



Badgerbrook Primary School

Maths Policy

2024/25

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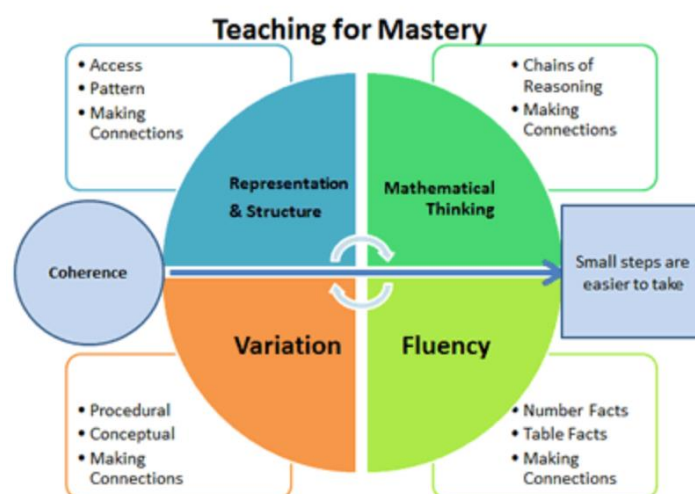
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Aims of our Maths Policy:

The aim of our maths policy at Badgerbrook Primary School is to foster a positive and engaging learning environment where all pupils develop a strong foundation in mathematical concepts and skills. Our policy emphasises a balanced approach that includes hands-on activities, problem-solving and the use of technology to enhance learning. We are committed to providing high-quality instruction that meets the diverse needs of our pupils, encouraging a growth mindset and cultivating a lifelong appreciation for mathematics.

Purpose of Study

At Badgerbrook, we see the acquisition of mathematical skills as being vital for the life opportunities of our children. Through our work with the East Midlands South Maths Hub and White Rose, our teaching is based on the five key ideas of Teaching for Mastery: Coherence, Representation and Structure, Mathematical Thinking, Fluency and Variation (procedural and conceptual). Provided with regular opportunities to make links with maths in the real world and other curriculum areas, children will leave Badgerbrook knowing how interconnected and fundamental maths is to the world around us.



Our overarching intent is to instil a love of mathematics in our pupils and staff. We aim for our pupils to develop enthusiastic and inquisitive attitudes towards mathematics, whilst also developing confidence in concepts and procedures. We want our pupils to be life-long mathematicians and to understand how mathematics is essential to everyday life and that it is critical to science, technology, engineering, and finance, as well as using logical approaches to solve problems in any context. Through developing pupils' curiosity and gaining an appreciation of the beauty and power of mathematics, we want all pupils to enjoy the subject and to experience success. We have embedded the three aims of the National Curriculum in our teaching: fluency, reasoning and problem solving. We believe that all three of these are equally important to develop well-rounded mathematicians.

Planning

How mathematics is planned and taught:

At Badgerbrook, our approach to teaching mathematics involves guided practice using the 'I do, we do, you do' model. This method follows a gradual release of responsibility, where the teacher demonstrates the concept first (I do), then gives time for the children to work collaboratively (we do), and finally allows them to work independently (you do). This scaffolded approach aims to support the learning process and prevents overwhelming the pupils' working memory. By providing a clear model and step-by-step guidance, pupils can better understand the concepts and build their skills over time. The collaborative aspect of the 'we do' stage encourages active participation and engagement. As pupils progress to the 'you do' stage, they gain confidence in applying their knowledge autonomously. This approach creates a supportive learning environment that fosters success.

Teachers use the White Rose planning scheme to support their long-term planning. White Rose suggests how long to spend on each block of learning, but the length of time spent is down to individual teachers to decide what is best for their classes'. Teachers look at what the prior learning was, then build the current teaching upon that based on the NCETM ready to progress criteria. Teachers use the NCETM progression maps for overall National Curriculum coverage.

To support our planning, we use various high quality resources:

- [NCETM PD materials](#)
- NCETM Mastery Assessment documents [Primary Assessment Materials | NCETM](#)
- NCETM [Ready to Progress](#)
- White Rose Schemes of learning <https://whiterosemaths.com/resources/primary-resources/>
- Gareth Metcalfe's 'I See Reasoning' and 'I See Problem Solving' <http://www.iseemaths.com/>
- NRICH resources <https://nrich.maths.org/>
- [Numberblocks https://www.ncetm.org.uk/classroom-resources/ey-numberblocks-support-materials/](https://www.ncetm.org.uk/classroom-resources/ey-numberblocks-support-materials/)

Teachers use stem sentences that are chorally rehearsed by the class. Teachers may miss out a key word within the sentence to reactive prior learning. These sentences are built on daily throughout the unit of work. Teachers plan each unit in year groups using a unit planning grid, which details the progression within the unit of work, considers problem solving activities and makes links to the Ready to Progress statements. It is an opportunity for teachers to pull together all of the named resources (above) to ensure that staff in their teams are aware of what the next stages of learning are.

