Science Long term Curriculum Map Knowledge (inc EYFS non-stat)

	Advent 1	Advent 2	Lent 1	Lent 2	Pentecost 1	Pentecost 2
EYFS Science:	**Topic 1:** Me and my small world **Birth to 5 Matters:** • Range 5 – Comments and asks questions about aspects of their familiar world such as the place where they live or the natural world • Range 6 – Knows about similarities and differences in relation to places, objects, materials and living things **Characteristics of a scientist:** • Make links between ideas • Identify, sort and group **ELG:** Know some similarities and differences	**Topic 1:** Let's go outside **Birth to 5 Matters:** • Looks closely at similarities, differences, patterns and change in nature **Characteristics of a scientist:** • Children concentrate and keep on trying if they encounter difficulties. • Collect simple information and mark make. **ELG:** Understand some important processes and changes in the natural world around them, including the seasons and	**Topic 1:** Changes in Winter **Birth to 5 Matters:** • Talks about the features of their own immediate environment and how environments might vary from one another • Makes observations of animals and plants and explains why some things occur, and talks about changes **Characteristics of a scientist:** • Children investigate and experience things • Notices similarities, difference and changes **ELG:**	**Topic 1:** Watch it grow **Birth to 5 Matters:** • Range 5 – Developing an understanding of growth, decay and changes over time • Range 6 – Looks closely at similarities, differences, patterns and change in nature **Characteristics of a scientist:** • Enjoy achievements • Make observations using simple equipment **ELG:** Explore the natural world around them, making observations and drawing	**Topic 1:** From city to sea **Birth to 5 Matters:** • Range 5 – Begin to understand the effect their behaviour can have on the environment • Range 6 – Talks about the features of their own immediate environment and how environments might vary from one another **Characteristics of a scientist:** • Ask 'how' and 'why' questions • Make links between ideas **ELG:** Know some similarities and differences between the natural world around them and contrasting environments, drawing	**Topic 1:** Happy and healthy **Birth to 5 Matters:** • Range 6 (Physical Development: Health and self-care) - Eats a healthy range of foodstuffs and understands need for variety in food - Describes physical changes to the body that can occur when feeling unwell, anxious, tired, angry or sad **Characteristics of a scientist:** • Children concentrate and keep on trying if they encounter difficulties

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	between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class. **Topic 2:** What's in my basket? **Birth to 5 Matters:** • Range 5 – Talks about why things happen and how things work • Range 6 – Knows about similarities and differences in relation to places, objects, materials and living things **Characteristics of a scientist:** • Explore and test own ideas	changing states of matter **Topic 2:** What's changed? **Birth to 5 Matters:** • Range 5 – Talks about why things happen and how things work • Range 6 – Knows about similarities and differences in relation to places, objects, materials and living things **Characteristics of a scientist:** • Children investigate and experience things. • Talk about what they have done and found out. **ELG:** Understand some important processes and changes in the natural world around them,	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. **Topic 2:** Let it flow **Birth to 5 Matters:** • Knows about similarities and differences in relation to places, objects, materials and living things **Characteristics of a scientist:** • Children have and develop their own ideas • Makes attempts to solve problems **ELG:**	pictures of animals and plants. **Topic 2:** Animal detectives **Birth to 5 Matters:** • Range 5 – Shows care and concern for living things and the environment • Range 6 – Makes observations of animals and plants and explains why some things occur, and talks about changes **Characteristics of a scientist:** • Make links between ideas • Observe and suggest an answer to a question **ELG:** Know some similarities and differences between the natural world around	on their experiences and what has been read in class. **Topic 2:** Look all around **Birth to 5 Matters:** • Range 5 – Comments and asks questions about aspects of their familiar world such as the place where they live or the natural world • Range 6 – Talks about the features of their own immediate environment and how environments might vary from one another **Characteristics of a scientist:** • Children investigate and experience things • Shows curiosity using their senses **ELG:** Explore the natural world around them,	• Talk about what they have done and found out **ELG:** Manage their own basic hygiene and personal needs, including dressing, going to the toilet and understanding the importance of healthy food choices. **Foundations for Year 1:** • Animals including humans **Topic 2:** Our wonderful world **Birth to 5 Matters:** • Range 5 - Shows care and concern for living things and the environment - Begin to understand the effect their

