Bracken Hill School

Science Policy

Author: Mrs Drabble

Policy Type: Whole School

This policy is reviewed biennially to ensure compliance with current regulations

Introduction

Science in our special school is built around one core belief that every student, regardless of need or ability, deserves access to a high-quality, engaging, and meaningful science curriculum that fosters curiosity, understanding, and a connection to the world around them.

We recognise that the traditional national curriculum does not fully meet the diverse needs of our cohort. Therefore, our science curriculum has been entirely re-designed, intentionally modified, and carefully mapped to ensure it is ambitious, accessible, and meaningful for all students.

The curriculum is structured into three distinct phases, each designed to meet students where they are in their learning journey and provide them with appropriate levels of challenge, knowledge, and skill development.

1. Policy Purpose and Responsibilities

This policy outlines the vision, delivery, organisation, and monitoring of Science at Bracken Hill School. Science is a core subject within our curriculum, and all pupils are entitled to high-quality, engaging, and meaningful scientific learning experiences.

Responsibility for implementation lies with the Science Lead, supported by the Head of School. All staff teaching science receive guidance, training, and ongoing support from the Science Lead.

The purpose of this policy is to ensure:

- A consistent and coherent approach to science teaching
- High standards across all phases
- A curriculum that meets the diverse needs of all learners
- Compliance with statutory expectations and best practice in SEND education

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2. Rationale and Vision for Science

Our curriculum intent at Bracken Hill School is to enhance knowledge, develop skills and provide enriching experiences that enable our young people to embrace opportunities and be successful in the modern world.

In Science our core belief is that every pupil, regardless of need or ability, deserves access to an ambitious, engaging, and meaningful science curriculum that fosters curiosity, understanding, and connection to the world around them.

Our pupils present with a wide range of cognitive, sensory, physical, and communication needs. The traditional National Curriculum alone does not meet this diversity. Therefore, we have:

- Re-designed, adapted, and sequenced our curriculum
- Ensured accessibility through multisensory, practical, and experiential learning
- Embedded progression across all phases
- Prioritised real-world application and preparation for adulthood

The curriculum is delivered in three phases, enabling a personalised and developmental approach.

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3. Curriculum Structure

3.1 Overview of Phases

Phase 1 – Early Exploration (KS1–2, NC Y1–3)

- Sensory science and practical exploration
- Understanding cause and effect
- Early scientific vocabulary
- Encouraging curiosity and engagement with the world

Phase 2 – Developing Understanding (KS3, NC Y4–6)

- Structured enquiry and early scientific method
- Growing scientific vocabulary
- Understanding concepts in materials, forces, living things, and Earth/space

Phase 3 – Functional Science and Accreditation (KS4)

- AQA Unit Awards (Pre-Entry to Entry Level)
- Life skills linked to scientific ideas
- Focus on independence, safety, and real-life science
- Practical knowledge for adulthood (e.g., hygiene, electricity, sustainability)

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4. Curriculum Design and Mapping

Our science curriculum is:

- Sequenced to ensure logical progression of knowledge and skills
- Coherent, with concepts revisited to deepen understanding
- Driven by big questions, such as:
    - *Why do some materials float?*
    - *How do objects move?*
    - *What does my body need to stay healthy?*
- Rooted in working scientifically, including observing, predicting, questioning, testing, comparing, and concluding

Each phase includes:

- Clear learning overviews
- Measurable outcomes
- Planned opportunities for practical, sensory, and real-world learning

Curriculum mapping is reviewed annually and updated based on pupil needs, staff feedback, and quality assurance outcomes.

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5. Responding to a Changing Cohort

Our student population has evolved to include:

- Increasingly complex communication needs
- A wider range of cognitive profiles
- Greater sensory and physical needs

To ensure accessibility, we embed:

- Differentiated practical activities (simplified or extended as needed)
- Flexible outcomes (verbal, symbolic, written, photographic, or practical)
- Highly visual and sensory learning opportunities
- Use of AAC, symbols and gesture

This flexibility ensures every pupil can access and succeed in science.

