Chelmondiston C of E Primary School

Long Term Plan of Content Coverage for Science

St Edmundsbury and Ipswich Diocesan Multi Academy Trust

Subject Intent: Our Science Curriculum enables our children to develop their knowledge and understanding of themselves and the world around them. They will develop the skills associated with science as a process of enquiry. It will develop the natural curiosity of the child, encourage respect for living organisms and the physical environment and provide opportunities for critical evaluation of evidence.

Big Ideas: **Investigation, Exploration, Observation**

Year 1

Term	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Area of Learning	Seasonal Changes		Everyday Materials	Animals Including Humans	Plants	
Working scientifically	• Ask simple questions and recognise that they can be answered in different ways. • Use simple equipment to observe closely. • Perform simple tests. • Identify and classify. • Use observations and ideas to suggest answers to questions.					
Statements from National Curriculum	• To observe changes across the four seasons. • To observe and describe weather associated with the seasons and how day length varies.		• To distinguish between an object and the material from which it is made. • To identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock. • To describe the simple physical properties of a variety of everyday materials. • To compare and	• To identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. • To identify and name a variety of common animals that are carnivores, herbivores and omnivores. • To describe and compare the structure of a	• To identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. • To identify and describe the basic structure of a variety of common flowering plants, including trees.	

				group together a variety of everyday materials on the basis of their simple physical properties.	variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets). • To identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.		
	SMSC and FBV Connections	**Spiritual Development**: • To show a sense of enjoyment and fascination in learning about themselves, others and the world around them. • To use imagination and creativity in learning. • To show a willingness to reflect on their experiences. **Moral Development**: • To show an interest in investigating and offering reasoned views about moral and ethical issues and ability to understand and appreciate the viewpoints of others on these issues. **Social Development:** • To use a range of social skills in different contexts, and socialising with other pupils, including those from different religious, ethnic and socio-economic backgrounds. • To show willingness to participate in a variety of communities and social settings, including volunteering, cooperating well with others and being able to resolve conflict. **Cultural Development:** • To show understanding and appreciation of the wide range of cultural influences that has shaped their own heritage and that of others.					

Year 2

Term	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Area of Learning	Use of Everyday Materials		Animals Including Humans	Plants	Living Things and Their Habitats	
Working scientifically	• Ask simple questions and recognise that they can be answered in different ways including use of scientific language from the NC. • Use simple equipment to observe closely including changes over time. Communicate ideas, what they do and what they find out in a variety of ways. • Perform simple comparative tests. • Identify, group and classify.					
Statements from National Curriculum	• 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. • To find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.		• To notice that animals, including humans, have offspring which grow into adults. • To find out about and describe the basic needs of animals, including humans, for survival (water, food and air). • To describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.	• To observe and describe how seeds and bulbs grow into mature plants. To find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.	• To explore and compare the differences between things that are living, dead, and things that have never been alive. • To 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. • To identify and name a variety of plants and animals in their habitats, including micro-	

						habitats. • To 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.	
	SMSC and FBV Connections	**Spiritual Development**: • To show a sense of enjoyment and fascination in learning about themselves, others and the world around them. • To use imagination and creativity in learning. • To show a willingness to reflect on their experiences. **Moral Development**: • To show an interest in investigating and offering reasoned views about moral and ethical issues and ability to understand and appreciate the viewpoints of others on these issues. **Social Development:** • To use a range of social skills in different contexts, and socialising with other pupils, including those from different religious, ethnic and socio-economic backgrounds. • To show willingness to participate in a variety of communities and social settings, including volunteering, cooperating well with others and being able to resolve conflict. **Cultural Development:** • To show understanding and appreciation of the wide range of cultural influences that has shaped their own heritage and that of others.					

