facing.	**Recording and reporting findings.**	▪ Gather, record, and begin to classify and present data in a variety of ways to help in answering questions. ▪ Begin to record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables. ▪ Begin to report on findings from enquiries, including oral and written explanations, displays or ▪ presentations of results and conclusions. ▪ Begin to use notes, simple tables and standard units and help to decide how to record and analyse their data. ▪ Begin to record results in tables and bar charts.
		Identifying, grouping and classifying.	▪ Begin to identify differences, similarities or changes related to simple scientific ideas and processes. ▪ Begin to talk about criteria for grouping, sorting and classifying and use simple keys. ▪ Begin to compare and group according to behaviour or properties, based on testing.
		Research	▪ Begin to recognise when and how secondary sources might help to answer questions that cannot be answered through practical investigations.
		Conclusions	▪ Begin to use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions. ▪ Begin to use straightforward scientific evidence to answer questions or to support their findings. ▪ With help, begin to look for changes, patterns, similarities and differences in their data in order to draw simple conclusions and answer questions. ▪ With support, begin to identify new questions arising from the data, make new predictions and ▪ find ways of improving what they have already done. ▪ Begin a pattern in my results. ▪ Begin to say what I found out, linking cause and effect. ▪ Begin to say how I could make it better. Begin to raise questions from what I have found out.
		Vocabulary	▪ Begin to use some scientific language to talk and, later, write about what they have found out. ▪ Begin to use relevant scientific language. ▪ Begin to use comparative and superlative language.
		Understanding	▪ Begin to know which things in science have made our lives better. ▪ Begin to understand risk in science.
YEAR 4	Living Things & Their Habitats: ✓ 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. Animals including humans: ✓ 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	**Working Scientifically**	▪ To use the following practical scientific methods, processes and skills. ▪ Eg, ask relevant questions, use a variety of different scientific enquiry, set up simple enquiries, make systematic observations, make accurate measurements, gather, record, classify and present data, report on findings from enquiries, use results to draw simple conclusions, make further predictions for new values, use straightforward scientific evidence to support their ideas or findings.
		Questioning and enquiring. Planning.	▪ Ask relevant questions and use different types of scientific enquiries to answer them. ▪ Explore everyday phenomena and the relationships between living things and familiar environments. ▪ Begin to develop their ideas about functions, relationships and interactions. ▪ Raise their own questions about the world around them. ▪ Make some decisions about which types of enquiry will be the best way of answering questions including observing changes over time, noticing patterns, grouping and classifying, carrying out simple comparative and fair tests, finding things out using secondary sources.
		Observing and Measuring. Pattern	▪ Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. ▪ Begin to look for naturally occurring patterns and relationships and decide what data to collect to identify them.

	producers, predators and prey States of Matter: ✓ 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. Sound: ✓ 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. Electricity: ✓ 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.	**seeking.**	▪ Help to make decisions about what observations to make, how long to make them for and the type of simple equipment that might be used. ▪ Learn to use new equipment appropriately (eg data loggers).
		Investigating	▪ Set up simple practical enquiries, comparative and fair tests. ▪ Recognise when a simple fair test is necessary and help to decide how to set it up. ▪ Can think of more than one variable factor.
		Recording and reporting findings.	▪ Gather, record, classify and present data in a variety of ways to help in answering questions. ▪ Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables. ▪ Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. ▪ Use notes, simple tables and standard units and help to decide how to record and analyse their data. ▪ Record results in tables and bar charts.
		Identifying, grouping and classifying.	▪ Identify differences, similarities or changes related to simple scientific ideas and processes. ▪ Talk about criteria for grouping, sorting and classifying and use simple keys. ▪ Compare and group according to behaviour or properties, based on testing.
		Research	▪ Begin to recognise when and how secondary sources might help to answer questions that cannot be answered through practical investigations.
		Conclusions	▪ Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions. ▪ Use straightforward scientific evidence to answer questions or to support their findings. ▪ With help, look for changes, patterns, similarities and differences in their data in order to draw simple conclusions and answer questions. ▪ With support, identify new questions arising from the data, make new predictions and find ways of ▪ improving what they have already done.
		Vocabulary	▪ Use some scientific language to talk and, later, write about what they have found out. ▪ Use relevant scientific language. ▪ Use comparative and superlative language.