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6. Bracken Hill School Vision: Enjoy, Achieve, Believe

Our science curriculum is firmly rooted in Bracken Hill's Vision:

- Enjoy – engaging, hands-on learning that inspires curiosity
- Achieve – clear progression and recognition of success
- Believe – developing confidence, resilience, and independence

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7. Aims and Intent

The science curriculum at Bracken Hill School aims to provide an engaging, accessible, and meaningful learning experience that develops scientific understanding, practical skills, and curiosity while preparing pupils for adulthood, further learning, and real-life application.

Our curriculum seeks to:

Develop Scientific Understanding and Skills

- Build knowledge of biological, chemical, and physical concepts
- Teach pupils to observe, question, investigate, record, and evaluate
- Ensure safe and confident use of scientific equipment and technology

Foster Curiosity and Engagement

- Encourage exploration through multisensory, hands-on learning
- Promote independent enquiry and problem-solving
- Make meaningful links to everyday life and global issues

Ensure Inclusivity and Accessibility

- Deliver science that all pupils can meaningfully access
- Use personalised approaches and varied communication methods
- Celebrate diversity in learning and response styles

Promote Personal and Social Development

- Develop communication, teamwork, and collaboration
- Encourage resilience, confidence, and responsibility
- Promote respect for living things and awareness of environmental impact

Prepare Pupils for Future Opportunities

- Highlight science in daily life and future pathways

- Build transferable skills relevant to independent living
- Provide accreditation opportunities, including AQA Unit Awards and Entry Level Science

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8. Entitlement

All pupils at Bracken Hill:

- Have full access to a science curriculum adapted to their developmental needs
- Learn through hands-on, sensory-rich experiences
- Engage in exploration, enquiry, and practical investigation

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9. Implementation

Curriculum Delivery

Science is delivered across phases as follows:

- EYFS: Understanding the World
- Phase 1: Sensory, practical exploration of fundamental concepts
- Phase 2: Developing enquiry and scientific understanding
- Phase 3: Functional science with accreditation pathways

Sequences are planned to build on prior knowledge and ensure progression.

Teaching Approaches

- Multisensory and Practical Learning
- Enquiry-Based and Problem-Solving Approaches
- Differentiation and Scaffolding
- Collaborative Learning
- Use of ICT and Technology

Cross-Curricular Links

Science links with:

- Maths: data, measurement
- English: scientific vocabulary, communication

- DT: materials, properties, application
- PSHE: health, hygiene, safety

Inclusion

Lessons are adapted for physical, sensory, cognitive, and communication needs.

Assessment for Learning

Assessment includes:

- Formative observation and questioning
- Practical and recorded evidence
- Use of the Bracken Hill Science Assessment Framework
- AQA Unit Award criteria (Phase 3)
- Moderation for consistency
- SOLAR for tracking

Accreditation

Phase 3 pupils access AQA Unit Awards at appropriate levels.

Practical Experiences and Fieldwork

Experiential learning includes experiments, outdoor learning, and educational visits.

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10. Impact

We evaluate impact through pupils':

Knowledge and Understanding

- Broad understanding of key scientific ideas
- Ability to apply knowledge in real-life situations

Scientific Enquiry and Skills

- Ability to observe, measure, record, analyse, and conclude
- Increasing independence and confidence in scientific activities

Engagement and Enthusiasm

- Active participation and curiosity
- Motivation through hands-on learning

Personal Development

- Improved communication, teamwork, and resilience
- Respect for living things and the environment

Progression and Accreditation

- Clear progression EYFS → KS4
- Achievement recognised through AQA Unit Awards and Entry Level Science

Preparation for the Future

- Development of transferable life skills
- Increased independence and problem-solving ability

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11. Health and Safety

- All activities follow CLEAPSS guidance and Hazcards
- Risk assessments are completed for all practical work
- Pupils are taught safe equipment use
- PPE is provided where necessary

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12. Parental Involvement

We encourage parents and carers to support science learning by:

- Engaging with science-linked home activities
- Participating in enrichment, visits, and investigations
- Reinforcing real-world science experiences

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13. Resources

- Specialist equipment and materials
- Use of everyday objects to support practical learning
- Access to outdoor spaces and field trips

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14. Equal Opportunities

Science is planned and delivered to ensure equal access for all pupils, regardless of gender, background, culture, or ability. Reasonable adjustments are made to remove barriers to learning.

