St Botolph's C of E Primary School

Long Term Planning - Science

EYFS Autumn		EYFS Spring		EYFS Summer	
Rhyme Time Seasons Weather	Story time Seasons Winter	Cold place Seasons Weather	Eggs Seasons Weather	A walk through the woods... Seasons Weather	Journeys Seasons Weather
Year 1 Autumn		**Year 1 Spring**		**Year 1 Summer**	
Plants Animals including Humans Everyday materials Seasonal changes		**Scientific Enquiry** Animals including Humans Everyday materials Seasonal changes		**Scientific Enquiry** Plants Animals including Humans Everyday materials Seasonal changes	
• M1 identify, name, draw and label the basic parts of the human body • M1 identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock • M1 distinguish between an object and the material from which it is made • M1 identify and describe the basic structure of a variety of common flowering plants, including trees • M1 observe changes across Autumn • M1 observe and describe weather associated with the Autumn season		• M1 distinguish between an object and the material from which it is made • M1 describe the simple physical properties of a variety of everyday materials • M1 Observe changes across Winter • M1Observe and describe weather associated with the Winter season • **M1 asking simple questions and recognising that they can be answered in different ways (context comparing everyday materials and their properties)** • **M1 observing closely, using simple equipment**		• M1 observe changes across Spring • M1 observe and describe weather associated with the Spring season • **M1 asking simple questions and recognising that they can be answered in different ways (context of how plants grow)** • **M1 observing closely, using simple equipment** • **M1 using their observations and ideas to suggest answers to questions (context of how plants grow)** • M1 identify and name a variety of common wild and garden plants,	

• M1 identify and name a variety deciduous and evergreen trees • M1 Identify which part of the body is associated with each sense • M1 Identify which part of the body is associated with each sense.	• M1 performing simple tests • M1 using their observations and ideas to suggest answers to questions • M1 gathering and recording data to help in answering questions • M1 describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets) • M1 observe and describe weather associated with the seasons and how day length varies • M1 identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals • M1 describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets) • M1 compare and group together a variety of everyday materials on the basis of their simple physical properties • M1 using their observations and ideas to suggest answers to questions	including deciduous and evergreen trees • M1 gathering and recording data to help in answering questions (context of which wild plants are most common) • M1 observe changes across Summer • M1 observe and describe weather associated with the Summer season • M1 observing closely, using simple equipment • M1 performing simple tests (context of materials) • M1 using their observations and ideas to suggest answers to questions (context of materials) • M1 identify and name a variety of common animals that are carnivores, herbivores and omnivores • M1 observe changes across Summer • M1 observe and describe weather associated with the Summer season
Year 2 Autumn	Year 2 Spring	Year 2 Summer

Scientific Enquiry Living things and their habitats Plants Animals including Humans Uses of everyday materials	Scientific Enquiry Living things and their habitats Plants Animals including Humans Uses of everyday materials	Scientific Enquiry Living things and their habitats Plants Animals including Humans Uses of everyday materials
• M1 explore and compare the differences between things that are living, dead, and things that have never been alive • M1 identify and name a variety of plants and animals in their habitats, including microhabitats • M1 identify a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard. • M1 identifying and classifying • M1 observing closely, using simple equipment • M1 performing simple tests • M1 gathering and recording data to help in answering questions • M1 using their observations and ideas to suggest answers to questions • M1 observe and describe how seeds and bulbs grow into mature plants • M1 find out and describe how plants need water, light and a suitable	• M1 describe the importance for humans of exercise. • M1 asking simple questions and recognising that they can be answered in different ways • M1 performing simple tests • M1 using their observations and ideas to suggest answers to questions • M1 gathering and recording data to help in answering questions • M1 identify that most living things live in habitats to which they are suited • M1 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 • M1 describe the importance for humans of hygiene.	• M1 asking simple questions and recognising that they can be answered in different ways • M1 observing closely, using simple equipment • M1 performing simple tests • M1 using their observations and ideas to suggest answers to questions • M1 gathering and recording data to help in answering questions • M1 notice that animals, including humans, have offspring which grow into adults • M1 describe how animals obtain their food from plants and other animals, using the idea of a simple food chain. • M1 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

