



Inspiring All to Excellence



Anker Moor Primary Academy

Mathematics 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. Mathematics is essential for everyday life, for understanding and engaging with our world. It enables the development of pupils' natural ability to think logically, solve puzzles and apply these skills to real-life problems. Pupils at Ankermoor learn to think creatively and make links between mathematical concepts. They develop the skills, knowledge and efficient methods of calculation necessary to support their economic future and problem solving in daily life. Children are taught to reason mathematically by following a line of enquiry, finding connections and establishing relationships whilst using mathematical language. Our mathematics curriculum carefully sequences knowledge, concepts and procedures to build mathematical knowledge and skills systematically over time.

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

- become fluent in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.
- reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language.
- can solve problems by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.

Intent

At Ankermoor Primary Academy, we intend to build a Mathematics curriculum which develops learning and results in the acquisition of knowledge and skills as set out in the National Curriculum Maths Programmes of study. At Ankermoor, we follow a mastery approach of teaching Mathematics. The key principles are:

- All pupils are encouraged by the belief that by working hard at maths they can succeed.
- Pupils are taught through whole-class interactive teaching, where the focus is on all pupils working together on the same lesson content at the same time. This ensures that all can master concepts before moving to the next part of the curriculum sequence, allowing no pupil to be left behind.
- If a pupil fails to grasp a concept or procedure, this is identified quickly and early intervention ensures the pupil is ready to move forward with the whole class in the next lesson.
- Lesson design identifies the new mathematics that is to be taught, the key points, the difficult points and a carefully sequenced journey through the learning. In a typical lesson, pupils sit facing the teacher and the teacher leads back and forth interaction, including questioning, short tasks, explanation, demonstration, and discussion.
- Procedural fluency and conceptual understanding are developed in tandem because each supports the development of the other.

- It is recognised that practice is a vital part of learning, but the practice used is intelligent practice that both reinforces pupils' procedural fluency and develops their conceptual understanding.
- Significant time is spent developing deep knowledge of the key ideas that are needed to underpin future learning. The structure and connections within the mathematics are emphasised, so that pupils develop deep learning that can be sustained.
- Key facts such as multiplication tables and addition facts within 10 are learnt to automaticity to avoid cognitive overload in the working memory.

We will offer opportunities for children to:

- become fluent in the fundamentals of mathematics, including through varied and frequent practice.
- develop conceptual and procedural understanding.
- move through the programmes of study at broadly the same pace.
- be challenged through rich and sophisticated problems.

Implementation

- Clear and comprehensive schemes of work in line with the National Curriculum. The school uses the Foundation Stage Guidance 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 'Number', 'Patterns & Connections' and 'Spatial Reasoning'.
- Mathematics is taught daily with each topic being taught in a block. Mental arithmetic skills are embedded into lessons to ensure these skills are being developed throughout the children's school career.
- Mathematics is planned using the White Rose documents alongside NCETM guidance.
- Clear and appropriate cross curricular links are made 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.
- Mathematics focused displays are on display throughout the school. These displays celebrate exceptional practice and exemplify expectations for vocabulary.
- Independent learning: In mathematics, children may well be asked to carry out problem solving activities independently. This allows the children to have ownership over their curriculum and lead their own learning in this subject.
- Collaborative learning: In mathematics, 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 mathematics, 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 mathematics.

- As mathematicians, children will develop skills and attributes they can use beyond school and into adulthood.

Planning

- Mathematics is taught through a series of topics 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 mathematics.
- 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.

Assessment, Recording and Reporting

- Assessment in mathematics is both formative and summative.
- Teachers assess children's work by making informal judgements as we observe them during lessons and through assessment focused activities.
- Summative assessments (PUMA tests) are carried out once each term.
- Teachers will adapt planning in order to meet the needs of all the learners in class.
- Teachers 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.
- Children's own self/peer assessments are valued and considered in order to assist planning and future differentiation.
- Assessment information is used 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.

Roles and responsibilities

Subject Leader: To lead staff, focusing on mathematics, to ensure high standards of teaching and learning enable all children to develop as independent, confident, effective and responsible learners. To formulate the long-term curriculum plan and medium-term planning, ensuring that maths is embedded across school.

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

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 Mathematics Policy on a regular basis. Question the Headteacher and the Maths Lead 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 Maths Lead 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.