St Alban & St Stephen Catholic Primary School & Nursery

Science - Whole School Curriculum Map

'Learning and growing with God by our side'

Science						
Year group	**Autumn 1 Unit of work**	**Autumn 2 Unit of work**	**Spring 1 Unit of work**	**Spring 2 Unit of work**	**Summer 1 Unit of work**	**Summer 2 Unit of work**
Nursery	Exploring the parts of the body (external). Identify and explore our senses. Autumn - Natural Materials	Light and Dark Finding out how light can be created and changed. Seasonal Changes	Hands on experiences with a variety of materials, making observations and describing what they can see.	Learn about animals from their own experiences and which can be kept as pets. Farm animals and the life cycle of a chicken. Seasonal Changes	Understand the key features of the life cycle of a plant. Investigate mini-beasts and learn about animals that hatch from eggs (i.e. butterflies, chicks).	To observe the changes of the new season and continue to observe the plants and flowers growing outdoors (link to Art). Investigate materials and forces to make a boat.

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Reception	Exploring the parts of the body (internal and external) Describe the use of our senses. Autumn – Seasons and Natural materials.	Discovering sources of light and how night and day come about. Introduction to Space (i.e. Sun, Moon, Stars and Planets). Seasonal Changes	Observe and describe changes in materials and state, such as ice melting to water. The life cycle of an emperor penguin and the start to a penguin chick's life.	To learn about wild animals around the world and the dangers that some of them are currently facing. Become aware of the impact on our current way of living and how people can show respect and responsibility in order to protect these animals. Seasonal Changes	To further understand life cycles as they grow their own seeds and beans and learn about the best conditions for growing plants and flowers. Learn about the important role plants, trees and insects play in our environment. Further explore life cycles and minibeasts and their habitats.	To learn about life under the sea and the creatures that inhabit it. Further observe the changes of the new season and continue to observe the plants and flowers growing outdoors – comparing deciduous and evergreen trees. Experiment with materials to learn about floating and sinking.

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Year 1	**Seasons/ Ourselves** Developing an understanding of how the environment changes across the year, and how humans also change in what they wear, eat and do.	**Common and wild garden plants/Materials** Identify and describe the basic structure of a variety of common plants, including trees. Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees.	**Seasons/ 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 based on their simple properties.	**Animal life processes**. Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets).	**Seasons/ Animals** Identify and name a variety of animals including fish, amphibians, reptiles, birds and mammals. Identify and name common animals that are carnivores, herbivores and omnivores.	**Humans** Identify, name, draw and label the basic parts of the human body. Say which part of the body is associated with each sense.

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Year 2	**Animals including humans: Healthy Me** Describing the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.	**Materials: Materials Monster** Identifying and comparing the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.	**Our Local Environment: Animals and their habitats/ Food chains** Describing 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	**Materials/ Animals including humans** Finding out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.	**Living things and habitats/ Food chains** 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.	**Plants /Working Scientifically: Little MasterChef** Observing 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. Finding out about and describing the basic needs of humans for survival (water, food and air). Understanding the importance for humans of eating the right amounts of different types of food, and hygiene.

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Year 3	**Rocks and Fossils** Compare and group together different kinds of rocks based on 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.	**Forces, magnets and friction** 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 based on 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.	**Animals including humans- foods and our bodies** Identify that animal, 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. Identify that humans and some other animals have skeletons and muscles for support, protection and movement.	**Light** Recognise that we need light 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 protect the eyes. Recognise that shadows are formed when the light from a light source is blocked by a solid object. Find patterns in the way that the sizes of shadows change.	**Plants** Identify and describe the functions of different parts of flowering plants: roots, stem / trunk, leaves and 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 flowering plants, including pollination, seed formation and seed dispersal.	**Reuse, Reduce, recycle** explain why waste is a problem for the planet; identify different types of waste; make recommendations to reduce waste; plan and set up a simple comparative test for plant growth; identify how simple daily tasks use energy; explain what greenhouse gases are and how these contribute to climate change; suggest ways to reduce our carbon footprint; describe why it is important to conserve water; use data to draw

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						conclusions and answer a question.
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Year 4	**States of Matter** 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	**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	**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.	**Electricity** Identify whether 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 a lamp lights in a simple series circuit. Recognise some common conductors and insulators, and associate metals	**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	**Animals including humans** Describe the simple functions of the basic parts of the digestive system in humans. Identify the different types of teeth in humans and their simple functions. Construct and interpret a variety of food chains, identifying producers, predators and prey (link to Rainforests)

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	evaporation with temperature.	sound source increases.		with being good conductors.	dangers to living things	

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Year 5	**Let's get moving 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.	**Out of this world 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 Learn also about Stephen Hawkings – St Albans Boys School Famous people linked to space- Research Emilio Herrera – Inventor of the first spacesuit. Learn about Zero 2 Infinity aerospace engineer Jose Mariano López-Urdiales	**Material World 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. 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	**Circle of Life Living things and their habitats** Describe the difference 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.	**Growing up and growing old Animals including humans** Describe the changes as humans develop to old age.	**Amazing Changes Properties and changes of materials** Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic Demonstrate that dissolving, mixing and changes of 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, including changes associated with burning

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			filtering, sieving and evaporating.				and the action of acid on bicarbonate of soda.
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Year 6	**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 microorganisms, plants and animals. Give reasons for classifying plants and animals based on specific characteristics.	**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. Use recognised symbols when representing a simple circuit in a diagram.	**Animals including humans** Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood. Recognise the impact of diet, exercise, drugs and lifestyle on the way their body functions. 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.	**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 lead to evolution.

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Spring 2 **Unit of work**