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	• Children investigate and experience things **ELG:** Listen attentively and respond to what they hear with relevant questions, comments and actions when being read to and during whole class discussions and small group interactions **Topic 3:** Senses **Birth to 5 Matters:** • Knows about similarities and differences in relation to places, objects, materials and living things **Characteristics of a scientist:** • Have a go • Shows curiosity using their senses **ELG:**	including the seasons and changing states of matter **Topic 3:** Night and day **Birth to 5 Matters:** • Range 5 – Comments and asks questions about aspects of their familiar world such as the place where they live or the natural world • Range 6 – Makes observations of animals and plants and explains why some things occur and talks about changes **Characteristics of a scientist:** • Develop strategies for doing things. • Ask questions to find out more. **ELG:**	Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter **Topic 3:** From desert to jungle **Birth to 5 Matters:** • Talks about the features of their own immediate environment and how environments might vary from one another • Makes observations of animals and plants and explains why some things occur, and talks about changes **Characteristics of a scientist:**	them and contrasting environments, drawing on their experiences and what has been read in class. **Topic 3:** Pushes and pulls **Birth to 5 Matters:** • Range 5 – Talks about why things happen and how things work • Range 6 – Knows about similarities and differences in relation to places, objects, materials and living things **Characteristics of a scientist:** • Develop strategies for doing things • Explore and test their own ideas **ELG:**	making observations and drawing pictures of animals and plants. **Topic 3:** Test it out! **Birth to 5 Matters:** • Range 5 – Comments and asks questions about aspects of their familiar world such as the place where they live or the natural world • Range 6 – Knows about similarities and differences in relation to places, objects, materials and living things **Characteristics of a scientist:** • Children have and develop their own ideas • Makes attempts to solve problems **ELG:** Understand some important processes and changes in the natural world around	behaviour can have on the environment **Characteristics of a scientist:** • Enjoy achievements • Ask questions to find out more **ELG:** Give focused attention to what the teacher says, responding appropriately even when engaged in activity, and show an ability to follow instructions involving several ideas or actions. **Topic 3:** We're going on an animal hunt **Birth to 5 Matters:** • Range 5 – Shows care and concern for living things and the environment • Range 6 – Makes observations of

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	Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter	Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter	• Make links between ideas • Identify, sort and group **ELG:** Explore the natural world around them, making observations and drawing pictures of animals and plants.	Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter	them, including the seasons and changing states of matter	animals and plants and explains why some things occur, and talks about changes **Characteristics of a scientist:** • Develop strategies for doing things • Record what they notice **ELG:** Explore the natural world around them, making observations and drawing pictures of animals and plants
Year 1 Science:	**Biology - Animals including humans** The Human Body Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense	**Biology/Physics - Seasonal Changes** Observe changes across the four seasons. (Autumn and winter) Observe and describe weather associated with the	**Biology - Animals including humans** Identify and name a variety of common animals, including fish, amphibians, reptiles, birds and mammals. Identify and name a variety of common	**Biology/Physics - Seasonal Changes** Observe changes across the four seasons. (Spring) Observe and describe weather associated with the seasons and	**Biology - Plants** Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. Identify and describe the basic structure of a variety of	**Biology/Physics - Seasonal changes** Observe changes across four seasons. (Summer) Observe and describe weather associated with the seasons and how day length varies

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		seasons and how day length varies. **Everyday Materials** Distinguish between an object and the material from which it is made. Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water and rock. Describe the simple physical properties of a variety of everyday materials. Compare and group together a variety of everyday materials on the basis of their simple physical properties.	animals that are carnivores, herbivores and omnivores. Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets	how day length varies	common flowering plants, including trees	
Year 2 Science:	**Biology - Animals including humans.** • Describe the basic needs of animals, including	**Biology - Animals including humans.** • Notice that animals including humans have	**Physics - Uses of everyday materials.** • Identify and compare the suitability of	**Biology - Plants.** •Observe and describe how seeds and bulbs grow into mature plants.	**Biology - Living things and their habitats.** • Identify habitats and how they provide the needs for	**Biology - Living things and their habitats.** • Exploring the difference between things that are

