Respect Resourcefulness Relationships Risk Taking Resilience Reflectiveness

Burghill Community Academy
Science
Policy

Reviewed: Autumn 2024
Mr. N. Locke

Intent

Our school's science curriculum is designed to align with our ethos, vision, and values, while focusing on key areas for the development of our pupils and responding to relevant national strategies. Our aim is to deliver a curriculum that fosters curiosity, excitement, and critical thinking in science, helping children understand and appreciate the world around them.

At Burghill Community Academy, our science curriculum aligns with our school's ethos, vision, and values, especially our commitment to developing the 6 Rs: Reflectiveness, Relationships, Resilience, Resourcefulness, Respect, and Risk-Taking. These principles are integrated throughout the science curriculum to help pupils grow as individuals and learners.

Our curriculum also promotes the development of the 6 Rs by:

Reflectiveness: Encouraging pupils to look back at their work, reflect on their learning, and identify areas for improvement, fostering a mindset of continuous growth.

Relationships: Promoting collaborative learning opportunities, where pupils interact with peers, teachers, and the wider community, learning to communicate effectively and work well together.

Resilience: Nurturing a growth mindset, helping pupils to persevere through challenges, learn from setbacks, and approach scientific inquiries with confidence.

Resourcefulness: Empowering pupils to use the resources around them, both in the classroom and beyond, to solve problems, ask questions, and support their peers.

Respect: Creating an environment where respect is paramount, showing respect to others' ideas and contributions in scientific discussions and investigations.

Risk-Taking: Encouraging pupils to assess risks, make informed decisions, and take calculated risks in their learning, understanding the value of exploring the unknown.

Using Kapow Primary's Science scheme, we strive to provide an inclusive and meaningful learning experience where pupils can explore the natural world, develop complex knowledge in biology, chemistry, and physics, and acquire a broad range of scientific skills. The curriculum enables pupils to make connections between their science learning and their lives beyond the classroom and empowers them to tackle future global challenges with confidence and resilience.

Our curriculum is guided by the following principles:

- To cultivate a strong foundation of scientific knowledge and skills in biology, chemistry, and physics.
- To encourage curiosity and critical thinking, enabling pupils to question, investigate, and understand the world around them.

- To integrate scientific literacy, developing pupils' ability to use and understand specialist vocabulary.
- To foster an understanding of how scientific inquiry and knowledge contribute to society both in historical and contemporary contexts.

Implementation

The implementation of our science curriculum is guided by Kapow Primary's structured scheme of work, which incorporates a spiral approach to revisiting key concepts with increasing complexity. This approach allows pupils to build on their prior knowledge and develop a deeper understanding of scientific concepts.

Key elements of our implementation strategy include:

- Progressive Learning Pathways: Lessons are planned to ensure continuous progression by building on practical and investigative skills across all units. Pupils will explore key areas such as plants, animals, living things and habitats, materials, energy, forces, Earth, and space, with each unit focusing on a specific discipline: biology, chemistry, or physics.
- Integration of Scientific Skills: Working scientifically is not taught in isolation; rather, it is embedded within the conceptual understanding of science. This provides relevant and frequent opportunities for developing scientific enquiry skills, including data gathering, measurement, observation, analysis, and evaluation.
- Variety of Teaching Strategies: Lessons incorporate diverse teaching strategies such as hands-on exploration, independent tasks, paired and group work, practical activities, and computer-based tasks. This range ensures engagement for different learning styles and aids in developing a comprehensive understanding of science concepts.
- Support for Staff and Pupils: Teacher videos and resources are provided to develop subject knowledge and address misconceptions. Guidance for adapting lessons ensures all pupils can access the curriculum and are challenged appropriately. Knowledge organisers highlight key learning and vocabulary, supporting both adaptive teaching and revision.
- Assessment for Learning (AfL): Formative and summative assessments are built into the scheme, including quizzes, knowledge catchers, and reflection activities. These assessments provide regular opportunities to monitor pupil progress and identify gaps in understanding.

Impact

The impact of the science curriculum is evaluated through continuous monitoring of pupil progress using a range of assessment methods, ensuring that all pupils achieve the desired learning outcomes and are prepared for further education.

Expected impacts include:

- Pupils developing early scientific thinking skills and foundational knowledge in biology, chemistry, and physics.
- Pupils gaining the ability to use scientific vocabulary accurately and effectively.
- Pupils demonstrating resilience and a growth mindset in scientific enquiry.
- Pupils meeting the end-of-key-stage expectations in the National Curriculum for science.
- Assessment Models, Tracking, and Evidencing Progress

Our assessment model is informed by the latest research from the Education Endowment Foundation (EEF) and current learning theories, including principles related to the memory gap and cognitive processing. We employ a combination of formative and summative assessments to track pupil progress effectively.

Formative assessments, such as observational checklists, pupil discussions, and ongoing feedback, are used throughout lessons to inform teaching and provide real-time adjustments to support learning. Summative assessments, including end-of-unit quizzes and skills catchers, offer insight into pupils' mastery of content. The use of retrieval practice and spaced repetition helps bridge the memory gap, ensuring long-term retention of knowledge.

We maintain detailed records of pupil progress using tracking tools provided by Kapow, enabling us to identify gaps, differentiate instruction, and provide targeted support. Evidence of progress is gathered through a range of methods, such as pupils' written work, presentations, and verbal explanations, ensuring a holistic view of their learning journey.

By embedding these assessment practices into our curriculum, we aim to create an environment where pupils are continually challenged, supported, and motivated to reach their full potential in science.