	Foundation Stage	Key Stage One	Lower Key Stage Two	Upper Key Stage Two
	In the EYFS Science is taught through the Understanding he World: The Natural World strand. It is introduced indirectly through activities that encourage your child to explore, problem solve, observe, predict, think, make decisions and talk about the world around them. During their early learning experiences at school the children will explore creatures, people, plants and objects in their natural environments. They will observe and manipulate objects and materials to identify differences and similarities. Children will learn about similarities and differences in relation to places, objects, materials and living things. They will talk about the features of their own immediate environment and how environments might vary from one another. They will make observations of animals and plants and explain why some things occur, and talk about changes.	The principal focus of science teaching in key stage 1 is to enable pupils to experience and observe phenomena, looking more closely at the natural and humanly-constructed world around them. They should be encouraged to be curious and ask questions about what they notice. They should be helped to develop their understanding of scientific ideas by using different types of scientific enquiry to answer their own questions, including observing changes over a period of time, noticing patterns, grouping and classifying things, carrying out simple comparative tests, and finding things out using secondary sources of information. They should begin to use simple scientific language to talk about what they have found out and communicate their ideas to a range of audiences in a variety of ways. Most of the learning about science should be done through the use of first-hand practical experiences, but there should also be some use of appropriate secondary sources, such as books, photographs and videos. 'Working scientifically' is described separately in the programme of study, but must **always** be taught through and clearly related to the teaching of substantive science content in the programme of study. Throughout the notes and guidance, examples show how scientific methods and skills might be linked to specific elements of the content. Pupils should read and spell scientific vocabulary at a level consistent with their increasing word reading and spelling knowledge at key stage 1.	The principal focus of science teaching in lower key stage 2 is to enable pupils to broaden their scientific view of the world around them. They should do this through exploring, talking about, testing and developing ideas about everyday phenomena and the relationships between living things and familiar environments, and by beginning to develop their ideas about functions, relationships and interactions. They should ask their own questions about what they observe and make some decisions about which types of scientific enquiry are likely to be the best ways of answering them, including observing changes over time, noticing patterns, grouping and classifying things, carrying out simple comparative and fair tests and finding things out using secondary sources of information. They should draw simple conclusions and use some scientific language, first, to talk about and, later, to write about what they have found out. 'Working scientifically' is described separately at the beginning of the programme of study, but must **always** be taught through and clearly related to substantive science content in the programme of study. Throughout the notes and guidance, examples show how scientific methods and skills might be linked to specific elements of the content. Pupils should read and spell scientific vocabulary correctly and with confidence, using their growing word reading and spelling knowledge.	The principal focus of science teaching in upper key stage 2 is to enable pupils to develop a deeper understanding of a wide range of scientific ideas. They should do this through exploring and talking about their ideas; asking their own questions about scientific phenomena; and analysing functions, relationships and interactions more systematically. At upper key stage 2, they should encounter more abstract ideas and begin to recognise how these ideas help them to understand and predict how the world operates. They should also begin to recognise that scientific ideas change and develop over time. They should 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 things, carrying out comparative and fair tests and finding things out using a wide range of secondary sources of information. Pupils should draw conclusions based on their data and observations, use evidence to justify their ideas, and use their scientific knowledge and understanding to explain their findings. 'Working and thinking scientifically' is described separately at the beginning of the programme of study, but must **always** be taught through and clearly related to substantive science content in the programme of study. Throughout the notes and guidance, examples show how scientific methods and skills might be linked to specific elements of the content. Pupils should read, spell and pronounce scientific vocabulary correctly.

		Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Autumn Term								
	Topic	What makes me special? Bringing nursery rhymes to life!	Toys - how have toys changed over time?	To Infinity and Beyond - how has space travel changed in living memory?	Let's Rock! - how did people live in the Stone, Bronze and Iron Ages?	Meet the Greeks - why should we thank the Ancient Greeks?	That's Settled - who were the Anglo-Saxons?	Vicious Vikings - why did the Vikings invade Britain and how successful were they?
	NC Strand	Understanding the world	Seasonal Changes/ Animals Including Humans	Use of Every Day Materials	Rocks	Animals Including Humans	Forces	Evolution and Inheritance
	Scientific Enquiry skills and Concepts Progression	In this unit, the children will: Children at the expected level of development will: - Explore the natural world around them, making observations and drawing pictures of animals and 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; - Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.	Pupils should be taught to: - observe changes across the four seasons -observe and describe weather associated with the seasons and how day length varies. -identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense Pupils might work scientifically by: -making tables and charts about the weather; and making displays of what happens in the world around them, including day length, as the seasons change.	Pupils should be taught to: - 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. Pupils might work scientifically by: -comparing the uses of everyday materials in and around the school with materials found in other places (at home, the journey to school, on visits, and in stories, rhymes and songs); observing closely, identifying and classifying the uses	Pupils should be taught to: - 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. Pupils might work scientifically by: -observing rocks, including those used in buildings and gravestones, and exploring how and why they might have changed over time; using a hand lens or microscope to help them to identify and classify rocks according to whether they have grains or crystals,	Pupils should be taught to: - identify that humans and some other animals have skeletons and muscles for support, protection and movement. - Construct and interpret a variety of food chains, identifying producers, predators and prey. Pupils might work scientifically by:	Pupils should be taught to: - 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. Pupils might work scientifically by: - exploring falling paper cones or cup-cake cases, and designing and making a variety of parachutes and carrying out fair tests to determine	Pupils should be taught to: - 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. Pupils might work scientifically by: -Observing and raising questions about local animals and how they are adapted to their environment; comparing how some living things are adapted to survive in extreme conditions, for example, cactuses, penguins and camels. - analysing the

				of different materials, and recording their observations.	and whether they have fossils in them. - researching and discussing the different kinds of living things whose fossils are found in sedimentary rock and explore how fossils are formed. - exploring different soils and identify similarities and differences between them and investigate what happens when rocks are rubbed together or what changes occur when they are in water. -Forming and answering questions about the way soils are formed.		which designs are the most effective. - exploring resistance in water by making and testing boats of different shapes. -designing and making products that use levers, pulleys, gears and/or springs and explore their effects.	advantages and disadvantages of specific adaptations, such as being on two feet rather than four, having a long or a short beak, having gills or lungs, tendrils on climbing plants, brightly coloured and scented flowers.
	Topic	What are our seasons and celebrations?	A Trip Around Town - how has our town of Heywood changed over time?	Adventure is out there! - how has transport changed over	Healthy Me - how does my body work?	Lighting it up!	Mapping it out!	Gadgets Galore - how did electricity change the world?
	NC Strand		Seasonal Changes	Living Things and their Habitats	Animals Including Humans	Electricity	Earth and Space	Electricity
	Scientific Enquiry skills and Concepts Progression	In this unit, the children will: Children at the expected level of development will: - Explore the natural world around them, making observations and	In this unit, the children will: -Observe changes across the four seasons -Observe and describe weather associated with the seasons and how	In this unit, the children will: - Explore and compare the differences between things that are living, dead and things that have never been alive.	In this unit, the children will: -identify that animals, including humans, need the right types and amount of nutrition, and that they	In this unit, the children will: - identify common appliances that run on electricity - construct a simple series electrical circuit, identifying and naming its	In this unit, the children will: -describe the movement of the Earth, and other planets, relative to the Sun in the solar system - describe the	In this unit, the children will: -associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit

		drawing pictures of animals and 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; - Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.	the day length varies -Observe closely using simple equipment Pupils might work scientifically by: -Use observations to suggest answers to questions Perform simple tests -Gather and record data to help in answering simple questions	-Identify that most living things live in habitats to which they are suited and describe how different habitats provide the basic needs of different kinds of animals and plants, and how they depend on each other. -Identify and name a variety of plants and animals in their habitats, including micro– habitats. -Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food. Pupils might work scientifically by: Using simple secondary sources (such as identification sheets) to name living things. -Describing the characteristics they used to identify a living thing. -Describing the characteristics they used to identify a living thing.	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 different types of teeth in humans and their functions. Pupils might work scientifically by: --comparing the teeth of carnivores and herbivores, and suggesting reasons for differences; finding out what damages teeth and how to look after them. -drawing and discussing their ideas about the digestive system and compare them with models or images..	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 Pupils might work scientifically by: -Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.	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 Pupils might work scientifically by: -Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. -deciding how to record and present evidence. - recording observations e.g. using annotated photographs, videos, labelled diagrams, observational drawings, labelled scientific diagrams or writing. -recording measurements e.g. using tables, tally charts, bar charts, line graphs and scatter graphs. - recording	-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. Pupils might work scientifically by: -Identifying scientific evidence that has been used to support or refute ideas or arguments. - Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary

