Science

Subject	Quote to lead subject	Intent	Implementation	Impact
Science	*Science has changed our lives and is vital to the world's future prosperity, and all pupils should be taught essential aspects of the knowledge, methods, processes and uses of science.* *Mary Myatt*	To create a practical hands-on science curriculum with self-discovery at the heart of it.	Through the Kent scheme questioning is used to help children explore their understanding and challenge their views. Ensuring CPD to strengthen subject knowledge and that the resources are available to all teachers. Making sure that questioning is strong and	To create future thinkers and problem solvers as well as attaining the scientific knowledge covered in the science curriculum.

Science Uses the Kent Scheme of work

Science	**Autumn**	**Spring**	**Summer**
Year 1	**Weather and seasons**	Materials: Names and properties	Identifying animals/structures of animals and pet Animal survival Senses
Year 2	Habitat simple food chains	Working Scientifically	Plant identification and basic structure Growth-need water and light Human nutrition and exercise
Year 3	Rocks Fossils Skeletons and muscles	Plants – functions requirements for life water transport Life cycle	Electricity- simple circuits-switches/buzzers/conductors/insulators Magnets
Year 4	Digestion	Environmental living things changes, animal adaptions. Living things classifying Plants and animals / Food chains	Forces

Year 5	Light and shadows Light traveling	Earth and space	Life cycles and reproduction Offspring
Year 6	Sound Electricity- Circuits	Circulation Diet and exercise	Material and properties Solid liquid and gases

Science	Animals Including Humans Sum	1.4 identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals 1.5 identify and name a variety of common animals that are carnivores, herbivores and omnivores 1.6 describe and compare the structure of a variety of common animals (Fish, amphibians, reptiles, birds and mammals, including pets) 1.7 notice that animals, including humans, have offspring which grow into adults	Summer
Science	Everyday Materials	1.8 identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock 1.9 describe the simple physical properties of a variety of everyday materials 1.91 compare and group together a variety of everyday materials on the basis of their simple physical properties. 1.92 identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses 1.93 find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. 1.94 distinguish between an object and the material from which it is made	Spring
Science	Seasonal Changes	1.95 observe changes across the four seasons 1.96 observe and describe weather associated with the seasons and how day length varies.	Autumn
Science	Working Scientificall y	1.1 ask simple questions and recognise that they can be answered in different ways 1.2 observe closely, using simple equipment 1.3 perform simple tests	On going
Science	GDS	1.1 Working at a greater depth across the majority of the curriculum, can use Scientific knowledge in relation to the world around them. 1.2 Can work scientifically through questioning and reasoning with fluency. Challenging themselves through higher order thinking.	
Science	Living Things and their habitats	2.7 explore and compare the differences between things that are living, dead, and things that have never been alive	Summer

		2.8 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 2.9 identify and name a variety of plants and animals in their habitats, including microhabitats 2.91 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	
Science	Plants	2.92 Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees 2.93 find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. 2.94 observe and describe how seeds and bulbs grow into mature plants 2.95 identify and describe the basic structure of a variety of common flowering plants, including trees.	Sumner
Science	Animals Including Humans Sum	2.96 find out about and describe the basic needs of animals, including humans, for survival (water, food and air) 2.97 describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. 2.98 identify, name, draw and label the basic parts of the human body and say which part of the body is associated with the senses 2.99 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	Sumner
Science	Everyday Materials	2.991 distinguish between an object and the material from which it is made 2.992 identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock 2.993 describe the simple physical properties of a variety of everyday materials 2.994 compare and group together a variety of everyday materials on the basis of their simple physical properties.	Autumn Spring
Science	Working Scientificall y	2.1 ask simple questions and recognise that they can be answered in different ways 2.2 observe closely, using simple equipment 2.3 perform simple tests	On going

		2.4 identify and classify 2.5 use their observations and ideas to suggest answers to questions 2.6 gather and record data to help answer questions.	
Science	GDS	2.1 Working at a greater depth across the majority of the curriculum, can use Scientific knowledge in relation to the world around them. 2.2 Can work scientifically through questioning and reasoning with fluency. Challenging themselves through higher order thinking.	
Science	Plants	3.6 identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers 3.7 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 3.8 investigate the way in which water is transported within plants 3.97 explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.	Summer
Science	Animals Including Humans	3.98 identify that humans and some other animals have skeletons and muscles for support, protection and movement.	
Science	Rocks	3.99 compare and group together different kinds of rocks on the basis of their appearance and simple physical properties 3.991 describe in simple terms how fossils are formed when things that have lived are trapped within rock 3.992 recognise that soils are made from rocks and organic matter. 3.993 recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago	
Science	Electricity	3.1 identify common appliances that run on electricity 3.2 construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers 3.9 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	Spring

