The Nethersole CofE Academy
Science Curriculum

Jesus said, ‘You’re here to be light, bringing out the God-colours in the world.’ Matthew 5:16
(The Message)

The Nethersole CofE Academy Vision and Values

'Let Your Light Shine'

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.

Hope	Community	Dignity and Respect	Forgiveness	Wisdom	Thankfulness
					

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.

Implementation

Our curriculum will be implemented through knowledge-led experiences, enabling the children to increase their knowledge, learn and master new skills and therefore, deepen their understanding in a wide range of subjects.

Impact

The impact of this broad, exciting, and challenging curriculum is to inspire and motivate the young people in our care to become lifelong learners. We also provide a Christian community to enable all to value faith. All pupils are encouraged to be proud of their own culture, religion and language and show respect to those of others.

Our Vision

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***

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 of 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.

Science 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	**Biology** Living Things and Their	**Chemistry**	**Physics**	**Biology**	**Physics**	**Biology**

Cycle A	Habitats – Food Chains – the Ocean	Fossils, Rocks and Soils	Light and Shadows	Plants	Forces and Magnets	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 and Animals	**Chemistry** Properties of Materials	**Physics** Forces and Gravity	**Biology** Micro Organisms	**Chemistry** Fossils	**Biology** Lifecycles of Animals including Humans
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

The Nethersole C of E Academy and Nursery

BDMAT Birmingham Diocesan Academies Trust

Subject Name **Long Term Plan with Values**

	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	**Biology** Living Things and their	**Chemistry**	**Physics**	**Biology**	**Chemistry**	**Biology** Lifecycles of Animals

Cycle A	Habitats - Classifying Plants and Animals 	Properties of Materials 	Forces and Gravity 	Micro Organisms 	Fossils 	including Humans 
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 

Definition

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.

Subject Name **overview adapted from the NC Purpose & Aims**

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

Purpose of Study
A strong science education gives children the foundation they need to understand the world around them through the key areas of biology, chemistry, and physics. Science has transformed our lives and is essential for the future success of society, so every child should learn the core knowledge, skills, and practical applications of science. By developing a solid base of important ideas and concepts, pupils can appreciate the value of logical thinking and grow a sense of wonder and curiosity about the natural world. They should learn how science helps us explain what happens, predict outcomes, and explore causes.

Scientific Knowledge and Conceptual Understanding -
The National Curriculum programmes of study for Science outline a progression of knowledge and concepts. While moving forward is important, pupils must develop a secure understanding of each key block of knowledge before advancing to the next stage. Without this solid foundation, progress will be superficial, leading to misconceptions and difficulties and making higher-level content harder to grasp.
Pupils should be able to describe processes and key features in everyday language, but they also need to use scientific terminology accurately and confidently.

The Nature, Processes and Methods of Science
'Working scientifically' sets out the understanding of the nature, processes, and methods of science for each year group. It should not be taught as a separate strand but integrated within the study of biology, chemistry, and physics. This can be achieved through focusing on the key features of scientific enquiry so that pupils learn to use a range of approaches to answer meaningful scientific questions. These approaches include observing over time, pattern seeking, identifying, classifying and grouping, comparative and fair testing (controlled investigations), and researching using secondary sources. Pupils should seek answers by collecting, analysing, and presenting data.

Spoken Language -
The science National Curriculum recognises the vital role of spoken language in pupils' development across the entire curriculum—supporting cognitive, social, and linguistic growth. The quality and range of language that pupils hear and use are crucial for building scientific vocabulary and expressing scientific ideas clearly and accurately. Pupils should be supported in making their thinking explicit, both for themselves and for others. Teachers will use discussion as a tool to strengthen understanding, address misconceptions, and ensure pupils develop secure foundations in scientific learning.