Science Curriculum Map

(Year 1- Year 6)

We journey together: loving learning; daring to discover; caring for all; with Jesus as our guide.

Science	Autumn	Spring	Summer
Reception *(Understanding the World)*	**Children in Reception – Development Matters**		**Early Learning Goals (ELGs)**
	Describe what they see, hear and feel whilst outside. Recognise some environments that are different from the one in which they live Understand the effect of changing seasons on the natural world around them. Comment on images of familiar situations in the past. Compare and contrast characters from stories, including figures from the past. Talk about members of their immediate family and community. Name and describe people who are familiar to them. Draw information from a simple map. Understand that some places are special to members of their community. Recognise that people have different beliefs and celebrate special times in different ways. Recognise some similarities and differences between life in this country and life in other countries.		**The Natural World** 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 change in the natural world around them, including the seasons and changing states of matter. **Past and Present** Talk about the lives of the people around them and their roles in society Know some similarities and differences between things in the past and now, drawing on their experiences and what has been read in class Understand the past through settings, characters and events encountered in books read in class and storytelling. **People, Culture and Communities** Describe their immediate environment using knowledge from observations, discussion, stories, non-fiction texts and maps. Know similarities and differences between religious and cultural communities in this

			country, drawing on their experiences and what has been read in class. Explain some similarities and differences between life in this country and life in other countries, drawing on knowledge from stories, non-fiction texts and (where appropriate) maps.
Science	Autumn	Spring	Summer
Reception	**Animal adventures** Exploring animals big and small on the school grounds and further afield, identifying similarities and differences and sorting animals into groups.	**I am a scientist** Encouraging curiosity, the children explore the natural world through hands-on investigation, discovering how processes and changes occur around us.	**Our beautiful planet** Exploring outdoors, the children discover the wonders of the natural world by planting seeds, mixing plants in the mud kitchen and learning to care for our beautiful planet **Changing seasons** Observing how the natural world transforms through the year and recognising how these changes affect the weather, plants and animals.
Year 1	**Autumn 1** **Forces and space: Seasonal changes - 7 lessons** Reflecting on their experiences, the children learn about the four seasons and their associated weather, explore how seasonal changes affect trees, daylight hours and clothing and plan and present weather reports, considering the knowledge needed for the role. **Autumn 2** **Materials: Everyday materials - 7 lessons** Identifying and naming objects and the materials from which they are made, the children compare and group materials by how they look and carry out tests to	**Spring 1** **Animals: Sensitive bodies 7 lessons** Identifying and naming body parts, the children conduct practical activities with the senses to spot patterns and answer questions. **Spring 2** **Animals: Comparing animals - 7 lessons** Learning about animals, the children compare and group them by similarities and differences in characteristics, physical features and diets.	**Summer 1** **Plants: Introduction to plants - 7 lessons** Venturing outside, the children identify and name common wild and garden plants (including deciduous and evergreen trees), observe plant parts with magnifying glasses and name them, sort leaves by appearance, investigate whether beans need water to grow and identify edible plant parts. **Summer 2** **Making connections: Investigating science through stories - 6 lessons** Using picture books as inspiration, the children broaden their understanding of plants and animals by gathering and recording data to investigate if taller trees have larger trunks, recap the features of animal groups, build

	sort them based on unobservable properties.		waterproof animal homes with natural materials and sort birds according to their diet.