temperature to grow and stay healthy • M1 find out about and describe the basic needs of animals, including humans, for survival (water, food and air) • M1 describe the importance for humans eating the right amounts of different types of food.	• M1 using their observations and ideas to suggest answers to questions • M1 observe and describe how seeds and bulbs grow into mature plants • M1 Compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses • M1 find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching • M1 notice that animals, including humans, have offspring which grow into adults • M1 observe and describe how seeds and bulbs grow into mature plants	• M1 asking simple questions and recognising that they can be answered in different ways • M1 asking simple questions and recognising that they can be answered in different ways • M1 find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching • M1 identifying and classifying
Year 3 Autumn	Year 3 Spring	Year 3 Summer
Scientific Enquiry Understanding Light and Seeing Understand movement, forces and magnets Rocks and Soils Animals including Humans	Scientific Enquiry Understanding Light and Seeing Rocks and Soils Plants Animals including Humans	Scientific Enquiry Understand movement, forces and magnets Rocks and Soils Plants
• M2 Identify that humans and some other animals have skeletons and muscles for support, protection and movement.	• M2 Identify that animals, including humans, need the right types and amount of nutrition, and that they	• M2/3 Describe magnets as having two poles. • M2/M3 Predict whether two magnets will attract or repel each other,

• M2 Recognise that they need light in order to see things and that darkness is the absence of light. • M2 Notice that light is reflected from surfaces. • M2 Notice that some forces need contact between two objects, but magnetic forces can act at a distance. • M2 Compare how things move on different surfaces. • **M2 Gather, recording, classifying and presenting data in a variety of ways to help in answering questions** • **M2 Make accurate measurements using standard units, using a range of equipment, including thermometers and data loggers** • **M2 Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables** • M2 Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties • **M2 Report on findings from enquiries, including oral and written explanations, displays or**	cannot make their own food; they get nutrition from what they eat • M2 Describe in simple terms how fossils are formed when things that have lived are trapped within sedimentary rock • M2 Recognise that light from the sun can be dangerous and that there are ways to protect our eyes. • M2 Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers • M2 Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. • M2 Recognise that shadows are formed when a light source is blocked by a solid object • **M2 Ask relevant questions** • **M2 Set up simple practical enquiries, comparative and fair tests** • **M2 Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions** • M2 Find patterns in the way that the size of shadows change.	depending on which poles are facing. • M2 Observe how magnets attract or repel each other and attract some materials and not others. • M2 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. • M2 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 • **M2 Identify differences, similarities or changes related to simple scientific ideas and processes** • **M2 Use straightforward scientific evidence to answer questions or to support their findings.** • M2 Notice that some forces need contact between two objects, but magnetic forces can act at a distance. • M2 To recognise that soils are made from rocks and organic matter. • **M2 Identify differences, similarities or changes related to simple scientific ideas and processes**

presentations of results and conclusions • M2 Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions • M2 Relate simple physical properties of some rocks to their formation (igneous or sedimentary) •		• M2 Use straightforward scientific evidence to answer questions or to support their findings. • M2 Investigate the way in which water is transported within plants • M2 Identify differences, similarities or changes related to simple scientific ideas and processes • M2 Use straightforward scientific evidence to answer questions or to support their findings. • M2 Identify that humans and some other animals have skeletons and muscles for support, protection and movement.
Year 4 Autumn	**Year 4 Spring**	**Year 4 Summer**
Scientific Enquiry Sound and hearing Electricity States of Matter Living Things and their Habitats Animals including Humans	Scientific Enquiry Sound and hearing Electricity States of Matter Animals including Humans	Scientific Enquiry Sound and hearing Electricity Living Things and their Habitats States of Matter
• M2 Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions • M2 Compare and group materials together, according to whether they are solids, liquids or gases	• M2 Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature. • M2 Ask relevant questions • M2 Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables	• M2 Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment • M2 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

• M2 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) • M2 Set up simple practical enquiries, comparative and fair tests • M2 Make accurate measurements using standard units, using a range of equipment, including thermometers and data loggers • M2 Identify common appliances that run on electricity • M2 Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers • M2 Identify the different types of teeth in humans and their simple functions M2 Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions • M2 Gather, recording, classifying and presenting data in a variety of ways to help in answering questions	• M2 Recognise some common conductors and insulators, and associate metals with being good conductors. • M2 Identify the different types of teeth in humans and their simple functions • M2 Describe the simple functions of the basic parts of the digestive system in humans • M3 Find patterns between the pitch of a sound and features of the object that produced it • M3 Recognise that sounds get fainter as the distance from the sound source increases • M2 Construct and interpret a variety of food chains, identifying producers, predators and prey.	• M2 Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit • M2 Ask relevant questions • M2 Set up simple practical enquiries, comparative and fair tests • M2 Make accurate measurements using standard units, using a range of equipment, including thermometers and data loggers • M2 Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables • M2 Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions • M2 Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions • M2 Identify differences, similarities or changes related to simple scientific ideas and processes • M2 Use straightforward scientific evidence to answer questions or to support their findings.

