Christ Church C of E Primary School

Have Faith…

Whole School Curriculum Map: Science

"Each of you should use whatever gift you have received to serve others, as faithful stewards of God's grace in its various forms."

1 Peter 4: 10

2021-2022	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Foundation Stage	**Ourselves**	**Celebrations**	**Favourite Stories – Tigers and Bears**	**New Life**	**Where I Live – Families and Minibeasts**	**Seaside**
Science Units and Key Learning	**Working Scientifically – Ourselves/Growing and Changing:**	**Working Scientifically – Ice Investigation**	**Working Scientifically – Tigers and Bears**	**Working Scientifically – Plants**	**Working Scientifically – Mini-beasts: (Caterpillars /Butterflies)**	
	Changing Explore/Observe: look closely at/notice. **Describe:** talk about what they notice/observe; talk about changes they notice and changes over time. **Record:** draw pictures, take photographs, make models or scrapbooks. **Questioning:** shows an interest in/is curious about; ask questions about what they notice/observe or changes that occur. **Explain:** talk about why things happen/occur; talk about how things work. **Research:** talk to people (visits/visitors/family), think of questions to ask to find things out and find out how things work; use first hand experiences /use secondary sources, (e.g. books, photographs, internet). **Compare/sort/group/identify/classify:** notice similarities, notice differences; talk about similarities and/or differences. **Test:** make suggestions, show resilience, work with others. **Vocabulary:** use simple vocabulary to name and describe objects, materials, living things and habitats.					
	ELG: The Natural World Children at the expected level of development will: - 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 changes in the natural world around them, including the seasons and changing states of matter.					

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Year 1	All at Sea	Fighting Fit		Location, Location, Location
Science Units and Key Learning	**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, including Humans** Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.	**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 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).	**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 common flowering plants, including trees
	Working Scientifically: What type of material is best to make a boat float?	**Working Scientifically:** Use sense to compare different textures, sounds and smells	**Working Scientifically:** Use observations to compare and contrast animals, describing how they identify and group them.	**Working Scientifically:** Make a 'pocket guide to plants' describing how they can identify and group them, and drawing diagrams showing the different parts of the plants.
	Seasonal Change Observe changes across the four seasons. Observe and describe weather associated with the seasons and how day length varies.			
	Working Scientifically: Monitor weather and create weather reports			

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Year 2	Knights and Castles	An Island Home	Safari Adventure	
Science Units and Key Learning	**Materials** Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.	**Living things and their habitats** Explore and compare the differences between things that are living, dead, and things that have never been alive 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 Identify and name a variety of plants and animals in their habitats, including micro-habitats 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	**Plants** Observe and describe how seeds and bulbs grow into mature plants. Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.	**Animals, including humans** Notice that animals, including humans, have offspring which grow into adults. Find out about and describe the basic needs of animals, including humans, for survival (water, food and air). Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.
	Working Scientifically: Investigating shopping bags: paper / plastic / cloth. Identifying advantages and disadvantages of each and making decisions about which they think is the best material and why	**Working Scientifically:** Use observations to compare and contrast animals, describing how they identify and group them.	**Working Scientifically:** How does exposure to light affect the healthy growth of a plant and why?	**Working Scientifically:** Do older children have bigger feet?

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Year 3	Bonjour!	Meet the Flintstones		Riverbank Tales		Roman Rule
Science Units and Key Learning	**Humans: Health and Nutrition** 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.	**Materials and their properties Rocks** Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties. Describe in simple terms how fossils are formed when things that have lived are trapped within rock. Recognise that soils are made from rocks and organic matter.	**Light** Recognise that they need light in order to see things, and that the 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 protect their eyes. Recognise that shadows are formed when the light from a light from a light source is blocked by an opaque object. Find patterns in the way that the size of shadows change.	**Animals, including humans: Skeletons and Movement** Identify that humans, and some other animals, have skeletons and muscles for support, protection and movement	**Plants** Identify and describe the functions of different parts of flowering plants: roots; stem/trunk; leaves; flowers. 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 in which water is transported within plants. Explore the part that flowers play in the life cycle of flowing plants, including pollination, seed formation and seed dispersal.	**Forces and Magnets** Compare how things move on different surfaces. Notice that some forces need contact between two objects, but magnetic forces can act at a distance. Observe how magnets attract or repel each other and attract some materials and not others. 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. Describe magnets as having two poles. Predict whether two magnets will attract or repel each other, depending on which poles are facing.
	Working Scientifically: Working Scientifically: Look for patterns in what happens to shadows when the distance between the light source and the object changes.	**Working Scientifically:** Working Scientifically: Identify and classify rocks according to whether they have grains or crystals, and whether they have fossils in them.	**Working Scientifically:** Research different food groups and how they keep us healthy and design meals based on what they find out.	**Working Scientifically:** Identify and group a range of animals with and without skeletons and observe and compare their movements	**Working Scientifically:** Compare how a range of factors affect plant growth e.g. amount of light / amount of fertiliser.	**Working Scientifically:** Forces: Raise questions and carry out tests to find out how far things move on different surfaces and gather and record data to answer their questions. Magnets: Explore the strengths of different magnets, finding a fair way to compare them.