		Understanding	▪ Knows which things in science have made our lives better. ▪ Understand there is some risk in science.
YEAR 5	During years 5 and 6, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content: ✓ planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary ✓ taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate ✓ recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs ✓ using test results to make predictions to set up further comparative and fair tests ✓ reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations ✓ identifying scientific evidence that has been used to support or refute ideas or arguments. Living Things & Their Habitats:	**Working Scientifically**	▪ To use the following practical scientific methods, processes and skills. ▪ Eg, plan a variety of scientific enquiry, control variables where necessary eg in a fair test; take measurements with increasing accuracy using scientific equipment; record data and results in tables, labels, diagrams, classification keys, scatter, bar and line graphs; present conclusions and explanations in a variety of ways; compare and describe findings in investigations.
		Questioning and enquiring. Planning.	▪ Begin to plan different types of scientific enquiries to answer questions, including recognizing and controlling variables where necessary. ▪ Begin to explore and talk about ideas, ask their own questions about scientific phenomena, analyse ▪ functions, relationships and interactions more systematically. ▪ Begin to recognise some more abstract ideas and begin to recognise how these ideas help them to understand how the world operates. ▪ Begin to recognise scientific ideas change and develop over time. ▪ Begin to select the most appropriate ways to answer science questions using different types of scientific enquiry (including observing changes over different periods of time, noticing patterns, ▪ grouping and classifying, carrying out comparative and fair tests and finding things out using a wide range of secondary sources of information.)
		Observing and Measuring. Pattern seeking.	▪ Begin to take measurements, using a range of scientific equipment, with increasing accuracy and ▪ precision, taking repeat readings where appropriate. ▪ Begin to identify patterns that might be found in the natural environment. ▪ Begin to make their own decisions about what observations to make, what measurements to use and how long to make them for and whether to repeat them. ▪ Choose the most appropriate equipment and explain how to use it accurately. ▪ Begin to interpret data and find patterns. ▪ Select equipment on my own. ▪ To make a set of observations and say what the interval and range are. ▪ Begin to take accurate and precise measurements – N, g, kg, mm, cm, mins, seconds, cm^2V, km/h, m per sec, m/ sec ▪ Graphs – pie, line
		Investigating	▪ Begin to use test results to make predictions to set up further comparative and fair tests. ▪ Begin to recognise when and how to set up comparative and fair tests and explain which variables need to be controlled and why. ▪ Begin to suggest improvements to my method and give reasons. ▪ Begin to decide when it is appropriate to do a fair test.

	✓ 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>Animals, including humans:</u> ✓ describe the changes as humans develop to old age. <u>Properties & 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 & 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.	**Recording and reporting findings.**	▪ Begin to record data and results of increasing complexity using scientific diagrams and labels, ▪ classification keys, tables and bar and line graphs. ▪ Begin to report and present findings from enquiries. ▪ Begin to decide how to record data from a choice of familiar approaches. ▪ Begin to choose how best to present data.
		Identifying, grouping and classifying.	▪ Begin to use and develop keys and other information records to identify, classify and describe living things and materials.
		Research	▪ Begin to recognise which secondary sources will be most useful to research their ideas.
		Conclusions	▪ Begin to report and present findings from enquiries, including conclusions, causal relationships ▪ and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations. ▪ Start to identify scientific evidence that has been used to support or refute ideas or arguments. ▪ Begin to draw conclusions based on data and observations, use evidence to justify ideas, use ▪ scientific knowledge and understanding to explain findings. ▪ Begin to use test results to make predictions to set up further comparatives and fair tests. ▪ Begin to look for different causal relationships in their data and identify evidence that refutes or ▪ supports ideas. ▪ Use their results to identify when further tests and observations are needed. ▪ Begin to separate opinion from fact. ▪ Begin to draw conclusions and identify scientific evidence. ▪ Can use simple models. ▪ Know which evidence proves a scientific point. ▪ Begin to use test results to make predictions to set up further comparative and fair tests.
		Vocabulary	▪ Start to read, spell and pronounce scientific vocabulary correctly. ▪ Startto use relevant scientific language and illustrations to discuss, communicate and justify scientific ideas. ▪ Begin to confidently use a range of scientific vocabulary. ▪ Begin to use conventions such as trend, rogue result, support prediction and -er word generalisation. ▪ Begin to use scientific ideas when describing simple processes.
