CANN BRIDGE SCHOOL

Science Curriculum Policy




Statement of Intent

The Science Curriculum at Cann Bridge school is designed to provide a comprehensive, accessible, and engaging educational experience. It aims to foster curiosity, develop critical thinking, and build foundational knowledge of the natural world. Our curriculum is inclusive and tailored to meet the diverse needs of our students, ensuring that every learner has the opportunity to achieve their full potential.

Our science curriculum ensures that all learners have access to a rich science education by providing differentiated instruction and resources tailored to individual needs. To stimulate curiosity about the natural world, we offer hands-on activities and exploratory learning, encouraging students to ask questions and seek answers through observation and experimentation. By making science relevant and enjoyable, we foster a love for learning. Fundamental concepts in biology, chemistry, physics, and earth sciences are introduced in an age-appropriate manner, and basic scientific skills such as observation, classification, measurement, and simple data recording are developed. Practical experiences promote an understanding of cause-and-effect relationships.

By fostering a supportive and stimulating learning environment, we aim to inspire a lifelong love of science and equip our learners with the skills and knowledge they need to thrive.

Implementation

At Cann Bridge School, science is delivered through a variety of approaches including stand-alone lessons, continuous provision, and cross-curricular opportunities. This diverse approach ensures that learners engage with scientific concepts in different contexts, fostering a deeper and more holistic understanding of the subject.

Our science curriculum at Cann Bridge School is designed to align closely with the National Curriculum, whilst also providing personalised support tailored to the individual needs of each learner. This approach allows us to challenge learners appropriately while also nurturing their strengths, thereby promoting their personal growth in scientific knowledge and skills.

Through our curriculum we ensure that leaners' progression in science is carefully scaffolded throughout their entire school journey. This structured approach not only facilitates continuity in learning but also provides a clear pathway for students to develop and build upon their scientific knowledge and skills over time. By offering a range of multi-sensory opportunities and provisions for learners to apply their scientific knowledge and skills, we enable them to deepen their understanding through hands-on experiences. This experiential learning approach not only reinforces theoretical concepts but also cultivates critical thinking, problem-solving abilities, and a genuine appreciation for the relevance of science in everyday life.

Impact

Our science curriculum aims to cultivate a passion for science and deepen learners' appreciation of the world. Teachers are equipped with the expertise and assurance to deliver a carefully crafted and engaging curriculum, employing diverse resources and teaching methods. Learners consistently advance in their skills, knowledge, and conceptual grasp. They benefit from a variety of learning experiences, both within the classroom and beyond.

Monitoring, Evaluation, and Review

We ensure equal and appropriate access to the science curriculum through ongoing monitoring, evaluation and review. The curriculum team leader for Understanding of the World conducts regular meetings with the Understanding of the World team, monitors learners learning and progress. The science policy is reviewed yearly, and the action plan is updated accordingly.

Science in EYFS

In the Early Years Foundation Stage (EYFS), learners develop the prerequisite science skills through concepts such as attention, object permanence, and noticing change and movement. From this foundation, learners are given opportunities to experience different environments, materials, and situations that encourage the development of curiosity, communication, and problem-solving. These skills are nurtured and developed through play and the individual interests of the learner.

Science in Key Stage One

In Key Stage one, learners will build upon their fundamental scientific knowledge and skills to begin exploring the science curriculum. Learners will have multi sensory opportunities to begin to develop working scientifically as well as building their scientific knowledge. They will begin to explore asking questions, planning, making observations and gather, record and present their answers.

Or

In Key Stage 1, learners embark on their scientific journey by building essential knowledge and skills through engaging, multisensory experiences. They are introduced to fundamental scientific concepts across various disciplines, laying the groundwork for deeper exploration. Through hands-on activities, learners begin to practice the basics of scientific inquiry, including asking questions, planning investigations, making careful observations, and recording their findings. This stage emphasises the development of critical thinking and communication skills as learners start to gather and present their discoveries. By fostering curiosity and encouraging active exploration, Key Stage 1 aims to ignite a lifelong interest in science while nurturing a foundational understanding of the scientific process.

Science in Key Stage Two

In Key Stage 2, learners continue to engage in multisensory activities aimed at developing their skills in working scientifically and expanding their scientific knowledge. They explore the processes of questioning, planning investigations, making detailed observations, and effectively gathering, recording, and presenting their findings. This stage builds upon their foundational understanding from Key Stage 1, encouraging deeper exploration and fostering critical thinking skills essential for scientific inquiry.

Science in Key Stage Three and Four

In Key Stage 3, learners build upon their existing knowledge, skills, and understanding in science, continuing to develop their scientific enquiry skills. They start to evaluate their findings, which means they learn to assess the validity, reliability, and significance of their results and conclusions. This evaluation process is crucial as it helps them to refine their understanding of scientific concepts and develop a more critical approach to scientific investigation.

White Rose Science

Cann Bridge has chosen to follow the White Rose Science scheme of work from Key Stage 1 through to Key Stage 4. This decision is based on several key strengths of the White Rose Science scheme:

Small, Sequenced Steps: The scheme breaks down scientific concepts into manageable, incremental steps, ensuring that learners can build a strong foundation before moving on to more complex topics.