Year 3

Term	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Area of Learning	Light	Animals Including Humans	Rocks	Forces and magnets	Plants	
Working scientifically	• Ask relevant questions and use different types of scientific enquiries to answer them. • Set up simple, practical enquires comparative and fair tests. • Make systematic and careful observations and, where appropriate, take accurate measurements using standards units, using a range of equipment, including thermometers and data loggers. • 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.					
Statements from National Curriculum	• To recognise that they need light in order to see things and that dark is the absence of light. • To notice that light is reflected from surfaces. • To recognise that light from the sun can be dangerous and that there are ways to protect their eyes. • To recognise that shadows are formed when the light from a light source is blocked by an opaque object. • To find patterns in the way that the size of shadows	• To 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. • To identify that humans and some other animals have skeletons and muscles for support, protection and movement.	• To compare and group together different kinds of rocks on the basis of their appearance and simple physical properties. • To describe in simple terms how fossils are formed when things that have lived are trapped within rock. • To recognise that soils are made from rocks and organic matter.	• To compare how things move on different surfaces. • To notice that some forces need contact between two objects, but magnetic forces can act at a distance. • To observe how magnets attract or repel each other and attract some materials and not others. • To compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some	• To identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers • To 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. • To investigate the way in which water is transported within plants. • To explore the part that flowers play in the life cycle of	

		change.			magnetic materials. • To describe magnets as having two poles. To predict whether two magnets will attract or repel each other, depending on which poles are facing.	flowering plants, including pollination, seed formation and seed dispersal.	
	SMSC and FBV Connections	•	•	•	• **Isaac Newton 1643-1727**	• **Isaac Newton 1643-1727**	•
		Spiritual Development: • To show a sense of enjoyment and fascination in learning about themselves, others and the world around them. • To use imagination and creativity in learning. • To show a willingness to reflect on their experiences. **Moral Development**: • To show an interest in investigating and offering reasoned views about moral and ethical issues and ability to understand and appreciate the viewpoints of others on these issues. **Social Development:** • To use a range of social skills in different contexts, and socialising with other pupils, including those from different religious, ethnic and socio-economic backgrounds. • To show willingness to participate in a variety of communities and social settings, including volunteering, cooperating well with others and being able to resolve conflict. **Cultural Development:** • To show understanding and appreciation of the wide range of cultural influences that has shaped their own heritage and that of others.					

Year 4

Term	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Area of Learning	Electricity	Animals Including Humans	States of Matter	Sounds	Living Things and Their Habitats	
Working scientifically	• Ask relevant question and use different types of scientific enquiries to answer them. • Set up simple practical enquiries, comparative and fair tests. • Make systematic and careful observations and, where appropriate, take accurate measurements using standards units, using a range of equipment, including thermometers and data loggers. • Gather, record, classify and present 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. • Report on findings form enquiries, including oral and written explanations, displays or presentations of results and conclusions. • Use results to draw simple conclusion, make predictions for new vales, suggest improvements and raise further questions. • Identify differences, similarities or changes related to simple scientific ideas and processes. • Use straight forward scientific evidence to answer questions or to support their findings.					
Statements from National Curriculum	• To identify common appliances that run on electricity. • To construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers. • To 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	• To describe the simple functions of the basic parts of the digestive system in humans. • To identify the different types of teeth in humans and their simple functions. • To construct and interpret a variety of food chains, identifying producers, predators and prey.	• To compare and group materials together, according to whether they are solids, liquids or gases. • To 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). • To identify the part played by	• To identify how sounds are made, associating some of them with something vibrating. • To recognise that vibrations from sounds travel through a medium to the ear. • To find patterns between the pitch of a sound and features of the object that produced it. • To find patterns between the	• To recognise that living things can be grouped in a variety of ways. • To explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment. To recognise that environments can change and that this can sometimes pose dangers to living things.	

		a battery. • To recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit. • To recognise some common conductors and insulators, and associate metals with being good conductors.		evaporation and condensation in the water and associate the rate of evaporation with temperature.	volume of a sound and the strength of the vibrations that produced it. • To recognise that sounds get fainter as the distance from the sound source increases.		
		Spiritual Development: • To show a sense of enjoyment and fascination in learning about themselves, others and the world around them. • To use imagination and creativity in learning. • To show a willingness to reflect on their experiences. **Moral Development**: • To show an interest in investigating and offering reasoned views about moral and ethical issues and ability to understand and appreciate the viewpoints of others on these issues. **Social Development:** • To use a range of social skills in different contexts, and socialising with other pupils, including those from different religious, ethnic and socio-economic backgrounds. • To show willingness to participate in a variety of communities and social settings, including volunteering, cooperating well with others and being able to resolve conflict. **Cultural Development:** • To show understanding and appreciation of the wide range of cultural influences that has shaped their own heritage and that of others.					