Year Group: 2	Maths Strand: Place Value	Term: Autumn 1
<p>Pre-requisites: 1NPV-1 Count within 100, forwards and backwards, starting with any number.</p> <p>1NPV-2 Reason about the location of numbers to 20 within the linear number system, including comparing using $<$ $>$ and $=$</p>	<p>Key Vocabulary: Hundred, tens, ones, zero, place value, greater than, less than, equal to, order, two-digit number, partition, recombine, digit, numeral, words, more, less</p>	<p>Learning journey: LO: Numbers to 20 LO: Count objects to 100 by making 10s LO: Recognise tens and ones (2 lessons) LO: Use a place value chart LO: Partition numbers to 100 LO: Write numbers to 100 in words LO: Flexibly partition numbers to 100 (2 lessons) LO: Write numbers to 100 in expanded form LO: 10s on the number line to 100 LO: 10s and 1s on the number line to 100 LO: Estimate numbers on a number line (2 lessons) LO: Compare objects LO: Compare numbers LO: Order objects and numbers LO: Count in 2s, 5s and 10s (3 lessons) LO: Count in 3s (2 lessons)</p>
<p>Planned Misconceptions:</p> <p>Revert to counting in ones rather than using earlier learning of making tens.</p> <p>Write the whole number in a single column, rather than considering the structure of the number.</p> <p>Partition a number into its digits rather than considering the value of each digit, for example stating that 43 is made up of 4 and 3.</p>	<p>Stem Sentences: The position of a digit in a number determines its value. There are 10 ones in a ten There are 10 tens in 100 The value of the digit ___ is ___ ones/tens ___ can be partitioned into ___ and ___ Each interval is worth ___</p>	
<p>Problem Solving Opportunities: Two-digit targets: https://nrich.maths.org/6343/note 6 beads: https://nrich.maths.org/152/note</p>	<p>Concrete Manipulatives: Dienes (Base 10) Place Value counters Rekenreks</p>	<p>Pictorial Representations:</p>
<p>Fluency Focus: The structure of 5 and a bit Number bonds to 10 and within 10 Counting in multiples of 2, 3, 5 and 10</p>		
<p>Blended Learning Opportunities: White Rose Digital Tools NumBots 1-minute maths TTRS</p>		

Unit planning grid

Lesson design

Each session commences with a retrieval exercise to reinforce fluency and build a strong foundation. The teacher adopts the 'I do' approach, exemplifying the primary skill of the lesson, ensuring clarity and comprehension. Subsequently, pupils collaborate in pairs, groups, or as a class to participate in the 'we do' phase, facilitating peer learning and interaction. Once the teacher is confident in the pupils' grasp of the concept, they transition to the 'you do' stage, allowing children to independently apply their newfound knowledge. This cycle continues until the targeted learning objective is achieved. As lessons draw to a close, all pupils engage in a deepening task, ensuring that reasoning and problem-solving are integral components of their mathematical journey. Some pupils may require additional scaffolding at this stage to ensure their success, fostering an inclusive learning environment for all.

Fluency

A set number of fluency questions are completed at the beginning of maths lessons in KS1 and KS2. The questions are linked to prior learning and are used as retrieval practice. Fluency is used as an opportunity to recap skills and consolidate number facts. Teachers have autonomy on the resources and strategies they use to support the fluency section of the lesson depending on the needs of their classes; these may include White Rose's Flashback 4, Big Maths Beat That, selecting appropriate strategies and comparing worked examples. Sometimes, a specific skill will need to be taught, with further fluency questions following later in the week.





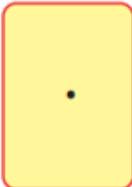
- **Times Tables RockStars**- Completed at least twice a week in Year 2 and KS2, however Year 4 will spend longer consolidating and learning the times tables.
- **NumBots** – In EYFS and KS1, NumBots will be used to support interventions for whole class or small groups.

Mastering Number at EYFS and KS1

EYFS and KS1 are part of the Mastering Number programme. The programme aims to secure firm foundations in the development of good number sense for all children from Reception through to Year 1 and Year 2. The aim over time is that children will leave KS1 with fluency in calculation and a confidence and flexibility with number. Teachers in EYFS use the lessons and resources, alongside the White Rose scheme of learning, whereas KS1 have four 15-minute sessions a week, in addition to their daily maths lessons.

