	Year 3	Year 4	Year 5	Year 6
Scientific enquiry	raise their own relevant questions about the world around them and use different types of scientific enquiry to answer them should be given a range of scientific experiences including different types of science enquiries to answer questions start to make their own decisions about the most appropriate type of scientific enquiry they might use to answer questions set up simple practical enquiries, comparative and fair tests talk about criteria for grouping, sorting and classifying; and use simple keys	raise their own relevant questions about the world around them and use different types of scientific enquiry to answer them should be given a range of scientific experiences including different types of science enquiries to answer questions start to make their own decisions about the most appropriate type of scientific enquiry they might use to answer questions set up simple practical enquiries, comparative and fair tests talk about criteria for grouping, sorting and classifying; and use simple keys	use their science experiences to explore ideas and raise different kinds of questions talk about how scientific ideas have developed over time select and plan the most appropriate type of scientific enquiry to use to answer scientific questions recognise when and how to set up comparative and fair tests and explain which variables need to be controlled and why use and develop keys and other information records to identify, classify and describe living things and materials, and identify patterns that might be found in the natural environment	use their science experiences to explore ideas and raise different kinds of questions talk about how scientific ideas have developed over time select and plan the most appropriate type of scientific enquiry to use to answer scientific questions recognise when and how to set up comparative and fair tests and explain which variables need to be controlled and why use and develop keys and other information records to identify, classify and describe living things and materials, and identify patterns that might be found in the natural environment

	recognise when and how secondary sources might help them to answer questions that cannot be answered through practical investigations make systematic and careful observations 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 begin to look for patterns and decide what data to collect to identify them take accurate measurements using standard units learn how to use a range of (new) equipment, such as data loggers / thermometers appropriately	recognise when and how secondary sources might help them to answer questions that cannot be answered through practical investigations make systematic and careful observations 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 begin to look for patterns and decide what data to collect to identify them take accurate measurements using standard units learn how to use a range of (new) equipment, such as data loggers / thermometers appropriately	recognise which secondary sources will be most useful to research their ideas and begin to separate opinion from fact make their own decisions about what observations to make, what measurements to use and how long to make them for look for different causal relationships in their data and identify evidence that refutes or supports their ideas choose the most appropriate equipment to make measurements with increasing precision and explain how to use it accurately decide how to record data and results of increasing complexity	recognise which secondary sources will be most useful to research their ideas and begin to separate opinion from fact make their own decisions about what observations to make, what measurements to use and how long to make them for look for different causal relationships in their data and identify evidence that refutes or supports their ideas choose the most appropriate equipment to make measurements with increasing precision and explain how to use it accurately decide how to record data and results of increasing complexity

	collect and record data from their own observations and measurements in a variety of ways: notes, bar charts and tables, standard units, drawings, labelled diagrams, keys and help to make decisions about how to analyse this data with help, pupils should look for changes, patterns, similarities and differences in their data in order to draw simple conclusions and answer questions. use relevant simple scientific language to discuss their ideas and communicate their findings in ways that are appropriate for different audiences, including oral and written explanations, displays or presentations of results and conclusions	collect and record data from their own observations and measurements in a variety of ways: notes, bar charts and tables, standard units, drawings, labelled diagrams, keys and help to make decisions about how to analyse this data with help, pupils should look for changes, patterns, similarities and differences in their data in order to draw simple conclusions and answer questions. use relevant simple scientific language to discuss their ideas and communicate their findings in ways that are appropriate for different audiences, including oral and written explanations, displays or presentations of results and conclusions	from a choice of familiar approaches: scientific diagrams and labels, classification keys, tables, and bar and line graphs identify scientific evidence that has been used to support or refute ideas or arguments use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas, use oral and written forms such as displays and other presentations to report conclusions, causal relationships and explanations of results use simple models to describe scientific ideas	from a choice of familiar approaches: scientific diagrams and labels, classification keys, tables, and bar and line graphs identify scientific evidence that has been used to support or refute ideas or arguments use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas, use oral and written forms such as displays and other presentations to report conclusions, causal relationships and explanations of results use simple models to describe scientific ideas

	with support, they should identify new questions arising from the data, making predictions for new values within or beyond the data they have collected and finding ways of improving what they have already done, and raise further questions. Use straight forward scientific evidence to answer questions or to support their findings.	with support, they should identify new questions arising from the data, making predictions for new values within or beyond the data they have collected and finding ways of improving what they have already done and raise further questions. Use straight forward scientific evidence to answer questions or to support their findings.	describe and evaluate their own and other peoples scientific ideas (using topics related to the National Curriculum) using evidence from a range of sources. use their results to make predictions and identify when further observations, comparative and fair tests might be needed	describe and evaluate their own and other peoples scientific ideas (using topics related to the National Curriculum) using evidence from a range of sources. use their results to make predictions and identify when further observations, comparative and fair tests might be needed
Physics				
Sound		<u>Sound</u> To understand that sound is made by vibrations To know how the properties of an object affects pitch To understand how vibrations change the volume of a sound 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		
Light	<u>Light</u> To understand how light is used for sight To understand that light is reflected off surfaces To understand how light can be dangerous To know how shadows are formed and how they change			<u>Light</u> To understand and 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 To recognise that light travels in straight lines To use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them