		Understanding	▪ Begin to talk about how scientific ideas have changed over time. ▪ Start to explain the positive and negative effects of scientific development. ▪ Begin to see how science is useful in everyday life. ▪ Start to say which parts of our lives rely on science.
YEAR 6	<u>Living Things & Their Habitats:</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>Animals, including humans:</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 & Inheritance:</u> ✓ recognise that living things have changed over time and that fossils	**Working Scientifically**	▪ To use the following practical scientific methods, processes and skills. ▪ Eg, plan a variety of scientific enquiry; control variables where necessary eg in a fair test; take measurements with increasing accuracy using scientific equipment; record data and results with increasing complexity in tables, labels, diagrams, classification keys, scatter, bar and line graphs; identify scientific evidence that has been used to support or refute an idea; identify, describe and give reasons for or against within a topic; present conclusions and explanations in a variety of ways.
		Questioning and enquiring. Planning.	▪ Plan different types of scientific enquiries to answer questions, including recognising and controlling ▪ variables where necessary. ▪ Explore and talk about ideas, ask their own questions about scientific phenomena, analyse functions, ▪ relationships and interactions more systematically. ▪ Begin to recognise more abstract ideas and begin to recognise how these ideas help them to understand how the world operates. ▪ Begin to recognise scientific ideas change and develop over time. ▪ Select the most appropriate ways to answer science questions using different types of scientific enquiry (including observing changes over different periods of time, noticing patterns, grouping and classifying, carrying out comparative and fair tests and finding things out using a wide range of secondary sources of information.)
		Observing and Measuring. Pattern seeking.	▪ Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings where appropriate. ▪ Identify patterns that might be found in the natural environment. ▪ Make their own decisions about what observations to make, what measurements to use and how long to make them for and whether to repeat them. ▪ Choose the most appropriate equipment and explain how to use it accurately. ▪ To interpret data and find patterns.

	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>Light:</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.		▪ Select equipment on my own. ▪ To make a set of observations and say what the interval and range are. ▪ Accurate and precise measurements – N, g, kg, mm, cm, mins, seconds, cm²V, km/h, m per sec, m/ sec ▪ Graphs – pie, line, bar (Year 6)
		Investigating	▪ Use test results to make predictions to set up further comparative and fair tests. ▪ Recognise when and how to set up comparative and fair tests and explain which variables need to be controlled and why. Suggest improvements to my method and give reasons. ▪ Decide when it is appropriate to do a fair test.
		Recording and reporting findings.	▪ Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables and bar and line graphs. ▪ Report and present findings from enquiries. ▪ Decide how to record data from a choice of familiar approaches. ▪ Can choose how best to present data.
		Identifying, grouping and classifying.	▪ Use and develop keys and other information records to identify, classify and describe living things and materials.
		Research	▪ Recognise which secondary sources will be most useful to research ideas.
		Conclusions	▪ 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. ▪ Identify scientific evidence that has been used to support or refute ideas or arguments. ▪ Draw conclusions based on data and observations, use evidence to justify ideas, use scientific knowledge and understanding to explain findings. ▪ Use test results to make predictions to set up further comparatives and fair tests. ▪ Look for different causal relationships in their data and identify evidence that refutes or supports ideas. ▪ Use their results to identify when further tests and observations are needed. ▪ Separate opinion from fact. ▪ Can draw conclusions and identify scientific evidence. ▪ Can use simple models. ▪ Know which evidence proves a scientific point. ▪ Use test results to make predictions to set up further comparative and fair tests.
		Vocabulary	▪ Read, spell and pronounce scientific vocabulary correctly. ▪ Use relevant scientific language. ▪ Use illustrations to discuss, communicate and justify scientific ideas. ▪ Confidently use a range of scientific vocabulary. ▪ Use conventions such as trend, rogue result, support prediction and -er word generalisation. ▪ Use scientific ideas when describing simple processes. ▪ Can use the correct science vocabulary.
		Understanding	▪ Talk about how scientific ideas have changed over time. ▪ Explain the positive and negative effects of scientific development. ▪ See how science is useful in everyday life. ▪ Say which parts of our lives rely on science.