"As unique individuals, we do our best at work and play for the love of God and others."

7 Year Subject Overview for Science

(optional content in green and content to be visited throughout the year in red)

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year Rec	**Our Body** • To know about and name body parts (arms, legs, chest, hands and feet, eyes and nose, ears, mouth, hair) and describe what they do • To know we have similarities and differences **Senses** • To learn about senses • To explore ways to make sound	**Materials** • To know some names of different materials • To understand materials can change • To know where some materials come from **Food** • To understand where some foods comes from • To know what makes us healthy	**Space** • To know what space is Learn the name of some planets **Health and safety** • To know different ways to be safe	**Animals** • To name different types of animals • To explore habitats **Insects** • To know what an insect is • To know where insects live	**Forces** • To describe different forces **Weather and seasons** • To know the name of different season • To recognise types of weather • To discuss ways to be safe in. different types of weather	**Plants** • To know what a plant looks like • To name parts of a plant • To discuss how to look after plants • To understand how plants are made and grow
Year 1	**Animals Including Humans: About Me. Who Am I?** • To learn about the senses, sight, touch and taste • To learn about the senses of hearing and smell • To identify, name and draw parts of the human body • To learn about the changes in your body since you were a baby • To understand the importance of taking care of your body	**Seasons** (to be revisited each change of season): • To recognise different types of weather • To learn about clouds and rainfall • To recognise the different types of cold weather • To explain how to keep safe during thunderstorms • To look at different types of weather and how it affects places on Earth • To identify the four seasons	**Animals including Humans: about animals** • To understand what animals need to grow • To know where birds live and what they eat. • To explore how animals need to be cared for differently. • To discover how animal's offspring is the same as its parents. • To identify animals: fish, amphibians, reptiles, birds and mammals. • To identify common carnivores, herbivores and omnivores.	**Introduction to Plants** (to be revisited each change of season) • To know the basic parts of the plant • To identify and describe the basic structure of a variety of common flowering plants and trees • To understand the difference between evergreen and deciduous plant • To know that plants change over time • To identify and name a variety of common wild and garden plants	**Exploring Everyday materials** • To identify the materials objects are made from • To describe some physical properties of materials • To group materials by their physical properties • To explore everyday materials which are transparent or opaque • To explore everyday materials that are absorbent or non-absorbent	**Uses of everyday materials** • To understand why materials are chosen for specific tasks To recognise a variety of widely used materials To know how to test materials for their strength; understand that some materials are natural, and some are man made • **To know every day uses of magnets** • **To understand that magnets only attract certain metals**

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	• To show that humans mimic nature (learn about habitats)					**• To understand that magnets have a north and south pole**
Year 2	**Animals including Humans: Diet and Health** • To learn the importance of exercise, a healthy diet, hygiene and what is needed for humans to survive. • To learn the importance of nutrition for humans • To know how to keep healthy through diet • To know to keep healthy through daily exercise • To understand how liquid is measured • To understand how temperature is measured.	**Everyday Materials** • To explain why we use certain materials • To investigate squashing, bending, twisting and stretching • To compare the uses of everyday materials *To explore the work of some scientists (eg John McAdam's; John Dunlop or Charles Macintosh). *To understand how the properties of materials can be changed	**Animals including Humans: growth** • To learn about reproduction and growth in animals • To learn how humans grow by looking at how babies grow in to adults • To know the life cycle of a frog • To describe the life cycle of a butterfly *To know all animals have offspring which grow into adults * To learn the life cycle of birth, growth, reproduction and death	**Living things and their habitats** • To explore the difference between things that are living, dead and things that have never been alive. • To identify and name a variety plants and animals in a micro habitat • To: describe how animals obtain their food from plants. • To understand the journey food makes from farm to supermarket • To learn about simple food chains *To know about different sources of food grown by farmers	**Living things and their habitats: habitats around the world** • To know that living things live in environments which they are suited to • To appreciate that environments are constantly changing • To describe live in the Ocean • To appreciate the dangers to ocean life • To explore the arctic and Antarctic habitats • To explore the rainforest and its problems • To understand desert, underground and ocean habitats	**Plants: growth and care** (to cover earlier in the year) • To understand what plants need in order to thrive. • To understand that plants needs water, food and light, and a suitable temperature in order to grow • To observe how plants grow from a bulb to a plant. • To observe how plants grow from a seed to a plant. • To recognise the importance of flowers and seeds
Year 3	**Rocks** • To observe rocks * To recognise the difference between igneous, metamorphic and sedimentary rocks. • To understand what a fossil is and how it is formed in simple terms • To describe what soils are made of	**Forces and magnets** • To compare how things move on different surfaces To understand magnetism • To learn about different magnets • To know that the Earth behaves like a magnet • To learn about magnetic fields; learn about the law of magnetic attraction	**Plant life cycles** *To name the parts of a flower and describe what they do To describe how plants soak up water • To describe the life cycle of a plant • To understand how plants make their own food	**Exploring the world of Plants** • To describe the process of germination in seeds and bulbs • To explain how water and food moves around a plant **• To describe the features of non-vascular plants**	**Animals including Humans: What Makes Us** • To explore how skeletons and muscles are used for support, protection and movement *To learn the importance of nutrition for humans • To know how to keep healthy through diet	**Light** • To explain how shadows are formed *Investigate how shadows can be changed • To recognise that you need light in order to see things and that dark is the absence of light (explore light)