Science	Autumn	Spring	Summer
Year 2	**Autumn 1** **Living things: Habitats - 7 lessons** Identifying what living things need to survive by exploring the life processes shared by all living things. Pupils classify things as alive, once alive or never alive, investigate plants and animals in habitats around the world and discover how living things depend on one another through food chains and other relationships. **Autumn 2** **Living things: Microhabitats -7 lessons** Developing scientific enquiry skills by exploring how scientists investigate and answer questions about the world. Pupils learn about microhabitats and the needs of minibeasts, carry out surveys and investigations in the school grounds and discover the work of a botanist by identifying flowering plants.	**Spring 1** **Materials: Uses of everyday materials 7 lessons** Investigating how the properties of materials make them suitable for different uses. Pupils compare materials, explore how bending, stretching and other actions can change the shape of solid objects and use data from their enquiries to answer questions. **Spring 2** **Animals, including humans: Life cycles and health - 7 lessons** Exploring animal life cycles and survival by investigating how animals grow, change and meet their basic needs. Pupils collect and analyse data about changes in humans, develop their measuring and recording skills and consider how scientific knowledge can help people make healthy lifestyle choices.	**Summer 1** **Plants: Plant growth - 7 lessons** Examining how plants grow and reproduce by carrying out comparative tests and observing changes over time. Pupils identify the conditions needed for seed germination and healthy plant growth, measure and record stem growth, explore plant life cycles and consider the impact humans can have on plants and their environments. **Summer 2** **Making connections: Plant-based materials - 6 lessons** Considering ways to reduce, reuse and recycle by applying knowledge of material properties to solve practical problems. Pupils investigate plant-based materials, learn about paper production and carry out simple tests to identify suitable materials for homemade plant pots, using natural materials to decorate their designs.

Science	Autumn	Spring	Summer

Year 3	**<u>Autumn 1</u>** **Animals: Movement and nutrition - 7 lessons** Investigating the human body by studying the skeleton, muscles and nutrition. Pupils identify key bones and their functions, compare human and animal skeletons, explore how muscles enable movement, learn how the body uses energy and what makes a balanced diet. **<u>Autumn 2</u>** **Forces and space: Forces and magnets - 7 lessons** Investigating how vehicles move across different surfaces and how friction affects motion. Pupils develop their scientific enquiry skills by planning investigations, writing methods and recording data, while learning about contact and non-contact forces and the properties and uses of magnets.	**<u>Spring 1</u>** **Materials: Rocks and soil - 7 lessons** Classifying rocks by exploring their properties, uses and formation. Pupils investigate how fossils are formed and what they can reveal about the past, learn about the work of palaeontologists and explore soil formation through practical enquiries, including sedimentation and drainage tests. **<u>Spring 2</u>** **Energy: Light and shadows - 7 lessons** Exploring how light enables us to see and identifying different light sources. Pupils examine reflection and shadow formation, investigate factors that affect shadows and apply their learning creatively through shadow puppetry.	**<u>Summer 1</u>** **Plants: Plant reproduction - 7 lessons** Understanding how plants grow and reproduce by exploring the functions of different plant parts and their role in development. Pupils investigate factors that affect plant growth, discover how water is transported through plants and compare different seeds and methods of seed dispersal through practical enquiry and modelling activities. **<u>Summer 2</u>** **Making connections: Does hand span affect grip strength? - 6 lessons** Experimenting with friction and grip by carrying out comparative tests, analysing data and drawing conclusions. Pupils investigate the relationship between hand span and grip strength, explore how different materials affect grip and apply their findings to design and evaluate friction gloves.

Science	<u>Autumn</u>	<u>Spring</u>	<u>Summer</u>
Year 4	**<u>Autumn 1</u>** **Animals including humans: Digestion and food - 7 lessons**	**<u>Spring 1</u>** **Materials: States of matter - 7 lessons**	**<u>Summer 1</u>** **Living things: Classification and changing habitats - 7 lessons**

	Exploring the digestive system by using models to understand the function of key organs and how food is processed in the body. Pupils investigate different types of human teeth and factors affecting dental health and compare human and animal dentition. **<u>Autumn 2</u>** **Energy: Electricity and circuits - 7 lessons** Discovering how electricity is used in everyday life by identifying electrical appliances and learning how to work safely with electricity. Pupils build and test simple circuits, investigate conductors and insulators and explore how changes to a circuit affect bulb brightness.	Investigating solids, liquids and gases by exploring the properties of different states of matter and how materials change state. Pupils use everyday examples to understand melting, freezing, evaporation and condensation and apply their knowledge to the water cycle. **<u>Spring 2</u>** **Energy: Sound and vibrations - 7 lessons** Discovering how sound is made and travels by exploring the relationship between vibrations and hearing. Pupils investigate how sound moves through different materials, learn how animals such as dolphins and whales communicate, explore ways to protect hearing and experiment with pitch and volume by creating their own musical instruments.	Classifying living things by exploring different ways organisms can be grouped and evaluating the effectiveness of classification keys. Pupils investigate how habitats change over time and consider the positive and negative impact humans can have on the environment. **<u>Summer 2</u>** **Making connections: How does the flow of liquids compare? - 6 lessons** Comparing the properties of liquids by investigating how different substances flow and exploring ways to measure and represent their results. Pupils plan and carry out their own enquiries, draw conclusions from data and consider how the flow of liquids influences the design and use of medicines.

