St Anne Line Catholic Infant School

Science Curriculum

Progression of Knowledge, Skills and Vocabulary

School Mission, Vision and Context

Mission Statement

With Jesus, We Love, We Learn, We Pray.
Together, we grow Our School each day.

Our Vision and Ethos

We aim to instil a love of learning, with Christ at the centre of all we do. Guided by the principle of 'En Magna Constantia'—In Great Constancy—we lay the foundation for a lifelong journey of discovery. We inspire resilience and independence in our learners, encouraging them to remain steadfast and always strive to reach their full potential, no matter the challenges they face.

Context of our school

Our school serves a rich and diverse school community where families come from many different cultures and speak a wide variety of languages. Our mission is to serve the families of Basildon who would like their children to receive a Catholic education.

This means in Science

- Many children start with a wide range of prior knowledge and experiences, with some having below average starting points in scientific understanding.
- We have a unique and diverse school community where pupils celebrate our similarities and differences, which enriches our learning in science.
- Our curriculum embraces and respects many different cultures and languages, encouraging curiosity about the natural world from diverse perspectives.
- Language development is integral to science learning; teachers provide strong support for all children, including those with SEND, to help them explore and explain scientific ideas.
- We nurture a sense of wonder about creation through our Catholic faith, allowing our faith to inspire and deepen our scientific learning.

Nursery
Understanding the World - The Natural World

2-3 years	3-4 years
Across the year, children develop awareness of the world around them. They explore and notice changes in nature and seasons, link personal experiences to play, and show curiosity about natural processes, plants, and materials.	Across the year, children develop curiosity and understanding of the natural world. They explore weather, seasons, plants, animals, and life cycles, investigate changes in materials, light, and forces, and learn to care for living things while observing growth and natural processes.

Reception
Understanding the World - The Natural World

EYFS Science is all about encouraging young children's natural curiosity about the world around them. At this stage, science is not taught as a separate subject but integrated through **exploration, play, and first-hand experiences**. The focus is on developing early scientific understanding through the **"Understanding the World"** area of learning.

What Children Will Learn

Exploring the Environment
Children begin to observe and describe the natural and physical world, noticing features like plants, animals, weather, and seasons.
Identifying Living Things
They learn to recognise animals, plants, and people as living things and begin to notice similarities and differences.
Materials and Objects
Children explore different materials (wood, metal, plastic) and their properties, often through sensory play (touching, feeling, sorting).
Changes and Growth
They start to understand basic life cycles (e.g. planting seeds and watching them grow) and notice changes in themselves and the environment.
Cause and Effect
Through play and experimentation, children explore how things work, developing early problem-solving and prediction skills.

How Children Learn Science in EYFS

- **Hands-on Exploration:** Using all their senses, children explore natural materials, plants, animals, and everyday objects.
- **Play-Based Learning:** Science is woven into play, whether indoors or outdoors, with activities like digging in the garden, observing bugs, or experimenting with water and sand.
- **Questioning and Talking:** Adults encourage children to ask questions, talk about what they see and do, and describe their discoveries.
- **Real-Life Experiences:** Visits to parks, farms, or nature walks help children connect with the natural world.
- **Observations and Simple Investigations:** Children might plant seeds, mix materials, or explore magnets, learning through watching, trying, and repeating.

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
The Natural World Children will know the names of body parts: shoulders, elbows, knees, ankles. Children will know and explore the 5 senses. Children will identify typical weather in Autumn.	**The Natural World** Children will identify and categorise different materials: plastic, metal, paper. Children will know what material a magnet picks up.	**The Natural World** Children will identify typical weather in winter and how we should dress. Children will understand that water can freeze and melt. Children will carry out an experiment to explore material strength and make a conclusion.	**The Natural World** Children will explore and talk about different animal habitats. Children will identify typical weather in Spring. Children will explore and identify objects that float and sink. Children will understand how ingredients change when we cook them.	**The Natural World** Children will plant seeds and care for growing plants. Children will observe changes and growth of sunflowers.	**The Natural World** Children will identify typical weather in Summer. Children will know that some animals can live underwater. Children will be able to identify the different seasons and what the environment looks like.

Vocabulary

Autumn	Spring	Summer
body shoulders elbows knees ankles senses see hear smell touch taste material plastic metal magnet	winter cold freeze melt ice water experiment strong weak habitat animal shelter spring float sink	seed plant grow roots stem flower water sunlight observe change summer season underwater ocean environment

Transition from EYFS to KS1			
Continuity of learning	Building on early experiences	Development of key skills	Cross-curricular links
Our bespoke curriculum aligns with the statutory EYFS (Reception) guidance. Key themes and skills introduced in EYFS (Reception) are revisited and developed further in KS1, ensuring continuity and progression. This transition is aided by the continuity of learning created by the curriculum strands, which run from EYFS to Year 2. Subject leaders can pinpoint how knowledge develops in EYFS (Reception) and how this creates the foundation for their learning in KS1.	Lessons build on curiosity, exploration and discussion, which are central to EYFS learning. As pupils move into Year 1, more structured activities are gradually introduced. In KS1, oracy, questioning and storytelling help pupils transition from informal to more formal subject-based learning.	The curriculum supports the progressive development of skills, such as observation, reasoning and problem-solving, which are introduced in EYFS and strengthened in KS1. Adaptive teaching strategies ensure all learners are supported as they transition to more formal learning approaches.	The curriculum aligns with EYFS Early Learning Goals, making links with communication and language, understanding the world and expressive arts to create a smooth transition. It promotes independence and confidence, supporting pupils as they adapt to the expectations of KS1 learning.

Science Long Term Plan						
Year Group	**Year 1**			**Year 2**		
Term	**Autumn 1 and 2**	**Spring 1 and 2**	**Summer 1 and 2**	**Autumn 1 and 2**	**Spring 1 and 2**	**Summer 1 and 2**
Areas of study and enquiry questions	Animals Planning Year 1 Sci... *How are animals different?*	Observing seasonal change Winter Planning Year 1 Scienc... *How do we know when winter has arrived?*	Plants Planning Year ... *What plants are around us and how can we find out*	Animals including humans Planning Year ... *What amazing changes do animals*	Uses of everyday materials Year 2 Spring 1 S... *What material is most suitable?*	Plants Year 2 Science s... *How does your garden grow?*

	Observing seasonal change Autumn Planning Year 1 Sci... *How do we know when autumn has arrived?*	Everyday Materials Planning Year 1 Scienc... *What materials are used in homes?*	*about them?*	*go through as they grow?*		
	Humans Planning Year 1 S... *How does my body know what's around me?*	Observing seasonal change and weather - spring *Planning Year 1 Scienc...* *How do we know when spring has arrived?*	Observing seasonal change Summer Planning Year ...	Living things and their habitats Planning Year ... *Where do animals live?*	Plant-based materials Year 2 Spring 2 S... *What does eco-friendly mean?*	

Working Scientifically Year 1 Children will develop a range of skills by working scientifically in each area of study however specific scientific methods, processes or skills are taught to ensure pupils are discreetly building that skill in a progressive way across key stage 1.						
Year Group	**Year 1**					
Term	**Autumn 1**	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
	asking simple questions and recognising that they can be answered	Use observations to compare and contrast using simple equipment	observing closely, using simple equipment Performing simple tests	Observing closely (looking and listening carefully)	Observe closely plants, trees, flowers and wildflowers. Identify and name different plants and trees.	

	in different ways observing closely, using simple equipment performing simple tests identifying and classifying using their observations and ideas to suggest answers to questions gathering and recording data to help in answering questions. There should also be opportunities to observe and describe weather associated with the seasons and how day length varies.	use their senses to compare different textures, sounds and smells. asking simple questions recognising that they can be answered in different ways There should also be opportunities to observe and describe weather associated with the seasons and how day length varies.	To identify and classify making tables and charts about the weather There should also be opportunities to observe and describe weather associated with the seasons and how day length varies.	Identifying signs of spring Sorting spring / not spring Recording what they see (drawing/chart or simple sentences) Answering the enquiry question using observations Using simple equipment (rain gauge) Measuring rainfall Comparing results	Compare plants by looking at what is the same and what is different. Use simple equipment such as magnifying glasses. Explore plants outdoors in the local environment. Use secondary sources (books, apps, identification sheets) to help name plants. Record observations using drawings or simple descriptions. Observing closely signs of summer (flowers, fruit, insects). Observing and describing weather in summer. Measuring temperature using a thermometer. Recording observations over time (weather, temperature, daylight). Using simple equipment such as a thermometer and clock.	

Science Curriculum Progression						
Year Group	Year 1					
Term and topic	Autumn 1 Animals including humans	Autumn 2 Living things and	Spring 1 Seasonal Changes	Spring 2 Everyday Materials continued	Summer 1 Plants	Summer 2 Plants continued

	Seasonal Changes (autumn)	their habitats	(winter) Everyday Materials	Seasonal Changes (spring		Seasonal Changes (summer)
Enquiry Question	*How are animals different?* *How do we know when autumn has arrived?*	*How does my body know what's around me?*	*How do we know when winter has arrived?* *What materials are used in homes?* *How do we know when spring has arrived?*		*What plants are around us and how can we find out about them?* *How do we know when summer has arrived?*	

What children should be taught					
	Pupils should be taught to: • 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) • identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. Pupils should be taught to: • To observe changes across the four seasons • To observe and describe weather associated with the seasons and how day length varies.	Pupils should be taught to: • identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. • identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals - **recap** Pupils should be taught to: • To observe changes across the four seasons • To observe and describe weather associated with the seasons and how day length varies.	Pupils should be taught to: • To observe changes across the four seasons • To observe and describe weather associated with the seasons and how day length varies. Pupils should be taught to: • 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.	Pupils should be taught to: • To observe changes across the four seasons • To observe and describe weather associated with the seasons and how day length varies.	Pupils should be taught to: • identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. • In addition, observe and describe the basic structure of a variety of common flowering plants, including trees. Pupils should be taught to: • To observe changes across the four seasons • To observe and describe weather associated with the seasons and how day length varies.

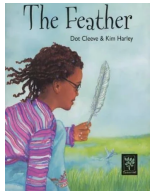
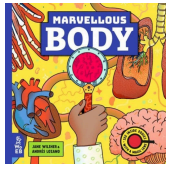
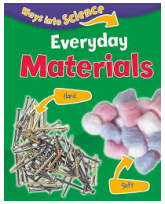
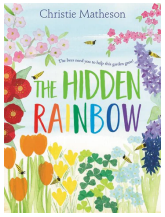
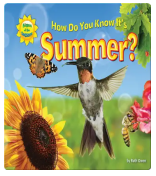
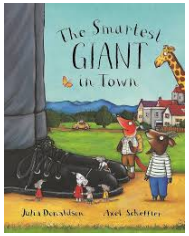
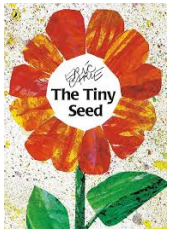
Sticky knowledge					
	Animals can be sorted into groups by their structure. Mammals have fur or hair and feed their babies milk. Birds have feathers, wings and beaks. Fish have scales, fins and gills. Amphibians have smooth skin and live on land and in water. Reptiles have dry, scaly skin and most lay eggs. There are four seasons. Autumn is in September, October and November. In autumn we see: leaves changing colours and falling from trees, conkers and pine cones. Autumn weather is often windy, rainy and cooler. Temperature tells us how hot or cold it is. A thermometer measures temperature.	Humans are animals, with hair on their bodies. Humans belong to the group called mammals. Body parts on the inside can include the heart, the lungs, the stomach and the brain. Different body parts do different jobs. Our senses help us see, hear, taste, smell and touch.	Winter is December, January and February. In winter deciduous trees lose their leaves but evergreen trees stay green. Winter weather is often cold, frosty, icy or snowy. Temperature tells us how hot or cold it is and is measured with a thermometer. Day length is shorter in winter, so it gets dark earlier. A clock can be used to record the time it gets dark. An object is a thing that is not alive. A material is what an object is made from. Some common materials are plastic, wood, metal, glass, water and rock. Different objects can be made from different materials. Some objects can be made from more than one material.	There are four seasons. Spring is in March, April and May. In spring we see: buds and blossom, flowers (e.g. daffodils), hear birdsong, new life (e.g. frogspawn) Spring weather is often mixed (rainy, windy, cloudy, sunny). A rain gauge measures rainfall in millimetres (mm).	Plants are living things. The main parts of a plant are roots, stem, leaves and flowers. Trees are plants and have roots, a trunk, branches and leaves. Some trees are evergreen and keep their leaves all year. Some trees are deciduous and lose their leaves in autumn. Some plants have flowers, but not all plants do. Flowers can be different colours, shapes and sizes and trees can have different leaves and shapes. Wildflowers grow naturally in the wild from seeds. A year has four seasons: spring, summer, autumn and winter. Summer happens in June, July and August. In summer flowers bloom and fruit grows on plants. Summer weather is often warm or hot and sunny. Day length is longer in summer, so it gets dark later.

Vocabulary	mammals amphibians reptiles fish birds fin, gills, scales eye, tail, bones, wing, claw, beak, cold/warm blooded, live young, eggs, lungs, spawn, hair/fur, spine, milk carnivore, herbivore, omnivore, structure season, autumn, observe, change, describe, weather, temperature, thermometer, forecast	mammal, human, senses, eyes, ear, tongue, skin, nose, range of common body parts.	season, winter, deciduous, evergreen, observe, describe, weather, temperature, thermometer, forecast, light, day length, time materials hard/soft; stretchy/stiff; shiny/dull; rough/smooth; bendy/not bendy; waterproof/not waterproof; absorbent/not absorbent; opaque/transparent, career, job, scientist, investigate, properties, clothes, safe	daylight, temperature, celsius, weather, autumn, summer, winter rain, snow, cloud, sunshine, wind, thunderstorm, hail, snow, weather, rain gauge, measure season, spring, observe, change, describe	Plant, flower, tree , observe, identify, roots, trunk, stem, common, wildflower, branches, leaves, deciduous, evergreen, garden, plant, weed season, summer, change, flowers, observe, weather, temperature, thermometer, light, day length, time

Working Scientifically Year 2 Children will develop a range of skills by working scientifically in each area of study however specific scientific methods, processes or skills are taught to ensure pupils are discreetly building that skill in a progressive way across key stage 1.						
Year Group	**Year 2**					
Term	**Autumn 1**	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
	observing, through video or first-hand observation and measurement asking questions suggesting ways to find answers to their questions. Observing closely (looking and listening carefully) Identifying signs of autumn Sorting spring / not autumn Recording what they see (drawing/chart or simple sentences) Answering the enquiry question using observations Using simple equipment (thermometer) Measuring temperature Comparing results	Sort and group things into: • Living • Dead • Never alive Record findings in simple ways (charts, pictures, labels). Explain reasoning Explore tricky questions, e.g.: "Is a flame alive?" "Is a tree dead in winter?" Make simple food chains (e.g. grass → cow → human). Describe conditions in different habitats Find out how habitat conditions affect the number and types of living things.	Observing closely changes in winter (trees, weather, daylight). Using simple equipment (thermometer and clock). Recording observations (weather, temperature, when it gets dark). Comparing over time (winter vs other seasons, months in winter). Using observations to answer questions about winter. Ask simple questions. Perform simple comparative tests. Observe closely. Gather and record data. Use data to answer questions.	Ask simple questions. Perform simple tests. Observe closely using simple equipment. Gather and record data. Use observations to suggest answers to questions.	observing and recording, with some accuracy, setting up a comparative test, asking and answering questions, recording findings and explaining and justifying	

Year Group	Year 2					
Term and topic	**Autumn 1** **Animals including humans**	**Autumn 2** **Living things and their habitats**	**Spring 1** **Uses of every day materials**	**Spring 2** **Uses of every day materials (sustainability)**	**Summer 1** **Plants**	**Summer 2** **Plants**
Enquiry Question	*What amazing changes do animals go through as they grow?*	*Where do animals live?*	What material is most suitable?	What does eco-friendly mean?	*How does your garden grow?*	
What children should be taught	Pupils should be taught to: • 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.	Pupils should be taught to: • 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 microhabitats	Pupils should be taught to: • Identify and compare the suitability of everyday materials for particular uses. • Find out how the shapes of solid objects can be changed. • Recognise that some materials are harmful to the environment. • Identify and compare the uses of different materials.	Pupils should be taught to: • Identify and compare the suitability of everyday materials for particular uses. • Find out how the shapes of solid objects can be changed. • Identify and classify materials. • Identify and name a variety of plants and describe what plants need to grow.	Pupils should be taught to: • 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.	

		• 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.			
Sticky knowledge	Animals, including humans, have babies (offspring) that grow into adults. Animals go through a life cycle as they grow. All animals need food, water, and air to survive. Humans need different types of food to stay healthy. Exercise helps keep our bodies strong and healthy.	Living things are alive and need food, water, and air. Some things are dead or have never been alive. A habitat is where living things live. Living things depend on each other. We can sort and group living things I know what a food chain is. Food chains show who eats what	Materials have different uses. Some materials are more suitable to use than others. The shape of some solid objects can be changed. The strength of some materials can be changed. Some materials are harmful to the environment.	Materials have different properties (strong, waterproof, flexible). Reduce, reuse and recycle help protect the environment. Natural materials come from living things. Human-made materials are made by people. Plants need light, water and warmth to grow. Suitable materials are chosen based on their properties.	Seeds and bulbs contain energy stored inside. Seeds need water and warmth to germinate. Plants need light for healthy growth. I can describe the stages of a plant life cycle. I know how to make a plant grow healthy and strong.
Vocabulary	life cycle, grow, change, survive, needs, offspring, parent, baby, adult, similar, different, toddler, child, teenager, elderly, stages, larva, pupa, diagram, sequence, label, order, air, water, food, shelter, healthy, develop, mature	living, non-living, dead, alive, food, water, air, growth, movement, senses, habitat, micro-habitat, environment, shelter, animal, plant, depend, food chain, sort, observe, compare, group, classify	material, property, suitable, elastic, stretch, squash, twist, object, plastic, metal, opaque, wood, fabric, flexible, transparent, block graph	eco-friendly human-made life- processes flexible natural dead alive recycle reuse reduce properties suitable (recap of previous materials vocab)	germination seeds bulbs flower root light life cycle magnifying glass comparative test growth energy shoot observe

Book Links						
Year Group	Year 1			Year 2		
Term	Autumn	Spring	Summer	Autumn	Spring	Summer
Book Links	  	 	  	 	 	
Knowledge Organisers	Animals Year 1 Scienc... Humans Year 1 Scienc...	Materials Year 1 Science S... Seasons & Weather Year 1 Science S...	Plants Year 1 Scien...	Animals including humans Year 2 Science Au... Living things and their habitats Year 2 Science Au...	Materials Year 2 Science Sp... Plant-based materials Year 2 Science Su...	Plants Year 2 Science Su...

Learning Journeys						
	Year 1 animal...	Year 1 everyday... Year 1 seasons ...		Year 2 Science Ani... Year 2 living thin...	Year 2 Use of ever... Year 2 plant base...	Year 2 Plants.png
Curriculum Links	RE PSHE PE	Art English	English	English PSHE PE	DT	English Geography

Significant individuals

Year 1

Sir David Attenborough - Natural scientist and Conservationist. Sir David Attenborough has discovered many previously unknown animals, studied animal behaviour and enabled people to understand the impact of our behaviour on animals.

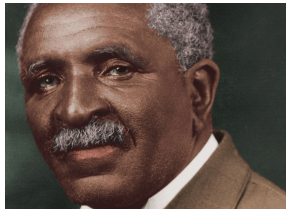
Leo Baekeland - Chemist, Inventor of plastic. Inventor of Bakelite in 1907, an inexpensive, non-flammable and versatile plastic, which marked the beginning of the modern plastics industry.

Dr Marie Clark Taylor - Botanist who investigated the blooming of flowers. She discovered plants have light receptors which determine day length; therefore season and bud/bloom accordingly.

Year 2

Sir David Attenborough - Natural scientist and Conservationist. Sir David Attenborough has discovered many previously unknown animals, studied animal behaviour and enabled people to understand the impact of our behaviour on animals.

In 1976 Wangari Maathai began to promote the planting of trees. The goal was to prevent deforestation (removal of bushes and trees). In 1977 she founded the Green Belt Movement, a group for planting trees, in Kenya. Since then, more than 40 million trees have been planted across Kenya. Women planted most of these trees.



George Washington Carver - Botanist "the plant doctor" studied the importance of nutrients in soil for healthy plant growth. Responsible for discovering the need for crop rotations and the valuable nutrients from crops of soybeans, peanuts and sweet potatoes in replenishing the quality of soil for other crops to then be planted there after.

	 John McAdams was a Scottish engineer born in 1756 who changed the way roads were built. He noticed that roads were often muddy, uneven and difficult to travel on. He developed a new method of road construction using layers of small crushed stones pressed tightly together to create a smooth, strong surface. His design, called *macadam*, became the basis for modern road building and is still used in today's tarmac roads.