• M2 Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions • M2 Recognise that living things can be grouped in a variety of ways • M2 Identify how sounds are made, associating some of them with something vibrating • M2 Recognise that vibrations from sounds travel through a medium to the ear		• M3 Find patterns between the volume of a sound and the strength of the vibrations that produced it. • M2 Recognise that environments can change and that this can sometimes pose dangers to living things. • M2 Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.
Year 5 Autumn	**Year 5 Spring**	**Year 5 Summer**
Scientific Enquiry Understand movement, forces and magnets Understand the Earth's movement in space Materials and their Properties Plants Animals including Humans	Scientific Enquiry Understand movement, forces and magnets Understand the Earth's movement in space Materials and their Properties Plants Animals including Humans	Scientific Enquiry Understand movement, forces and magnets Understand the Earth's movement in space Materials and their Properties Plants Animals including Humans
• M3 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 • M3 Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including	• M3 Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating • M3 Demonstrate that dissolving, mixing and changes of state are reversible changes • M3 Plan different types of scientific enquiries to answer questions,	• M3 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 • M3 Report and presenting findings from enquiries, including conclusions, causal relationships

through filtering, sieving and evaporating • M3 Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, and bar and line graphs • M3 Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic • M3 To describe the life process of reproduction in some plants and animals. • M3 Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object. • M3 Identify the effect of drag forces, such as air resistance, water resistance and friction that act between moving surfaces. • M3 Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary • M3 Report and presenting findings from enquiries, including conclusions, causal relationships and explanations of results, in oral	including recognising and controlling variables where necessary • M3 Use test results to make predictions to set up further comparative and fair tests • M3 Report and presenting findings from enquiries, including conclusions, causal relationships and explanations of results, in oral and written forms such as displays and other presentations • M3 Describe the movement of the Earth, and other planets, relative to the Sun in the solar system • M3 Describe the movement of the Moon relative to the Earth • M3 Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird • M3 Identify the effect of drag forces, such as air resistance, water resistance and friction that act between moving surfaces. •	and explanations of results, in oral and written forms such as displays and other presentations • M3 Understand that some mechanisms including levers, pulleys and gears, allow a smaller force to have a greater effect. • M3 Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird • M3 Understand how some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution • M3 Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary • M3 Take measurements, using a range of scientific equipment, with increasing accuracy and precision • M3 Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, and bar and line graphs • M3 Use test results to make predictions to set up further comparative and fair tests

and written forms such as displays and other presentations • M3 Describe the Sun, Earth and Moon as approximately spherical bodies • M3 Identify scientific evidence that has been used to support or refute ideas or arguments. • M3 Describe the changes as humans develop to old age. • M3 Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, and bar and line graphs	•	• M3 Report and presenting findings from enquiries, including conclusions, causal relationships and explanations of results, in oral and written forms such as displays and other presentations • M3 Use the idea of the Earth's rotation to explain day and night, and the apparent movement of the sun across the sky. •
Year 6 Autumn	Year 6 Spring	Year 6 Summer
Understanding Light and Seeing Evolution and Inheritance Animals including Humans Electricity Living Things and their Habitats	Understanding Light and Seeing Evolution and Inheritance Animals including Humans Electricity Living Things and their Habitats	Evolution and Inheritance Animals including Humans Electricity Living Things and their Habitats
• M3 Understand that light appears to travel in a straight line • M3 Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eyes. • M3 Explain that we see things because light travels from light sources to our eyes or from light	• M3 Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them, and to predict the size of shadows when the position of the light source changes. • M3 Plan different types of scientific enquiries to answer questions,	• M3 Give reasons for classifying plants and animals based on specific characteristics. • M3 Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals

sources to objects and then to our eyes. • M3 Use recognised symbols when representing a simple circuit in a diagram. • M3 Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit • **M3 Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary** • M3 Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents • M3 Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood • M3 Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals • M3 Identify how animals and plants are adapted to suit their environment	**including recognising and controlling variables where necessary** • **M3 Take measurements, using a range of scientific equipment, with increasing accuracy and precision** • **M3 Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, and bar and line graphs** • M3 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 • **M3 Report and presenting findings from enquiries, including conclusions, causal relationships and explanations of results, in oral and written forms such as displays and other presentations** • M3 Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago • M3 Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood	• M3 Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function • **M3 Identify scientific evidence that has been used to support or refute ideas or arguments.**

in different ways and that adaptation may lead to evolution.	• M3 Describe the ways in which nutrients and water are transported within animals, including humans. • M3 Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function	