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	• To classify different types of weathering • To identify common rocks based on appearance	• To know that magnetic needles always point north	• To name the parts of a flower and describe what they do • To describe the process of pollination • To describe seed dispersal **• To use a data logger**	**• To explore extraordinary plants and fungi** **• To explore the rainforest and its problems**	• To have an introduction to the skeleton • To know about the skeleton-ligaments and tendons •	* To recognise that light from the sun can be dangerous and that there are ways to protect your eyes To notice that light is reflected from a surface (periscope) **•To use a data logger**
Year 4	**Sound** • To explain that some sounds are made when something vibrates *To recognise that sound gets fainter as it moves away from its source • Recognise that vibrations from sounds travel through a medium to the ear (solid liquid and gas unit) • Find patterns between the volume of a sound and the strength of the vibrations that produced it (speed of light unit) *Explain how to protect your ears **To use a data logger**	**Animals including food: Human digestion** • Describe the simple functions of the basic parts of the digestive system in humans including the intestines (salivary glands & taste buds) • To know the different types of teeth and their functions • Construct and interpret a variety of food chains, identifying producers, predators and prey. (food pyramids) • To know about vitamins and minerals • To understand food chains, know how natural cycles work	**States of matter:** • To compare and group solids, liquids and gases • To investigate the effect temperature has on changing state *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 • To understand evaporation and condensation • To understand the water cycle • To describe freezing and melting **To use a data logger**	**Living Things and their habitats: Nature and the environment** • Recognise that environments can change and that this can sometimes pose dangers to living things • To describe ecosystems and how they are affected by changes in the environment • To understand the human impact on the environment *To explore methods that can be used to conserve water • To explore air pollution • To understand water pollution • To learn about the work of Jane Goodall	**Electricity** • To construct a simple circuit *To name the basic parts of a circuit (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 * Identify common appliances that run on electricity	**Classifying living things and their Habitats** (throughout the year) • To observe habitats in the local area •Recognise that living things can be grouped in a variety of ways. (To know how scientists classify animals) • Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment (eg warm/cold blooded animals, reptiles and fish)

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Year 5	**Animals including Humans: The human Lifecycle** *To describe the changes as humans develop to old age • To explore gestation periods • To describe the changes which happen in childhood • To understand changes which happen in adolescence • To know about human reproductive organs	**Forces** • Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object. • begin to understand air resistance, water resistance and friction that act between moving surfaces •. Recognise that pulleys allow a smaller force to have a greater effect. • Recognise that gears allow a smaller force to have a greater effect. • To describe the life and work of Sir Isaac Newton	**Changes and Properties of Materials** • To compare and group materials based on their properties and uses including their hardness, solubility, transparency, 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. *To understand that some changes to materials are not reversible (including burning and acid on bicarb of soda) • To know the difference between reversible and irreversible change *To understand the actions of 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 • To explore the thermal conductivity of materials to improve energy efficiency in buildings or other systems • Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating (sandcastle)		**Earth and Space** •Describe the movement of the Earth, and other planets, relative to the Sun in the solar system. • Describe the movement of the Moon relative to the Earth. • Use the idea of the Earth's rotation to explain day and night and the apparent movement of the Sun across the sky. • Describe the sun, Earth and moon as approximately spherical bodies • To know about comets, asteroids and meteors. *To describe Nicolaus Copernicus' ideas about planetary motion	**Studying Living Things** • To know how some plants reproduce • To describe the life cycles of a mammal, bird and reptile • To describe the life cycle of an insect and amphibian • To learn about asexual reproduction plants • To know the life and work of Sir David Attenborough
Year 6	**Animals including Humans: blood transportation** *Identify and name the main parts of the human circulatory system *To describe the functions of the heart, blood vessels and blood. • To describe how oxygen is moved around the body *To describe how your heart pumps blood around the body	**Animals including humans: the heart and health** • To describe what affects your heart rate • To describe the consequences of an unhealthy lifestyle • To explore the different food groups and identify ways to eat a balanced diet • Describe the ways in which nutrients and water	**Evolution and inheritance** • To explain how adaptations help animals and plants survive • To explain what fossils can tell us • • To explain why animals can look different to their parents • To describe the process of natural selection **• To explore the work of palaeontologist Mary Anning**	**Light** • To compare material of different transparencies • To explain how light travels in a straight line and shadows are formed • 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	**Electricity** *Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit. • 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.	**Living things and their Habitats** • 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. • Give reasons for classifying plants and animals based on specific characteristics.

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	• To describe the roles of bacteria	are transported within animals, including humans. Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function.		from light sources to our 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.	• Use recognised symbols when representing a simple circuit in a diagram.	* To describe the work of Carl Linnaeus