							classifications e.g. using tables, Venn diagrams, Carroll diagrams and classification keys. - Using secondary sources to research questions that cannot be answered through investigations. - answering their own and others' questions based on observations they have made, measurements they have taken or information they have gained from secondary sources. When doing this, they discuss whether other evidence e.g. from other groups, secondary sources and their scientific understanding, supports or refutes their answer.	
Spring Term	Topic	What could be in this egg?	Houses and Homes - how is my home different to my grandparents when they were children?	Fire, Fire! How did the Great Fire of London change our capital forever?	Ancient Civilisations - where did the first civilisations appear?	Rotten Romans? - why were the Romans so successful and were they all rotten?	Marvellous Mayans - why do we remember the Maya?	World War II and the Home front - what was life like during WWII?
	NC Strand		Everyday Materials			Sound	Properties and Changes of Materials	
	Scientific Enquiry skills and Concepts Progression	In this unit, the children will: Children at the expected level of development will: - Explore the natural world around them, making observations and	In this unit, the children will: - Distinguish between an object and the material from which it is made - Identify and name a variety of			In this unit, the children will: - identify how sounds are made, associating some of them with something vibrating - recognise that vibrations from	In this unit, the children will: - Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency,	

		drawing pictures of animals and 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; - Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.	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 Pupils might work scientifically by: -Using observations and ideas to suggest answers to questions. -Asking simple questions and recognising that they can be answered in different ways. -Performing simple tests.			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 Pupils might work scientifically by: -Pattern seeking -Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables. -Comparative testing. Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment including thermometers and data loggers.	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 Pupils might work	

							scientifically by: -Planning a scientific enquiry to answer a question recognising & controlling variables -making systematic and careful observations. - using a range of equipment for measuring length, time, temperature and capacity. - using standard units for their measurements.	
	Topic	**Which is the smallest minibeast?**	**Comparison Study Go Wild! Christopher Columbus and Robert Falcon Scott - how have voyages of discovery changed over time?**	**Let it grow - how do living things grow and change over time?**	**Rainforests - what's so special about the rainforests?**	**Water Worlds - how did water travel change the world?**	**Our changing world - why should I care about deforestation?**	**WWII - why was winning the Battle of Britain so important?**
	NC Strand		**Animals Including Humans**	**Animals Including Humans**	**Plants**	**Living Things and their Habitats**		**Light**
	Scientific Enquiry skills and Concepts Progression	In this unit, the children will: Children at the expected level of development will: - Explore the natural world around them, making observations and drawing pictures of animals and plants; Know some similarities and differences between the natural world around them and contrasting	In this unit, the children will: -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,	In this unit, the children will: -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 - notice that animals, including humans, have	In this unit, the children will: -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	In this unit, the children will: -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		In this unit, the children will: -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

		environments, drawing on their experiences and what has been read in class; - Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.	amphibians, reptiles, birds and mammals, including pets) Pupils might work scientifically by -Gathering and recording data to help in answering questions,. -Observing closely using simple equipment. -Using observations and ideas to suggest answers to questions.	offspring which grow into adults - find out about and describe the basic needs of animals, including humans, for survival (water, food and air) Pupils might work scientifically by -Classifying using simple prepared tables and sorting rings.	- 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. Pupils might work scientifically by: - Using secondary sources to research questions that cannot be answered through investigations. - Recording findings using simple scientific language. -fair testing/observations over time. Using straightforward scientific evidence to answer questions or to support their findings. -Comparative testing Set up simple practical enquiries, comparative and fair tests. -Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.	pose dangers to living things. Pupils might work scientifically by: -Using secondary sources to research questions that cannot be answered through investigations. -Grouping and classifying. Gathering and recording classifying and presenting data in a variety of ways. - Recording findings using scientific language, drawings, labelled diagrams, keys, bar charts and tables. Identifying, classifying and grouping. -Gathering, recording and classifying data.		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. Pupils might work scientifically by: -Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. -Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.