		3.91 recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit 3.92 recognise some common conductors and insulators, and associate metals with being good conductors.	
Science	Forces	3.3 compare how things move on different surface 3.4 notice that some forces need contact between two objects, but magnetic forces can act at a distance 3.5 observe how magnets attract or repel each other and attract some materials and not others 3.93 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 3.94 describe magnets as having two poles 3.95 predict whether two magnets will attract or repel each other, depending on which poles are facing.	Autumn
Science	Working Scientifically	3.1 asking relevant questions and using different types of scientific enquiries to answer them 3.2 setting up simple practical enquiries, comparative and fair tests 3.3 making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers 3.4 gathering, recording, classifying and presenting data in a variety of ways to help in answering questions 3.5 recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables	On going
Science	GDS	3.1 Working at a greater depth across the majority of the curriculum, can use Scientific knowledge in relation to the world around them. 3.2 Can work scientifically through questioning and reasoning with fluency. Challenging themselves through higher order thinking.	
Science	Living Things and their	4.4 recognise that living things can be grouped in a variety of ways 4.5 explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment	Spring

	Environment	4.6 recognise that environments can change and that this can sometimes pose dangers to living things. 4.7 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 4.8 give reasons for classifying plants and animals based on specific characteristics.	
Science	Animals Including Humans	4.1 describe the simple functions of the basic parts of the digestive system in humans 4.2 identify the different types of teeth in humans and their simple functions 4.3 construct and interpret a variety of food chains, identifying producers, predators and prey.	Autumn Spring
Science	Forces	4.9 explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object 4.91 identify the effects of air resistance, water resistance and friction, that act between moving surfaces 4.92 recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.	Summer
Science	Working Scientifically	4.93 asking relevant questions and using different types of scientific enquiries to answer them 4.94 setting up simple practical enquiries, comparative and fair tests 4.95 making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers 4.96 gathering, recording, classifying and presenting data in a variety of ways to help in answering questions 4.97 recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables 4.98 reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions 4.99 using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further question	On going

		4.991 identifying differences, similarities or changes related to simple scientific ideas and processes 4.992 using straightforward scientific evidence to answer questions or to support their findings.	
Science	GDS	4.1 Working at a greater depth across the majority of the curriculum, can use Scientific knowledge in relation to the world around them. 4.2 Can work scientifically through questioning and reasoning with fluency. Challenging themselves through higher order thinking.	
Science	Living Things and their Environment	5.1 describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird 5.2 describe the life process of reproduction in some plants and animals.	Spring
Science	Animals Including Humans	5.3 describe the changes as humans develop to old age.	Summer
Science	Evolution and Inheritance	5.4 recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents 5.5 identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.	Autumn
Science	Earth and Space	5.6 describe the movement of the Earth, and other planets, relative to the Sun in the solar system 5.7 describe the movement of the Moon relative to the Earth 5.8 describe the Sun, Earth and Moon as approximately spherical bodies 5.9 use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky	
Science	Light	5.91 recognise that light appears to travel in straight lines 5.92 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	

		5.93 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 5.94 use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them 5.95 notice that light is reflected from surfaces 5.96 recognise that light from the sun can be dangerous and that there are ways to protect their eyes 5.97 recognise that shadows are formed when the light from a light source is blocked by an opaque object 5.98 find patterns in the way that the size of shadows change.	
Science	Working Scientifically	5.99 planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary = 5.991 taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate 5.992 recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs 5.993 using test results to make predictions to set up further comparative and fair tests	On going
Science	GDS	6.1 Working at a greater depth across the majority of the curriculum, can use Scientific knowledge in relation to the world around them. 6.2 Can work scientifically through questioning and reasoning with fluency. Challenging themselves through higher order thinking.	
Science	Animals Including Humans Sum	6.1 identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood 6.2 recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function 6.3 describe the ways in which nutrients and water are transported within animals, including humans.	
Science	Electricity	6.4 associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit 6.5 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	

		6.6 use recognised symbols when representing a simple circuit in a diagram	
Science	Properties and Changes of Materials	6.7 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 6.8 know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution 6.9 use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating 6.91 give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic 6.92 demonstrate that dissolving, mixing and changes of state are reversible changes 6.93 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	
Science	States of Matter	6.94 compare and group materials together, according to whether they are solids, liquids or gases 6.95 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) 6.96 identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.	
Science	Sound	6.97 identify how sounds are made, associating some of them with something vibrating 6.98 recognise that vibrations from sounds travel through a medium to the ear 6.99 find patterns between the pitch of a sound and features of the object that produced it 6.991 find patterns between the volume of a sound and the strength of the vibrations that produced it 6.992recognise that sounds get fainter as the distance from the sound source increases.	
Science	Working Scientifically	6.993 taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate 6.994 recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs	

		6.995 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 6.996 identifying scientific evidence that has been used to support or refute ideas or arguments.	
Science	GDS	6.1 Working at a greater depth across the majority of the curriculum, can use Scientific knowledge in relation to the world around them. 6.2 Can work scientifically through questioning and reasoning with fluency. Challenging themselves through higher order thinking.	