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Year 4	Mighty Mountains	Vicious Vikings	The Chocolate Tree		Lights, Camera, Action	
Science Units and Key Learning	**States of Matter & The Water Cycle** 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 temperate 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.		**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 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.	**Animals Inc. Humans: Teeth and Digestion** Describe the simple functions of the basic parts of the digestive system in humans. Identify the different types of teeth in humans their simple functions. Construct and interpret a variety of food chains, identifying producers, predators and prey.	**Electricity** Identify common appliances that run on electricity. Construct a simple series 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 conductors and insulators, and associate metals with being good conductors.	**Sound** Identify how sounds are made, associating some of them with something vibrating. Recognise that vibrations from sounds travel 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.
	Working Scientifically: Observe and record evaporation over a period of time, for example a puddle in the playground		**Working Scientifically:** Using and making simple keys to explore and identify local plants and animals	**Working Scientifically:** Find out what causes damage to teeth and how to look after them	**Working Scientifically:** Observe patterns, for example, what happens to bulbs when more cells are added	**Working Scientifically:** Investigate a range of materials to find out which provides the best insulation against sound

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Year 5	Crime and Punishment		Amazing Amazon		It's all Greek to Me!	
Science Units and Key Learning	**Properties and changes of materials – testing properties 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.	**Properties and changes of materials reversible / 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 describe how mixtures might be separated, including through filtering, sieving and evaporating. Demonstrate the dissolving, mixing and changes of state are revisable changes. 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.	**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.	**Animals Inc. Humans -** Describe the changes as humans develop to old age.	**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.	**Earth and Space** Describe the movement of the earth, and other planets, relative to the sun and 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.
	Working Scientifically: Observe and compare the changes that take place, for example, when burning different materials or baking bread or cakes		**Working Scientifically:** Observe and compare the life cycles of plants and animals in their local environment with other plants and animals around the world (in the rainforest), ask pertinent questions and suggesting reasons for similarities and differences	**Working Scientifically:** Research the gestation periods of other animals and compare them with humans	**Working Scientifically:** Explore resistance in water by making and testing boats of different shapes	**Working Scientifically:** Compare the time of day at different places on the Earth through internet links and direct communication

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Year 6	Tomb Raiders		All Aboard!		Bring Me Sunshine!	
Science Units and Key Learning	**Animals Inc. Humans: Circulatory System and exercise** Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood.	**Electricity** Associate the brightness of a lamp, or the volume of a buzzer, with the number and voltage of cells use 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. Use recognised symbols when representing a simple circuit in a diagram.	**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.	**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. Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may need to evolution.	**Health – Animals Inc. Humans: Keeping healthy, diet and lifestyle** Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function. Describe the ways in which nutrients and water are transported within animals, including humans.	**Light** Recognise that light appears to travel 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 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.
	Working Scientifically: Produce a piece of writing that demonstrates the key knowledge e.g. explanation text, job description of the heart	**Working Scientifically:** Design and make an alarm system to protect a pyramid from tomb raiders	**Working Scientifically:** Research unfamiliar animals and plants from a broad range of other habitats and decide where they belong in the classification system	**Working Scientifically:** Observing and raising questions about local animals and how they are adapted to their environment.	**Working Scientifically:** Present information e.g. in a health leaflet describing impact of drugs and lifestyle on the body	**Working Scientifically:** Design and making a periscope and using the idea that light appears to travel in straight lines to explain how it works