				(Extension into KS3 ideas) To begin to understand colours, white light and prisms (qualitative only) and refraction of light because of the varying speed of light waves as they as pass through a medium
Forces and magnets	<u>Forces and magnets</u> To compare how objects move on different surfaces To know how forces act upon objects To understand how magnets work To be able to classify magnetic materials		<u>Forces</u> To explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object To use and understand the terms: force, weight and mass. To identify the effects of air resistance, water resistance and friction, that act between moving surfaces To recognise that some mechanisms, including levers, pulleys and gears, allow a	

			smaller force to have a greater effect.	
Electricity		<u>Electricity</u> To discuss the use of electricity in the world To be able to construct a series circuit To investigate the use of switches in a circuit To understand the difference in properties in electrical conductors and insulators		<u>Electricity</u> To recognise the link between the number and the voltage of cells used in a circuit and the brightness of a lamp or the volume of a buzzer. To compare and give reasons for variations in how components function within a circuit including the brightness of bulbs, the loudness of buzzers and the on/off position of switches To use recognised symbols when representing a simple circuit in a diagram.
Earth and Space			<u>Earth and Space</u> To describe the movement of the Earth, and other planets, relative to the Sun in the solar system.	

			To describe the movement of the Moon relative to the Earth. To describe the Sun, Earth and Moon as approximately spherical bodies. To use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.	
		Chemistry		
States of matter		<u>States of matter</u> To know the terminology associated with states of matter To be able to compare and group materials according to their state of matter		

		To know how heating and cooling changes state of matter To begin to understand the water cycle To know the role of evaporation and condensation and understand the link to temperature To use scientific reasoning to make decisions To understand that matter has the same mass whatever form it is in		
Properties of materials and how they change			<u>Materials</u> To compare and group together everyday materials on the basis of their properties	

			To classify materials according to hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets To know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution To use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating To give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic	

			To demonstrate that dissolving, mixing and changes of state are reversible changes To explain that some changes result in the formation of new materials To recognise this kind of change is not usually reversible	
Rocks	<u>Rocks and soils</u> To compare and group different kinds of rocks To describe how fossils are formed To know how soils is made To identify and classify rocks according to whether they have grains or crystals, and whether they have fossils in them.			

Biology				
Animals including humans	Animals including humans To identify the nutritional needs of animals and humans To understand the nutritional needs of a human To understand the purpose of a skeleton and muscles To understand the difference between socket and hinge joints to enable movement. To understand the purpose of large muscle groups and main organs in the body To understand the difference between animal dietary requirements and a human	Animals including humans To know how the human digestive system works. To identify the role and function of teeth. To understand the process of a food chain To construct and interpret a variety of food chains, including produces, predators and prey To identify herbivores, carnivores and omnivores in the context of teeth, digestion and the food chain.	Animals including humans **Combine unit with Living things and Habitats** To describe the changes as humans develop to old age **(Covered in Life Bus)** To recognise the differences and similarities between animals and humans	Animals including humans To identify and name the main parts of the human circulatory system To describe the functions of the heart, blood vessels and blood To recognise the impact of diet, exercise, drugs and lifestyle on the way bodies function To explore the work of scientists and scientific research about the relationship between diet, exercise, drugs, lifestyle and health. To describe the ways in which animals (including humans) and plants gain nutrition and water

	To identify animal skeletons and how they relate to each species			
Plants	<u>Plants</u> To identify and describe the functions of different parts of flowering plants To explore the requirements of growth for different plants To investigate the way in which water is transported within plants			

	To explore the part that flowers play in the life cycle of flowering plants			
Living things and their habitats		<u>Living things and their habitats</u> To be able to classify living things To classify and identify living things in a local environment To identify and classify living things around the globe To understand how habitats and environments can change and the dangers this can pose To understand that environments can change and the benefits this can bring about.	<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. To understand types of reproduction, including sexual and asexual reproduction in plants, and sexual reproduction in animals To observe and compare the life cycles of plants and animals in their local environment with other plants and animals around the world	<u>Living things and their habitats</u> To find similarities and differences within living things To identify and describe the groups that pertain to living things To classify living things into groups
Evolution and inheritance				<u>Evolution and inheritance</u>

				To recognise that fossils provide information about living things from millions of years ago To recognise how living things have changed over time To identify how animals and plants adapt to suit their environment To explore how habitat change affects how animals evolve To recognise that living things produce offspring of the same kind but variations can occur