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	humans, for survival. • Describe the importance for humans of exercise, eating healthily and hygiene.	offspring which grows into adults. **Uses of everyday materials.** **Physics** • Identify and compare the suitability of everyday materials for particular uses.	everyday materials for particular uses. • Find out how the shapes of solid objects can be changed. **Plants.** **Biology** • Investigate what plants need to grow and stay healthy.		different animals and plants. • Name a variety of plants and animals in their habitats and micro-habitats.	living, dead and have never been alive. •Describe food chains.
Year 3 Science:	**Biology - Animals including Humans (Skeletons & Movement)** • Identify that humans and some animals have skeletons and muscles for support, movement and protection. **(Nutrition & Diet)** Identify that animals, including humans, need the	**Biology/Physics - Rocks** • Compare and group together different kinds of rocks based on their appearance and simple physical properties. **(Fossils)** • Describe in simple terms how fossils are formed when living things that have lived	**(Soils)** • Recognise that soils are made rocks and organic matter **Beginning of light topic (see next column)**	**Physics - Light** • Recognise that they need light in order to see things and that dark is the absence of light. • Notice that light is reflected from surfaces. • Recognise that light from the sun can be dangerous and that there are ways to	**Biology - Plants** • Identify and describe the functions of different parts of a flowering plant. • 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. • Investigate the way water is	**Physics - Forces and magnets** • Compare how things move on different surfaces. • Notice that some forces need contact, but magnetic forces can act at a distance. • Observe how magnets attract and repel some materials and not others.

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	right types and amounts of nutrition, and they cannot make their own food; they get nutrition from what they eat.	are trapped within rock. .		protect the eyes. • Recognise that shadows are formed when the light from a light source is blocked. Find patterns in the way that the size of shadows can change.	transported within plants. Explore the part that flowers play in the life cycle of a flowering plants, including pollination, seed formation and seed dispersal.	• Compare and group together a variety of everyday materials on the basis of whether they attracted to a magnet, and identify some magnetic materials. • Describe magnets as having two poles. Predict whether two magnets will attract or repel depending on which poles are facing.
Year 4 Science:	**Biology-Living Things and their Habitats** • Recognise that living things can be grouped in a variety of ways. • Explore and use classification keys to help group, identify	**Biology-Animals including Humans** Construct and interpret a variety of food chains, identifying producers, predators and prey **Chemistry-States of Matter**	**Physics-Sound** • Identify how sounds are made, associating some of them with something vibrating. • Recognise that vibrations from sounds travel	**Physics – Sound – complete unit** **Physics-Electricity** • Identify common appliances that run on electricity. • Construct a simple series	**Physics – Electricity – complete unit**	**Biology-Animals including Humans** • Describe the functions of the digestive system in humans. • Identify the different types of teeth and their functions.

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	and name a variety of living things in their local and wider environment. • Recognise that environments can change and that this can sometimes pose dangers to living things.	• Compare and group materials together, according to whether they are solids, liquids or gases. • 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). • Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.	through a medium to the ear. • Find patterns between the pitch of a sound and features of the object that produced it. • Find patterns between the volume of a sound and the strength of the vibrations that produced it. • Recognise that sounds get fainter as the distance from the sound source increases.	electrical circuit, identifying and naming its basic parts, 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		

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				conductors and insulators, and associate metals with being good conductors.		
Year 5 Science:	**Physics - Forces** Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object. Identify the effects of air resistance, water resistance and friction, that act between moving surfaces. Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.	**Physics - 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. Describe the Sun, Earth and Moon as approximately spherical bodies. Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.	**Chemistry - Properties and changes of materials** 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. Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic.	**Chemistry - Reversible and irreversible changes** Know that some materials will dissolve in liquid to form a solution and describe how to recover a substance from a solution. Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating. Demonstrate that dissolving, mixing and changes of	**Biology - Living things and their habitats** Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird Describe the life process of reproduction in some plants and animals.	**Biology - Animals including humans** describe the changes as humans develop to old age. (puberty and the changes that happen to boys and girls)

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				state are reversible changes. Explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible.		
Year 6 Science:	**Physics - Light** Recognise that light appears travels in straight lines. 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 from light sources to our eyes or from light sources to objects	**Biology - Animals including humans: circulation** Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood. Recognise impact of diet, exercise, drugs and lifestyle on the way their bodies function. Describe the ways in which nutrients are transported	**Physics - Electricity** Associate the brightness of a lamp or the volume of a buzzer with the number 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.	**Biology - Evolution and Inheritance** Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago. Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents.		**Biology - 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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	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.	within animals, including humans.	Use recognised symbols when representing a simple circuit in a diagram.	Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.		