Science	<u>Autumn</u>	<u>Spring</u>	<u>Summer</u>
Year 5	**<u>Autumn 1</u>** **Materials: Mixtures and separation - 7 lessons** Separating mixtures by exploring different methods, including filtering, sieving and evaporation. Pupils investigate how substances dissolve, identify solutions and examine how temperature affects the rate of dissolving, applying their learning by	**<u>Spring 1</u>** **Forces and space: Earth and space - 7 lessons** Investigating how the Solar System works by examining the Sun, Earth, Moon and planets and comparing their movements. Pupils investigate how the Earth's rotation causes day and night, create models and sundials to represent their understanding	**<u>Summer 1</u>** **Forces and space: Unbalanced forces - 7 lessons** Exploring gravity, air resistance and water resistance and the effects of balanced and unbalanced forces. Pupils demonstrate key concepts through practical activities, plan and carry out investigations and test ideas using models.

	designing water filters and separating soil mixtures. **<u>Autumn 2</u>** **Materials: Properties and changes - 7 lessons** Examining the properties of materials by investigating hardness, transparency and conductivity and considering how these characteristics affect their uses. Pupils explore reversible changes, such as dissolving and changes of state and compare these with irreversible changes, including rusting, burning and chemical reactions.	and consider how scientific ideas about the universe have changed over time. **<u>Spring 2</u>** **Living things: Life cycles and reproduction - 7 lessons** Comparing animal and plant life cycles by investigating reproduction, growth and survival. Pupils explore sexual and asexual reproduction in plants, grow cuttings and plot root growth, compare life cycles across animal groups and analyse secondary data to understand how predators and climate change can affect amphibians.	**<u>Summer 2</u>** **Animals: Human timeline (3 lessons)** Making connections: Does the size of an asteroid affect the diameter of its crater? (3 lessons)

Science	<u>Autumn</u>	<u>Spring</u>	<u>Summer</u>
Year 6	**<u>Autumn 1</u>** **Living things: Classifying big and small - 7 lessons** Classifying living things by exploring how vertebrates, invertebrates, plants and micro-organisms are grouped according to shared characteristics. Pupils learn about Carl Linnaeus and the development of scientific classification systems and apply their understanding by using and creating classification keys to identify organisms. **<u>Autumn 2</u>** **Energy: Light and reflection - 7 lessons**	**<u>Spring 1</u>** **Living things: Evolution and inheritance -7 lessons** Exploring inheritance and evolution by investigating how characteristics can be inherited or influenced by the environment. Pupils learn how Darwin and Wallace used observations to develop theories of evolution, model natural selection using Darwin's finches and examine how fossil evidence supports the idea that species change over time. **<u>Spring 2</u>** **Energy: Circuits, batteries and switches - 7 lessons**	**<u>Summer 1</u>** **Animals, including humans: Circulation and health - 7 lessons** Learning about the circulatory system by exploring the roles of the heart, blood and blood vessels and using models to demonstrate how they work together. Pupils examine how lifestyle choices can affect health and investigate the relationship between exercise and heart rate. **<u>Summer 2</u>** **Making connections: Are some sunglasses safer than others? - 6 lessons** Evaluating sun safety by investigating how different sunglasses protect the eyes from light

	Examining how light behaves by investigating reflection, shadows and how light travels in straight lines. Pupils explore how the eyes detect light, examine the laws of reflection, investigate factors that affect shadow size and apply their knowledge by exploring practical uses of mirrors in everyday life.	Understanding electrical circuits by learning how to represent them using conventional circuit diagrams and models. Pupils investigate current, resistance and voltage, compare the effects of different batteries on bulb brightness and apply their knowledge of circuits and switches to design and create practical electrical devices.	and UV radiation. Pupils plan and carry out enquiries, use their knowledge of electrical circuits to create a light source for testing, analyse their results and communicate their conclusions through presentations and advertisements.