Summer Term	Topic	Is everyone good in the land of fairy tales?	Food glorious food - healthy diet, healthy mind, means healthy me.	At the seaside - how have British holidays changed over time?	Ancient Egypt - how much did the Ancient Egyptians achieve?	Angry Earth - what links mountains, volcanoes and earthquakes?	Change in Monarchy - how did the ruling Monarchs influence change in Britain?	Crime and Punishment - how has this aspect of social history changed over time?
	NC Strand		Plants	Plants	Light	States of Matter	Living Things and their Habitats	Living Things and their Habitats
	Scientific Enquiry skills and Concepts Progression	In this unit, the children will: Children at the expected level of development will: - Explore the natural world around them, making observations and drawing pictures of animals and 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; - Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.	In this unit, the children will: -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 Pupils might work scientifically by: -Observing closely using simple equipment.	In this unit, the children will: -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. Pupils might work scientifically by: -Identifying and classifying. -Gathering and recording data to help in answering questions. -Performing simple tests. - Using practical resources provided to gather evidence to answer questions generated by themselves or the teacher. -Carrying out: tests to classify; comparative tests; pattern seeking; enquiries; and make observations over time.	In this unit, the children will: -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 Pupils might work scientifically by: - Pattern seeking.	In this unit, the children will: -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 Pupils might work scientifically by: -Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables. -Comparative and fair testing. -Making systematic and careful	In this unit, the children will: -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. Pupils might work scientifically by: - Using secondary sources to research questions that cannot be answered through investigations. - Reporting and presenting findings from enquiries, in oral and written forms such as displays and other presentations, using appropriate scientific language. - Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.	In this unit, the children will: -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 Pupils might work scientifically by: -Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. -Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when

						observations, and where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers		appropriate.
	Topic	How can we keep ourselves healthy?	Meet the Victorians - what was life like for children in England during the Victorian period?	Forest Fun - why are plants important to us all?	Brazil - an in depth country study	Remarkable Railways - how did the railways transform Rochdale, Heywood and beyond?	Changing Britain - how has life changed in Modern Britain?	Moving on - when and why do we experience transition in our lives?
	NC Strand		Animals Including Humans	Living Things and their Habitats	Forces and Magnets		Living Things and their Habitats Animals Including Humans	Animals Including Humans
	Scientific Enquiry skills and Concepts Progression	In this unit, the children will: Children at the expected level of development will: - Explore the natural world around them, making observations and drawing pictures of animals and 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; - Understand some important processes and changes in the natural world around them,	In this unit, the children will: - 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) Pupils might work scientifically by: -Gathering and recording data to	In this unit, the children will: -explore and compare the differences between things that are living, dead, and things that have never been alive - identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other - identify and name a variety of plants and animals in their habitats, including micro-habitats - describe how	In this unit, the children will: - 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		In this unit, the children will: -describe the changes as humans develop to old age Pupils might work scientifically by: - Pattern seeking - Planning a scientific enquiry to answer a question recognising & controlling variables -Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.	In this unit, the children will: -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. Pupils might work scientifically by: -Recording data and results of increasing complexity using

		including the seasons and changing states of matter.	help in answering questions,. -Observing closely using simple equipment. -Using observations and ideas to suggest answers to questions.	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 Pupils might work scientifically by: -Gathering and recording data to help in answer questions.	- Predict whether two magnets will attract or repel each other, depending on which poles are facing Pupils might work scientifically by: -Classifying and comparing -Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions. -Using secondary sources to research questions that cannot be answered through investigations. - Recording simple findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables. - Asking relevant questions and using different types of scientific enquiries to answer them.			scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. -Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate