







Science at The Nethersole CofE Academy Primary School

**To be light (living in our community and reaching out beyond it)
bringing out the God-colours in the world.'**

*Jesus said, 'You're here to be light, bringing out the God-colours in the
world.'* **Matthew 5:16**

HOPE	COMMUNITY	DIGNITY & RESPECT	FORGIVENESS	WISDOM	THANKFULNESS
					

Summer 2025

Intent -

Our curriculum intent at The Nethersole CofE Academy is to provide a broad, exciting, and challenging curriculum of the highest quality for the children in our care; encouraging, motivating and ensuring all children develop a love of learning, to achieve their full potential.

Vision -

The Nethersole Church of England Academy Primary School and Nursery has a Christian foundation that inspires its life and work. Following the teaching of Jesus, we accept the challenge - *'to be light [living in our community and reaching out beyond it], bringing out the God-colours in the world.'* Matthew 5:16

At the heart of our school is the belief that everyone is a child of God, fearfully and wonderfully made in his image. Our work therefore is to nurture and love every individual, child and adult, to find and develop their gifts, overcoming barriers and growing in confidence to **flourish** - to let their light shine as the very best God version of themselves. Effective teaching and learning underpin this. We wish to inspire everyone to take responsibility for creation, civilisation, and the well-being of each other, embracing and treasuring our differences.

Our Christ led vision is for a world of justice, respect, and love, and of people who are not afraid to love and sacrifice themselves for others. Our inspiration is Jesus, who loves us in sacrifice, forgives us and reminds us that we each have something special to do to bring out the God colours of the world. We believe that there is a space for everyone to shine brightly and differently and that this adds to the richness of our school family, our community and the wider world.

Our Christian Vision for everyone to be unique shining lights in God's world is illuminated by our biblically based **Christian Values** that we learn to radiate in our daily lives - in our attitudes, relationships, behaviour, choices and decisions.

Curriculum Design -

Our curriculum is ambitious for our children and is based on the National Curriculum. Nevertheless, we recognise that this is the minimum entitlement for our children. Each subject is taught as a discrete discipline. Whilst developing our curriculum, links were considered very carefully to build on knowledge and skills within each subject, across the school and across subjects. We also carefully considered our local context, diversity, environmental awareness and health education when designing our curriculum.

The 4R's The Nethersole CofE Academy Primary School encourages children to display the following positive learning behaviours -

Resilient Learners - Children persevere, and they do not give up, even when a task is difficult.

Responsible Learners - Children will have their equipment ready, reading books and reading diaries in school daily. Tables tidy and organised.

Resourceful Learners - Children will use their previous learning to support their new learning. They will utilise working walls and choose appropriate equipment.

Respectful Learners - Children show kindness to all and illustrate good manners to all.

What is Science?

EYFS Definition – In EYFS, Science is embedded within Understanding the World. It involves giving children opportunities to explore, observe, and investigate the natural and made world around them. Through hands-on experiences, children notice patterns, talk about changes, and develop early scientific thinking as they make sense of their environment.

KS1 Definition –

Science gives us knowledge and understanding of the universe that we find out by doing experiments. People trained in **science** are called scientists. Key Stage 1 focuses on enabling pupils to experience and observe phenomena, encouraging curiosity and questioning about the world around them. Pupils engage in various types of scientific enquiry, including observation and classification.

KS2 Definition -

Science is a means of improving our knowledge and understanding of the universe based on the collection of observation-based evidence. In school, you will complete **science** experiments to gather this evidence. People trained in **science** are called scientists. Key Stage 2 builds on the foundations laid in Key Stage 1, with an emphasis on developing a deeper understanding of scientific concepts and processes. Pupils are encouraged to use scientific language and engage in practical; experiences.

A high-quality science education provides the foundations for understanding the world through the specific disciplines of biology, chemistry and physics. Science has changed our lives and is vital to the world's future prosperity, and all pupils should be taught essential aspects of the knowledge, methods, processes and uses of science. Through building up a body of key foundational knowledge and concepts, pupils should be encouraged to recognise the power of rational explanation and develop a sense of excitement and curiosity about natural phenomena. They should be encouraged to understand how science can be used to explain what is occurring, predict how things will behave, and analyse causes (DfE 2013)

The **national curriculum** for Science aims to ensure that all pupils:

- ✓ Develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics
- ✓ Develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer specific questions about the world around them
- ✓ Are equipped with the scientific knowledge required to understand the uses and implications of science today and in the future

Science Intent -

The overarching aim for Science at the Nethersole CofE Academy is to ensure that all pupils:

- Will be familiar with the three disciplines of science, which include biology, chemistry and physics as they progress through their school journey.
- Will have a rich and varied exposure to scientific vocabulary, where the children are encouraged to use and apply within and across other subjects.
- Are encouraged to ask questions and be curious about the world around them.
- Share their curiosity with their local and wider community through collaboration during scientific investigations.
- Have the courage to test any theories or ideas they have within each unit of science.
- Are confident using the scientific skills of researching, asking questions, making predictions, observing, recording data and evaluating.
- Will use their knowledge and creativity to inform their decisions on how they represent their data and how this data may influence future investigations.

-Build independence within their own subject knowledge of science and conducting experiments and investigations.

-Can make links between previous units within the science subject but also alongside other curriculum areas.

Science Implementation -

Whole School Long Term Plan -

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
EYFS Nursery	Seasonal Changes Identifying parts of the body	Seasonal Changes Light and Dark Nocturnal animals	Seasonal Changes Floating and Sinking Changes in materials Hibernation	Seasonal Changes Animal habitats Keeping healthy Plant Growth	Seasonal Changes Animals and lifecycles	Seasonal Changes
EYFS Reception	Seasonal Changes Identifying parts of the body and exploring senses Human growth	Seasonal Changes Light and Dark	Seasonal Changes Changes in materials- freezing and melting	Seasonal Changes Plant growth Keeping healthy	Seasonal Changes Minibeasts and habitats	Seasonal Changes Animals that live in the ocean
Year 1 / 2 Cycle A	Biology Animals including Humans	Chemistry Uses of Everyday Materials	Physics Seasonal Changes – Solar System	Biology Mini Beasts and Lifecycles	Biology Plant Growth – Trees and the Environment	Biology Food Chains and Habitats
Year 1 / 2 Cycle B	Famous Scientists Stephen Hawking (Physicist) Rachel Carson (Biologist)	Biology Animals including Humans – Staying Healthy	Physics Seasonal Changes	Chemistry Everyday Materials	Physics Seasonal Changes	Biology Plants
Year 3 / 4 Cycle A	Biology Living Things and Their Habitats – Food Chains – the Ocean	Chemistry Fossils, Rocks and Soils	Physics Light and Shadows	Biology Plants	Physics Forces and Magnets	Biology Nutrition and Digestion
Year 3 / 4 Cycle B	Famous Scientists Ava Lovelace (Physicist) Garrett Morgan	Biology Animals including Humans – Skeletons and Muscles	Physics Electricity	Chemistry States of Matter and the Water Cycle	Physics Sound	Biology Living Things and Their Habitats – Food Chains – the Desert
Year 5 / 6 Cycle A	Biology Living Things and their Habitats - Classifying Plants	Chemistry Properties of Materials	Physics Forces and Gravity	Biology Micro Organisms	Chemistry Fossils	Biology Lifecycles of Animals including Humans

	and Animals					
Year 5 / 6 Cycle B	Famous Scientists Alice Ball (Chemist) Marie Maynard Daly (Chemist)	Biology Animals including Humans – The Circulatory System	Physics Electricity	Chemistry Changes of Materials	Physics Earth, Space and Light	Biology Evolution and Inheritance

Examples of Links -

- **Science – Seasonal Changes and Geography – Seasons and Weather Patterns -**

In Science and Geography, children consider the seasons and the recognising the changes between the seasons.

(Vertical Link – small steps within year groups or classes.)

- **Science – Seasonal Changes -**

In EYFS the children begin to recognise the seasons and the weather that can be associated with each season. In Key Stage 1 the children learn about the changes that occur between the seasons and the adaptations that animals make across the seasons.

(Horizontal Link – same subject across the whole curriculum.)

- **Science – Plants -**

Pupils begin in Year 1 with growing seeds and discovering the conditions that plants require to grow. In Year 3 they understand the functions of the different parts of a plant and consider how water is transported in a plant. In Year 5 pupils classify plants and learn about the reproductive process of a plant.

(Horizontal Link – same subject across the whole curriculum.)

- **Science – Lifecycles of Animals including Humans (Year 5 / 6) linked to PSHE – Human / Physical Features (KS1)**

Caves – physical features of a landscape, natural materials used to paint artwork, early settlement.

Human features – shelters, tools.

(Diagonal Link – between subjects – how learning something in one subject supports the children to learn something similar in another subject.)

Science Impact -

At the beginning of each unit, the medium-term plans include a checklist for teachers to assess whether children can recall prior key knowledge and skills.

At the beginning of every lesson thereafter, the children answer questions based on learning from the previous lessons. Children are supported to build a foundation of factual knowledge by encouraging recall of key facts and vocabulary.

Questioning and pupil dialogue are an integral part of sessions; example questions and possible answers are included in medium term plans.

Assessment is further supported by pupil voice, photographs of outcomes, and work samples, providing a well-rounded picture of each child's development in Science.

To assess if the children are committing knowledge to long term memory, we use an '**interrupting the forgetting**' strategy which will include reinforcing links to previous learning both within and across the year groups and subjects and exposing children to reading books that link to previous learning during English and story time.