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15. Review Procedures

- Long-term planning and sequences are reviewed annually by the Science Lead and Phase Leaders
- Outcomes inform the annual Science Action Plan
- Policy reviewed annually

Appendices

Appendix A: Phase 1 Topic Overview
Appendix B: Phase 2 Topic Overview
Appendix C: Phase 3 AQA Unit Award Sets

Appendix A – Phase 1 Programme of Study (KS1–2, NC Years 1–3)

Curriculum Focus

- Practical exploration
- Simple classification
- Sensory investigation
- Observing change, pattern, and cause and effect
- Introducing early scientific vocabulary

Phase 1 Topics

- Who am I?
- Let There Be Light
- Why Do We Eat?
- Shape Shifters
- What Is It Used For?
- Changing Seasons
- 3, 2, 1… Blast Off!
- Power Up!
- Sounds Good
- Amazing Bodies
- Roots to Shoots
- Wild and Wonderful
- Building Blocks
- Move It!
- From Seed to Stem
- Magic Materials
- Slip, Grip and Stay Afloat!
- Who Eats Who?
- Fuel for Life
- Alive and Kicking

Appendix B – Phase 2 Programme of Study (KS3, NC Years 4–6)

Curriculum Focus

- Developing scientific understanding
- Introducing structured enquiry
- Applying early scientific method
- Using increasingly precise vocabulary
- Exploring more complex scientific concepts

Phase 2 Topics

- Materials World
- Surviving the Threats
- Who Belongs Where?
- Listen Up!
- Sort It Out!
- Defend Your Ears!
- Munch, Chew, Digest
- Journey Through Space
- Dissolve It, Change It!
- Seeing the Light
- Classify to Identify
- Space Snacks
- Inside Us: Exploring Our Bodies
- Switch It Up!
- Matter in Motion
- The Force Is Strong
- The Circle of Life
- Breaking the Circuit

Appendix C– Phase 3 Programme of Study (KS4, AQA Unit Awards)

Curriculum Focus

- Functional science for independence
- Personalised pathways and accreditation
- Real-life, practical science linked to adulthood
- Scientific understanding applied to daily living

Pupils study **one set of units per year**, selected based on ability, communication needs, interests, and prior knowledge.

Set 1 – Cells and Living Systems

- Cells (119390)
- Cells and Reproduction (120931)
- Life Cycle with Support (113331)

Set 2 – Materials and Chemical Processes

- Useful Chemical Products (119658)
- Materials and Their Properties (114817)
- Introduction to Everyday Materials (113526)

Set 3 – Electricity and Electrical Systems

- Basics of Electricity (121320)
- Electrical Circuits (114825)
- Electricity and What Uses It (111848)

Set 4 – Health, Disease and Hygiene

- Introduction to Infectious Disease (120416)
- Biology: Health and Disease (113700)
- Sensory Personal Hygiene (121968) or Healthy Living: Personal Hygiene (118509)

Set 5 – Forces and Motion

- Force, Friction and Resistance (75529)
- Pushes and Pulls (120464)

- Starting to Explore Forces (117330)

Set 6 – Environmental Science and Sustainability

- Human Activity and Climate Change (74737)
- Ocean Plastic Pollution (118822)
- Recycling and Making Paper (79066)

Set 7 – Human Biology and Body Systems

- Introduction to the Nervous System (72665)
- Biology of the Human Body (119418)
- The Human Body – Unit 1 (114504)

Set 8 – Materials, Mixtures and Separation

- Dissolving (113596)
- Investigating Mixtures (88327)
- Separating Solid Materials with Support (113349)

Set 9 – Earth and Space

- The Wider Universe (113622) or Gravity and Space (113874)
- Space, Planets and Earth (76661) or Earth and Space (111716)
- Our Place in Space (106945)

Set 10 – Animals, Habitats and Forensic Biology

- Forensic Entomology (119852)
- Introduction to Amphibians (118776)
- Animals and Their Habitats (97306)
- Animals and Where They Live (91487)

Set 11 – Motion, Speed and Water Enquiry

- Investigating Speed (113601)
- Investigating Speed (74353)
- Scientific Enquiry: Boats and Water (72999)

Set 12 – Materials, Recycling and Sustainability

- Materials from the Earth (10546)

- Recycling: Domestic Waste (LE7045)
- Sorting Materials for Recycling (110247)