Year 5

Term	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Area of Learning	Earth and space	Animals Including Humans	Properties and Changes of Materials	Living Things and Their Habitats	Forces	
Working scientifically	• Plan different types of scientific enquiries to answer questions, including recognising and controlling variable where necessary. • Take measurement using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. • Record data and result s of increasing complexity using scientific diagrams and labels , classification keys, tables, scatter graphs, bar and line graphs. • Use test results to make predictions to set up further comparative and fair tests. • Report and present findings form 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 had been used to support or refute ideas of arguments.					
Statements from National Curriculum	• 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.	• To describe the changes as humans develop to old age.	• To 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. • 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	• To describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. • To describe the life process of reproduction in some plants and animals.	• To explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object. • 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	

				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 change. • To 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.		force to have a greater effect.	

		Spiritual Development: • To show a sense of enjoyment and fascination in learning about themselves, others and the world around them. • To use imagination and creativity in learning. • To show a willingness to reflect on their experiences. **Moral Development**: • To show an interest in investigating and offering reasoned views about moral and ethical issues and ability to understand and appreciate the viewpoints of others on these issues. **Social Development:** • To use a range of social skills in different contexts, and socialising with other pupils, including those from different religious, ethnic and socio-economic backgrounds. • To show willingness to participate in a variety of communities and social settings, including volunteering, cooperating well with others and being able to resolve conflict. **Cultural Development:** • To show understanding and appreciation of the wide range of cultural influences that has shaped their own heritage and that of others.

Year 6

Term	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Area of Learning	Living Things and Their Habitats	Animals Including Humans	Evolution and Inheritance	Light	Electricity	
Working scientifically	• Plan different types of scientific enquiries to answer their own or others' questions, including recognising and controlling variable where necessary. • Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat reading when appropriate. • Record data and results of increasing complexity using scientific diagrams and labels, classification key, tables, scatter graphs, bar and line graphs. • Use test results to make predictions to set up further comparative and fair tests. • Report and present findings form enquiries, including conclusions, causal relationship and explanation of and degree of trust in result, 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. • Describe and evaluate their own and other people's ideas related to topics in the NC (including ideas that have changed over time), using evidence form a range of sources. • Group and classify things and recognise patterns. • Find things out using a wide range of secondary sources of information.					
Statements from National Curriculum	• To describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animal. • To give reasons for classifying plants and animals based on specific characteristics.	• To identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood. • To recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function. • To describe the ways in which nutrients and water	• To recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago. • To recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to	• To recognise that light appears to travel in straight lines. • To 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. • To explain that we see things because light travels from light sources to our eyes or from light	• To associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit • To 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.	•

			are transported within animals, including humans.	their parents. • To identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.	sources to objects and then to our eyes. • To use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.	• To use recognised symbols when representing a simple circuit in a diagram.	
	SMSC and FBV Connections	•	•	• Charles Darwin 1809 - 1882	•	•	•
		Spiritual Development: • To show a sense of enjoyment and fascination in learning about themselves, others and the world around them. • To use imagination and creativity in learning. • To show a willingness to reflect on their experiences. **Moral Development**: • To show an interest in investigating and offering reasoned views about moral and ethical issues and ability to understand and appreciate the viewpoints of others on these issues. **Social Development:** • To use a range of social skills in different contexts, and socialising with other pupils, including those from different religious, ethnic and socio-economic backgrounds. • To show willingness to participate in a variety of communities and social settings, including volunteering, cooperating well with others and being able to resolve conflict. **Cultural Development:** • To show understanding and appreciation of the wide range of cultural influences that has shaped their own heritage and that of others.					