



Science Curriculum Implementation



Statement of intent

At Barkisland C of E (VA) Primary School, we believe science should engage, inspire and challenge all children. Our science curriculum develops curiosity about the world while equipping pupils with the knowledge and skills to think and work like scientists.

We ensure that all children access high-quality science learning that is inclusive, practical and enquiry-based. Pupils are encouraged to ask questions, explore ideas, and investigate scientifically. Through carefully planned progression, children develop both scientific knowledge and procedural understanding of how science works.

Our curriculum promotes:

curiosity and questioning

practical investigation

scientific vocabulary development

links with real-world contexts

confidence in explaining scientific ideas

Science learning builds progressively from EYFS to Year 6 so that pupils deepen their understanding each year while revisiting and strengthening prior learning. Enrichment opportunities such as National Science Week, themed days and STEM activities further enhance engagement and provide memorable learning experiences.

Schemes of work

Science teaching is based on the **National Curriculum (2014)** and is supported by the **Plymouth Science Scheme of Work**, which provides clear progression in both substantive knowledge and working scientifically skills.

The scheme ensures that:

- knowledge builds logically across year groups
- key vocabulary is explicitly taught and revisited
- children develop enquiry skills progressively
- assessment opportunities are embedded throughout units

Working scientifically skills are developed across:

- KS1
- Lower KS2
- Upper KS2

Children learn to:

- ask scientific questions

- plan and carry out investigations
- observe and measure carefully
- record and present findings
- draw conclusions and evaluate results.

Curriculum content

At Barkisland, we follow the National Curriculum programmes of study. Scientific knowledge is organised into clearly sequenced topics which ensure coverage and progression across the school.

EYFS

Children explore scientific ideas through **Understanding the World**, including:

- people and communities
- the natural world
- materials and change
- plants and animals
- seasonal changes.

Learning is practical, exploratory and play-based, encouraging children to observe, question and describe the world around them.

Key Stage 1

Year 1

- Perfect Plants
- Amazing Animals
- Marvellous Materials
- Sensational Seasons

Year 2

- Perfect Plants
- Amazing Animals
- Marvellous Materials
- Living Things and their Habitats

Children begin to develop early scientific skills such as observing closely, identifying and classifying, and asking simple questions.

Key Stage 2

Year 3

- Perfect Plants
- Amazing Animals
- Radiant Rocks
- Luminous Light
- Fabulous Forces

Year 4

- Living Things and their Habitats
- Animals including Humans
- Marvellous Materials
- Super Sounds
- Excellent Electricity

Year 5

- Living Things and their Habitats
- Animals including Humans
- Marvellous Materials
- Earth and Space
- Fabulous Forces

Year 6

- Living Things and their Habitats
- Animals including Humans
- Evolution and Inheritance
- Luminous Light
- Excellent Electricity

Each year builds on prior learning, allowing children to deepen their understanding and use increasingly precise scientific vocabulary.

Teaching and Learning

Science teaching at Barkisland is **practical, enquiry-led and discussion rich**.

Teachers encourage children to:

- ask their own scientific questions
- make predictions
- test ideas through investigation
- work collaboratively
- explain their thinking.

Lessons include a range of strategies such as:

- practical investigations
- scientific discussions
- research using non-fiction texts and digital resources
- observational work
- diagram labelling and scientific writing.

Children use a variety of resources including:

- practical equipment
- magnifying glasses and scientific tools
- non-fiction books
- diagrams and models
- iPads and digital research tools.

Across the school, children engage in activities such as:

- plant dissection
- habitat research
- collaborative investigations
- data collection and recording
- shadow experiments and fair tests.

These approaches enable pupils to develop both scientific knowledge and the skills needed to work scientifically.

Developing Scientific Enquiry

A key focus of science teaching at Barkisland is developing pupils' ability to **ask meaningful scientific questions**.

As children progress through the school, their questioning becomes more sophisticated.

For example:

- **Year 1:** identifying and classifying animals
- **Year 3:** exploring natural processes such as seed dispersal
- **Year 4:** beginning to consider variables in investigations
- **Year 6:** planning fair tests and controlling variables

This progression supports deeper understanding and encourages children to think critically and independently.

Record of pupils' work

Children record their science learning in a variety of ways including:

- written explanations
- labelled diagrams
- tables and charts
- investigation write-ups
- annotated drawings
- photographic evidence of practical work.

Learning is recorded in **science books and class floor books**, with photographs and additional evidence stored digitally.

Displays within classrooms and around school celebrate scientific learning and vocabulary.

Assessment

Science assessment at Barkisland includes both **formative and summative approaches**.

Formative Assessment

Teachers assess learning throughout lessons through:

- questioning and discussion
- observation during investigations
- mini-plenaries and exit tasks
- concept cartoons and discussion starters
- pupil voice activities.

These strategies allow teachers to identify misconceptions and adapt teaching to support understanding.

Summative Assessment

At the end of units, teachers use:

- quizzes and knowledge checks
- written explanations
- annotated diagrams
- investigation outcomes.

Teacher judgements are recorded using the school's **science tracking system**, with pupils assessed as:

- Working Towards
- Expected
- Greater Depth.

Digital tools such as **Google Forms** are also used to support assessment and retrieval practice.

Cross curricular

Science learning is enriched through meaningful links with other subjects.

Examples include:

English

- non-chronological reports
- explanation texts
- research and note taking
- scientific vocabulary development.

Maths

- data tables
- graphs and charts
- measuring and recording results.

Art and DT

- modelling habitats
- exploring materials and structures
- food technology linked to changes in materials.

Computing

- research using digital sources
- recording investigations
- presenting findings.

Whole School Events

- National Science Week
- Earth Day
- environmental awareness projects.

These links help children apply scientific knowledge in different contexts and deepen their understanding.

Enrichment

Science is further enhanced through a range of enrichment opportunities including:

- **National Science Week**
- STEM activities
- themed days
- school projects
- visits and visitors.

Children may also work with **STEM ambassadors** who bring specialist knowledge and equipment into school to inspire pupils and show real-world applications of science.

Additional opportunities such as cooking sessions with the school cook provide practical experiences linked to scientific concepts such as **changes in materials**.

These activities broaden pupils' experiences and strengthen enthusiasm for science.