CANN BRIDGE SCHOOL

# Science Curriculum Overview

| | | |
|---|---|---|
| **Author** | Emma Hookins | **Date:** September 2023 |
| **Last reviewed on:** | October 2025 | |
| **Next review due by:** | July 2026 | |

**Statement of Intent**

The science curriculum at Cann Bridge School provides a comprehensive, inclusive, and engaging learning experience for learners with severe learning difficulties (SLD). It aims to foster curiosity, develop critical thinking, and build foundational knowledge of the natural world in a meaningful and developmentally appropriate way.

Through adapted teaching, multi-sensory exploration, and hands-on activities, learners are encouraged to ask questions, observe, experiment, and discover. Key concepts from biology, chemistry, physics, and earth sciences are introduced in a scaffolded manner, emphasising practical experiences and cause-and-effect relationships. Core scientific skills—such as observation, classification, measurement, and simple data recording—are developed in engaging, functional contexts.

By embedding science across the curriculum and adapting learning to individual needs, we nurture lifelong interest in the natural world while supporting communication, independence, and problem-solving skills. Learners are prepared for adulthood with the knowledge and confidence to engage with their environment, make informed choices, and participate actively in their communities.

**Implementation**

Science is delivered through discrete lessons, continuous provision, and cross-curricular opportunities, ensuring learners experience meaningful, functional, and engaging scientific learning.

**Curriculum Rolling Long Term Programme**

The Rolling Long-Term Curriculum Programme provides a clear structure for developing scientific knowledge and skills throughout each learner's journey. Teachers use assessment frameworks to identify starting points and plan next steps, ensuring learning is personalised, scaffolded, and responsive to individual needs.

A variety of approaches—including multi-sensory activities, hands-on experiments, and exploratory learning—enable learners to access scientific concepts in enjoyable and accessible ways. Topics from biology, chemistry, physics, and earth sciences are taught developmentally, focusing on skills such as observation, classification, measurement, and simple data recording.

The curriculum is aligned with the National Curriculum but remains flexible to meet the needs of learners on informal, semi-formal, and formal pathways. This ensures appropriate challenge and support, enabling progress in both scientific understanding and personal development.

Practical, real-world experiences encourage learners to explore cause-and-effect relationships, develop critical thinking, and gain a deeper appreciation of science in everyday life. This experiential approach reinforces theoretical concepts and prepares learners for greater independence, informed decision-making, and active participation in their communities.

**Early Years Foundation Stage (EYFS)**

In the EYFS, learners develop prerequisite science skills through concepts such as attention, object permanence, and noticing change and movement. Learners explore environments, materials, and situations that foster curiosity, communication, and problem-solving. These skills are nurtured through play and individual interests, laying the foundation for formal scientific learning.

**Key Stage One**

In Key Stage 1, learners build essential knowledge and skills through multisensory, hands-on experiences. They are introduced to fundamental scientific concepts across biology, chemistry, physics, and earth sciences.

Learners practise the basics of scientific inquiry, including asking questions, planning investigations, making observations, and recording findings. This stage emphasises critical thinking and communication, encouraging active exploration and fostering a lifelong interest in science.

**Key Stage Two**
In Key Stage 2, learners continue to develop skills in working scientifically while expanding their scientific knowledge. They engage in questioning, planning investigations, observing, recording, and presenting findings. This stage builds on Key Stage 1 foundations, promoting deeper exploration and critical thinking essential for scientific inquiry.

**Key Stages Three and Four**
In Key Stage 3 and 4, learners consolidate prior knowledge and skills while further developing scientific enquiry. They begin to evaluate their findings, assessing validity, reliability, and significance. This process enhances critical thinking, deepens understanding of scientific concepts, and encourages a more analytical approach to investigation.

**White Rose Science**
Cann Bridge School follows the White Rose Science scheme from Key Stage 1 to Key Stage 4. The scheme is chosen for its ability to support learners with SLD through structured, accessible, and adaptable approaches.

Key strengths include:

- Small, Sequenced Steps: Concepts are broken into manageable steps, ensuring secure foundations before progressing.
- Structured Lessons: Each lesson builds on prior knowledge, reinforcing understanding and promoting coherent progression.
- Adaptability: Lessons can be tailored to diverse learner needs, ensuring all pupils can access and engage with the material.
- Precise Scientific Vocabulary: Emphasis on accurate terminology supports deeper conceptual understanding and clear communication of ideas.

By implementing White Rose Science, Cann Bridge provides a high-quality, inclusive education that develops learners' scientific understanding and skills.

**Science Medium-Term Planning**

**Science Resources**

**Science Garden**
At Cann Bridge School, we are proud to offer a dedicated Science Garden that enriches our learners' educational experience by providing a dynamic, outdoor learning environment. This unique space supports the teaching of scientific concepts in a hands-on, sensory-rich setting, while also nurturing practical skills such as gardening and observation.