Specifically Structured Lessons: The lessons are designed with a clear structure, facilitating effective teaching and learning. Each lesson aims to build upon previous knowledge, reinforcing understanding and ensuring a coherent progression through the curriculum.

Adaptability: The scheme is easily adaptable, allowing teachers to tailor lessons to meet the diverse needs of their learners. This flexibility ensures that all students, regardless of their starting points, can access and engage with the material.

Precise Scientific Vocabulary: Emphasis is placed on the use of precise scientific vocabulary. This focus helps learners to develop a deep understanding of scientific concepts and to communicate their reasoning clearly and accurately.

By implementing the White Rose Science scheme, Cann Bridge aims to provide a high-quality science education that supports all learners in developing their scientific understanding and skills.

Accreditation and Assessment

At Cann Bridge School, we use B Squared Assessment Frameworks to track pupil progress across the school in all subjects. Our assessment policy provides detailed information on our approach to tracking and evaluating learners' progress.

Using B Squared allows us to effectively monitor and assess learners' science development, identifying any gaps in their learning and fundamental skills. This tracking system informs our planning process, enabling teachers to deliver appropriate lessons and provide learners with opportunities for development and progression.

By regularly assessing learners' progress in science, we ensure that our teaching aligns with their individual needs and enables them to make continuous improvements. This approach supports a comprehensive and tailored science programme that promotes the development of understanding, use and application of their science knowledge.

Staff Training and Continued Professional Development

Continual Professional Development (CPD) in science for teachers is a crucial aspect of maintaining and enhancing the quality of science education.

Keeping Current with Educational Trends: The field of education, including science instruction, is constantly evolving. CPD ensures that teachers stay up-to-date with the latest teaching methods, technologies, and best practices.

Enhancing Teaching Skills: CPD programs can help teachers improve their instructional strategies, classroom management techniques, and communication skills, all of which are essential for effective science teaching.

Adapting to Changing Curriculum: Curriculum standards and educational requirements may change over time. Regular CPD allows teachers to adapt their teaching methods to align with the latest curriculum and assessment standards.

Addressing Learner Needs: Teachers encounter a diverse range of learners, each with unique learning needs. CPD can provide tools and strategies to address the needs of different learners, including those who require additional support or enrichment.

Audit and Accountability: Annual audits of teachers' knowledge and understanding of science, followed by structured CPD, ensure accountability and quality assurance in science education. This helps in maintaining high standards and can identify areas where improvement is needed.

Improved Learner Outcomes: Teachers who engage in ongoing CPD tend to be more effective in the classroom, which can lead to improved learner performance and outcomes in science.

Incorporating regular audits and structured CPD plans for teachers in science is a proactive approach to ensure that educators are equipped with the knowledge and skills necessary to provide high-quality science education. It's an investment in both the teachers' professional development and the success of their students.

Science Garden

At Cann Bridge, we are proud to offer a dedicated science garden designed to enrich our learners' educational experience. This unique space not only supports their understanding of scientific concepts but also nurtures their gardening skills. Central to our approach is the outdoor classroom, carefully designed to facilitate the TEACCH method, providing an engaging environment conducive to learning.

Outside, our science garden features distinct areas tailored for various activities. These include designated planting zones where students can cultivate and observe plant life, exploration areas encouraging hands-on discovery, and sensory sessions designed to stimulate the senses and enhance learning outcomes. Together, these elements create a dynamic learning environment that fosters curiosity, engagement, and practical skills development.

CANN BRIDGE SCHOOL

Science Rolling Programme

Year group	Autumn		Spring				
EYFS	Weather		Garden: Planting and growing			Woodland areas: Habitats, animals, our environment	
KS1 Year 1	Seasonal Changes	The Human Body	Seasonal Changes	Caring for the Planet	Seasonal Changes	Materials	Seasonal Changes
KS1 Year 2	Animals		Planting A	Plants	Planting B	Plants/ Growing and Cooking	Planting C
KS2 Year 1	Animals needs for survival (6)		Humans (4)		Sustainability: Plastic (2)	Materials (10)	
KS2 Year 2	Living things and their habitat (9)		Plants (Light and Dark) (5)			Living things and their habitat (continued)	Plants (Light and Dark) (1)
KS2 Year 3	Growing up (6)		Growing up (1)	Plants Bulbs and Seeds (4)		Bulbs and Seeds (1)	Wildlife

KS2 Year 4	Skeletons (5)		Movement (2)		Nutrition and Diet (5)			Sustainability: food waste (2)		Rocks (4)
KS3 Year 1	Fossils	Soils			Light	Light		Plants		
KS3 Year 2	Forces	Magnets			Group and classify living things	States of Matter		States of matter		Sound
KS4 Year 1	Data Collection	Electricity	Energy	Data Collection C	Habitats	Deforestation		Food Chains		The digestive system
KS4 Year 2	Forces	Space	Global Warming		Properties of materials	Animals including humans		Lifecycles		Electricity
KS4 Year 3	Reproduction A	Reversible and irreversible changes			Reproduction B	Plastic Pollution	Living things and their habitats	Renewable energy	Light	Light pollution