

Mathematics Curriculum Policy

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Curriculum Aim

Our mathematics curriculum aims to empower every child with the belief that “Everyone can do Mathematics!” We adopt the White Rose Mathematics scheme, collaborate with Maths Hubs, and follow the National Centre for Excellence in the Teaching of Mathematics (NCETM) to enrich our teaching practice, aligning fully with the National Curriculum for Mathematics.

We are committed to nurturing confident, happy, and resilient mathematicians who embrace challenges. Our learners become independent, reflective thinkers whose mathematical skills empower them not only in mathematics but across all areas of learning and development.

Intent

Mathematics is essential for everyday life, underpinning science, technology, engineering (STEM), and financial literacy. Our curriculum ensures children develop a solid mathematical foundation essential for independence throughout life.

- Pupils will fluently move between different mathematical representations.
- They will develop number fact fluency, conceptual understanding, rapid recall, and the ability to apply knowledge accurately.
- Children will reason mathematically, follow lines of enquiry, and use precise mathematical language to explain and justify answers.
- Problem-solving skills will enable children to break down complex problems into manageable steps and “prove it.”
- We adopt a mastery approach that promotes deep mathematical thinking, fluency, and connections across concepts.

Implementation

At Barley Barkway Federation, mathematics teaching is delivered through the White Rose Mathematics (WRM) scheme, supplemented by NCETM's Master the Curriculum materials. Both schemes offer a sequential, comprehensive approach enabling depth and breadth across mathematical strands.

Two staff members are currently enrolled in the NCETM Maths Hubs Mastery Development Programme, reinforcing our commitment to mastery teaching.

Teaching Approach

- Concrete-Pictorial-Abstract (CPA): All pupils engage with manipulatives (Concrete), visual representations (Pictorial), and abstract symbols (Abstract) to build robust mathematical understanding.
- Pupils choose preferred manipulatives, such as dienes or place value counters, based on teacher modelling, promoting independent reasoning and confidence.
- Mathematical vocabulary is emphasised through stem sentences and oral language practice. Lessons begin with problem-solving and reasoning tasks that encourage mathematical discussion (e.g., "I know that...", "I proved that...", "I know it can't be...").

Early Years Foundation Stage (EYFS)

In EYFS, mathematics is taught daily using NCETM Mastering Number, White Rose Mathematics, and the Montessori approach. Children engage in counting, number recognition, ordering, composition of numbers to 10, and early measurement concepts through hands-on activities and play. Manipulatives such as tens frames and part-part-whole models are embedded into lessons, alongside practical experiences involving sand, water, and non-standard units for measurement.

Fluency Development

From Years 1 to 4, fluency lessons are incorporated regularly to develop automaticity in number facts, supported by the NCETM Mastering Number programme and Maths Hubs training.

Impact

Our Mastery approach and CPA model ensure that most children progress at a consistent pace, developing secure mathematical concepts and reasoning skills. Adaptations and additional support are provided as necessary, particularly for children with Special Educational Needs and Disabilities (SEND).

- Pupils who grasp concepts quickly are challenged with complex problem-solving and reasoning.
- Those requiring more support receive timely interventions, including same-day consolidation.
- Formative assessment occurs in every lesson with verbal feedback and mathematical marking codes.
- Summative assessments use WRM end-of-block evaluations.
- Teachers track use of sentence stems and mathematical vocabulary to assess conceptual understanding.

Strengths and Areas for Development

Strengths

- Equal access for all children to grasp mathematical concepts.
- Strong emphasis on fluency to support rapid recall of number facts.
- Engagement with NCETM Maths Hubs ensures staff remain up to date with best practices.
- CPA and Mastery approaches underpin teaching and learning effectively.
- Mathematics lessons are enjoyable, with ample opportunities to develop mathematical language.

Areas for Development

- Embed fluency lessons three times weekly across the federation and evaluate their impact annually.
- Fully implement the mastery approach across all classrooms as part of the NCETM project.
- Ensure manipulatives are accessible and confidently used by all children, not solely those with additional needs.

Monitoring

Mathematics is developed and monitored through lesson coaching, staff training, lesson observations, book scrutiny, and pupil voice. Feedback is timely and constructive, and staff meetings support ongoing professional development. Collaboration with Maths Hubs sustains current knowledge and pedagogy.

Teaching Mathematics in EYFS

Children experience mathematics throughout their learning environment. Focus areas include counting, identifying, representing, estimating, reading and writing numbers, comparing, ordering, and exploring number composition to 10.

By the end of Reception, children at the expected level will:

- Have a deep understanding of numbers to 10, including subitising up to 5.
- Recall number bonds up to 5 and some bonds to 10 automatically.
- Count verbally beyond 20, recognise patterns, and compare quantities using language such as greater than, less than, or equal.
- Begin fluency development with number bonds and doubles.

Supporting SEND and Pupil Premium (PP) Pupils

Manipulatives are available to all children, not just those with SEND. Additional reading support is provided when language is a barrier to maths skills. Support is personalised and includes:

- Quality First Teaching (QFT) in-class adaptations.
- Small group interventions to support concentration and understanding.
- Tracking of mathematical vocabulary use and tailored support.
- Individualised curriculum pathways for pupils with Education, Health and Care Plans (EHCPs).
- Use of pre-teaching, timely intervention, and consolidation activities delivered by support staff.