Central to the garden is our outdoor classroom, thoughtfully designed to support structured teaching approaches such as the TEACCH method, creating a calm and engaging space that promotes focus and independence. The garden features distinct zones tailored to different learning activities, including:

- Planting areas where learners can cultivate, observe, and care for plant life, supporting understanding of growth, life cycles, and environmental responsibility.
- Exploration zones that encourage curiosity and discovery through tactile and visual experiences linked to biology, earth sciences, and seasonal change.
- Sensory spaces designed to stimulate the senses and enhance engagement, particularly for learners on the informal pathway.

The Science Garden provides a valuable extension of the classroom, allowing learners to apply scientific knowledge in real-world contexts. It fosters curiosity, critical thinking, and independence, while promoting a deeper appreciation of the natural world. This resource plays a key role in supporting the delivery of our inclusive and experiential science curriculum.

**Assessment and Accreditation**
Progress in science is tracked using B Squared Assessment Frameworks, providing a clear and consistent approach to monitoring and evaluating learning. This system identifies gaps in knowledge, informs planning, and supports personalised teaching.

In EYFS and Key Stage 1, science progress is assessed using the Early Steps Assessment Framework. This is used as a baselining framework to identify pupils starting points in Key Stage 2 and beyond.

From Key Stage 2, for learners on the semi-formal and formal pathways, progression is guided by the *Progression Steps* – Science (Key Stage 2 & 3), which align with and aspire towards the National Curriculum. These frameworks build on prior learning, providing personalised support, appropriate challenge, and opportunities for academic and personal growth.

For learners on the informal pathway, assessed using the *Engagement Model*, science supports and measures engagement through multi-sensory interactive experiences. Here, activities are designed to stimulate interaction, with assessment focused on engagement rather than the acquisition of specific skills. Assessment and progress is captured using the Engagement Steps Assessment Framework.

For more information about our Assessment Processes, please see our Planning, Assessment, Marking, Reporting & Recording Policy

**Staff Training and Continued Professional Development (CPD)**
Ongoing CPD is essential to maintaining high-quality science provision and supporting staff confidence, subject knowledge, and pedagogical expertise. At Cann Bridge School, we prioritise a structured and responsive approach to professional development that reflects the evolving nature of technology and the diverse needs of our learners with severe learning difficulties.

Key CPD priorities include:

- **Staying Current**: Ensuring staff remain informed about emerging technologies, teaching methods and evidence-based approaches to science education.
- **Effective Pedagogy**: Developing strategies for scaffolding, adapting content, and using concrete–pictorial–abstract methods to support learners across all pathways.
- **Curriculum Alignment**: Supporting staff to plan and deliver science lessons in line with recognised frameworks such as *White Rose Science* and *B Squared*.
- **Inclusive Practice**: Equipping staff with tools to meet the needs of diverse learners, including those requiring assistive technologies or sensory-led approaches.
- **Audit and Targeted Support**: Conducting annual audits of staff confidence and subject knowledge to inform personalised CPD plans.
- **Moderation and Collaboration**: Holding regular moderation sessions to ensure consistency in assessment, share best practice, and foster collaborative reflection.

This structured approach to science CPD strengthens teaching quality, promotes consistency, and enhances learner outcomes by ensuring all staff are equipped to deliver inclusive, engaging, and future-focused science education.

**Impact**

Learners develop a lifelong interest in science, deepening their understanding of the natural world. They acquire essential scientific skills such as observation, classification, and cause-and-effect reasoning, along with critical thinking and problem-solving abilities.

Learners progress consistently in scientific knowledge, skills, and conceptual understanding, benefiting from rich experiences both inside and outside the classroom. The curriculum prepares them for adulthood, equipping them with the confidence and ability to explore their environment, make informed choices, and participate actively in their communities.

**Monitoring, Evaluation, and Review**

Equal access to the science curriculum is maintained through continuous monitoring and evaluation. The Understanding of the World Team Lead meets regularly with the curriculum team to review learner progress and ensure alignment with the school development plan.

Monitoring activities include:

- Action Plan review
- PLG progress analysis
- Learning walks and planning scrutiny
- Curriculum conversations and moderation
- B Squared and Evisense analysis
- School Improvement Partner and Education Improvement Officer visits
- Stakeholder surveys
- Staff training evaluations
- Book looks

**This policy links to the following policies and procedures:**

- 14-19 Curriculum Policy
- EYFS Curriculum Booklet
- EYFS Policy
- Pathways to Independence Policy
- Planning, Assessment, Marking, Reporting & Recording Policy
- Curriculum Long-Term Rolling Programme