Inspiring All to Excellence

ANKERMOOR PRIMARY ACADEMY

Ankermoor Primary Academy

Science Policy

Document Control

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Rationale/principles

It is the aim of Ankermoor Primary Academy to prepare pupils to participate in tomorrow's rapidly changing world. We believe that Science at Ankermoor gives our learners an opportunity to do this in a fun and exciting environment. Learners are challenged and are taught methods of enquiry and investigation to stimulate creative thoughts. Learners are encouraged to ask questions to challenge themselves further and begin to understand and appreciate the way Science will affect their future on a personal, national and global level. It aims to stimulate a learner's curiosity in finding out how things happen in the way they do. It teaches methods of enquiry and investigation to stimulate creative thought. Learners should be encouraged to understand how science can be used to explain what is occurring, predict how things will behave, and analyse causes.

The National Curriculum for science aims to ensure that all pupils:

- develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics
- develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them
- are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future.

Intent

At Ankermoor Primary Academy, we intend to build a Science curriculum which develops learning and results in the acquisition of knowledge and skills as set out in the National Curriculum Science Programmes of study. At Ankermoor, we recognise the importance of Science in every aspect of daily life. With this in mind, we aim to provide a curriculum that increases pupils' knowledge and understanding of our world, and develop skills associated with Science as a process of enquiry. It will develop the natural curiosity of the child, encourage respect for living organisms and the physical environment and provide opportunities for critical evaluation of evidence.

We will offer opportunities for children to:

- develop scientific knowledge and conceptual understanding aspects of Biology, Chemistry and Physics;
- undertake different types of science enquiries that help them to answer scientific questions about the world around them;
- develop the essential scientific enquiry skills to deepen their scientific knowledge;
- be equipped with the scientific knowledge required to understand the uses and implications of Science, today and for the future.

Implementation

- Clear and comprehensive schemes of work in line with the National Curriculum. The school uses the Foundation Stage Guidance (Knowledge and Understanding of the World) together with the National Curriculum framework for Key Stages 1 and 2. EYFS forms the foundation of our curriculum where skills and knowledge are taught through 'In the Moment' opportunities, linked to 'Understanding the World'.
- Science is taught in blocks which last approx. 6 weeks. Each year group will cover 4/5 main topics. Working Scientifically skills are embedded into lessons to ensure these skills are being developed throughout the children's school career.
- A range of scientific enquiry skills will be taught, ensuring that children are aware of health and safety issues related to the tasks undertaken. These will include: identifying, classifying and grouping; carrying out research; fair and comparative testing; pattern seeking; and observing over time. Through these lines of enquiry, we aim to provide children with opportunities to:
  - ask and answer scientific questions;
  - carry out scientific investigations using equipment correctly and safely;
  - evaluate evidence and present conclusions clearly and accurately;
  - know and understand the processes of living things;
  - know and understand the physical processes of materials, electricity, light, sound and natural forces;
  - develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics;
  - develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them, and;
  - equip learners with the scientific knowledge required to understand the uses and implications of science, today and for the future.

- Clear and appropriate cross curricular links to underpin learning across the curriculum, giving the children opportunities to learn life skills and apply skills to 'hands on' situations in a purposeful context.
- Children are asked to self-evaluate their work.
- Science focused displays in classrooms on display throughout the school. These displays celebrate exceptional practice and exemplify expectations for vocabulary.
- Independent learning: In Science, children may well be asked to plan and carry out their own lines of enquiry. This allows the children to have ownership over their curriculum and lead their own learning in this subject.
- Collaborative learning: In Science, children may well be asked to work as part of a team, learning to support and help one another towards a challenging, yet rewarding goal.

Impact

- Children will have clear enjoyment and confidence, providing them with the foundations to understand the world around them.
- Children will ultimately know more, remember more and understand more about Science, demonstrating this knowledge in other areas of the curriculum and in opportunities out of school.
- The large majority of children will achieve age related expectations in Science.
- As scientists, children will develop skills and attributes they can use beyond school and into adulthood.

Planning

- Science is taught through a series of units of work that incorporate the knowledge, skills, understanding and breadth of study set out in the National Curriculum.
- The long and medium term plans are used to plan effective lessons and to ensure there is a breadth of coverage.
- Each year group builds on children's prior learning and is aware of which skills should be specifically targeted within a term's learning to ensure coverage and progression.
- *Knowledge and Skills progression* – Ensures there is progression between phases throughout school.
- *Long Term Planning* – The whole school curriculum overview seeks to maximise opportunities for science.
- *Medium Term Planning* for each unit is sequenced – with references to the National Curriculum Programmes of Study.
- *Assessment for Learning* is continuous throughout the teaching of each unit. Short term, medium term and long term plans are amended accordingly.
- *Blocked units of work* – units of work are completed each half term.

Assessment, Recording and Reporting

- Assessment in science is on-going. Teachers assess children's work in science by making informal judgements as we observe them during lessons and through assessment focussed activities.
- Teachers will adapt planning in order to meet the needs of all the learners in class.
- Use questioning throughout a lesson to assess and review learning in order to challenge and support all learners. If necessary, adapt a lesson to meet all learners' needs.
- Use and value children's own self/peer assessments in order to assist planning and future differentiation.
- Judge the pupils' understanding with accuracy and use this to inform future learning opportunities/planning: through use of flashbacks, success criteria, self and peer assessment, questioning, prior knowledge assessments as well as subject specific assessment procedures.
- Assess pupils' understanding through the use of prior and summative assessments.

Roles and responsibilities

Subject Leader: Stem Faculty *To lead staff, focusing on Science, to ensure high standards of teaching and learning enable all children to develop as independent, confident, effective and responsible learners.*

Head Teacher: To ensure staff are fully able to deliver Science appropriately and that pupils are receiving their entitlement.

STEM Faculty: To formulate the long-term curriculum plan and medium-term planning, ensuring that Science is embedded across school.

Teachers and Teaching Support Staff- To deliver a curriculum of progressive units of work, enabling the development of pupils' knowledge, understanding and skills.

Governors – To agree and review the Science Policy on a regular basis. Question the Headteacher and the STEM faculty to ensure that the policy is implemented and impacts positively on learning and teaching.

Learners: Have a responsibility to take an active part in their learning, responding positively. Also, to be active participants in personalising and extending their own learning at school and at home.

Other adults including parents: To realise that learning takes place, not only within the classroom but in all environments. Value and recognise their role in shaping children's attitudes and life-long learning experiences. To create positive relationships with all children. To recognise their impact on children's self-esteem.

Learning Environment and Resources

- Where appropriate use learning focused displays to motivate, support, promote expectations and enhance learning.
- Use a multi-sensory approach to learning (E.g.: Film clips, music, sounds, ICT, the environment, scientific equipment).
- Identify and gather appropriate resources for the lesson, modify materials to accommodate pupils' specific needs and abilities.
- Use the environment most effectively to maximise learning (inside and outside).
- Use educational visits and visitors to enhance learning.

Monitoring and evaluation of the Policy

The role of the STEM Faculty in the context of this policy is to:

- Ensure the Intent, implementation, and Impact is clear and is measured.
- Monitor and evaluate the impact of effective learning and teaching strategies within the subject area.