Reasoning and Problem Solving

Every pupil has access to deepening opportunities at each stage of their learning journey. Teachers will exemplify the reasoning or problem-solving process using the 'I do' approach. Pupils will then be encouraged to work together or independently to solve similar questions using the same method; this will form part of the 'we do' and/or 'you do' stage of the lesson. These resources are sourced from Nrich, TestBase, White Rose and I see reasoning. For children seeking more advanced challenges, separate Mastery and Greater Depth questions will be provided at regular intervals. At Badgerbrook, we call these Dive Deeper Challenges. These opportunities will be identified collaboratively by the teacher and the child once they have demonstrated mastery of the core learning objectives. The Greater Depth questions will often be sourced from the NCETM Mastery Assessment documents (Appendix B), ensuring a reliable and rigorous extension to the curriculum.

	Decimals		
Using these cards can you make a number between 4.1 and 4.61?			
			
What is the smallest number you can make using all four cards? What is the largest number you can make using all four cards?			

Planning and teaching in EYFS

Maths is taught as part of the Mathematics Area of Learning in the EYFS Curriculum, which consists of two strands: Numbers, and Shape, Space, and Measure.

In EYFS, we follow the Mastering Number program to ensure continuity and progression into Year 1 and Year 2. This foundational approach is complemented by using White Rose to support and extend lessons.

Each week, children receive four whole class, teacher-led number lessons, along with one lesson on shape, space, and measure. Daily activities include independent, child-initiated maths activities, providing opportunities for exploration both indoors and outdoors. Additionally, weekly guided group sessions allow children to apply their whole class learning in a supportive setting.

Our planning builds on previous learning, emphasising mastery in key areas of Mathematics. Concepts are revisited through daily review and retrieval to reinforce prior learning.

Maths activities are integrated into continuous provision, considering children's interests and curriculum coverage. These activities are designed to be engaging and relevant, ensuring they cater to the learning needs and interests of the children. Planning follows the progression outlined in the Mastering Number resources and is updated daily to reflect the children's ongoing learning journey.

Assessment

Pupils' progress is regularly assessed using a combination of formative and summative assessments. This includes questioning, regular retrieval practice, assessment of work in books, and providing feedback. Before starting new units that are linked to the Ready to Progress Criteria, pupils will complete a pre-unit check based on statements from the previous year group. This helps teachers adapt their planning to meet the specific needs of their pupils. Additionally, teachers use a teacher assessment framework to evaluate children's learning against the National Curriculum standards.

Statutory assessments

In year 4, the children complete the Multiplication Tables Check (MTC) in June each year as well as interim data capture points throughout the year. Year 6 also take part in the Statutory Assessment Tests (SATs) that takes place in May each year.

Tracking Pupil Progress

In mathematics children are tracked in multiple ways:

- Baseline assessment in EYFS and tracking against Early Learning Goals
- Teacher assessment data tracking using INSIGHT
- Half termly pupil progress meetings
- MTC simulation tracking each half term in Year 4
- Tracking of EYFS to end of KS2 statutory assessment data
- Individual progress is reported to parents through two termly Parents' Evenings and an end of year report

Questioning and Reasoning Strategies used at Badgerbrook:

- How do you know? Justify Why?
- What's the same? What's different?
- Explain how you got your answer? What did you do?
- What do you notice?
- How many different ways can you show me?
- I do, We do, You Do
- Probing questions (staying with a child to probe deeper to check understanding)
- Say it again better (ask children to rephrase answers a second time to build a deeper, high quality answer)
- Whole class response: choral, whiteboard, thumbs up and down for true or false

Monitoring and Evaluation

Teachers are expected to keep up-to-date with subject knowledge and to use current materials that are available in school or on the government website. Training needs are identified as a result of whole school monitoring and evaluation, performance management and through self-analysis. The subject leader is keen to share best practice and disseminate up-to-date initiatives to staff via planned CPD and development time. This will ensure the subject is constantly evolving to meet the demands of curriculum expectations. In addition, external courses and work groups are made readily available to staff. Available courses are disseminated by the maths lead and SLT and are usually ran by (but not restricted to) The East Midlands Maths Hub.

The subject leader and the Senior Leadership Team all play a role in the monitoring of Mathematics at Badgerbrook Primary School. Regular monitoring via learning walks, book trawls and pupil/staff voice feedback ensures the subject is constantly being reviewed and regulated to ensure the best learning opportunities for all.

Safety

We ensure that all learning environments are well-organised and free from hazards to provide a secure space for children to engage with mathematical activities. Proper handling of mathematical tools and equipment, such as compasses, protractors, and calculators, is emphasised to prevent accidents. Children are instructed on the safe use of these tools, such as how to handle compasses carefully to avoid injuries.

Teachers are trained to create an inclusive and supportive atmosphere where all children feel safe to ask questions, express their ideas, and learn from mistakes without fear of ridicule. For instance, during group work or class discussions, respectful communication is encouraged, and any form of bullying or teasing is strictly prohibited. This approach fosters a positive learning environment that encourages exploration and growth in mathematical understanding.

Reporting to Parents

Progress in mathematics is reported to parents three times a year. Formal updates are provided during the autumn and spring parents' evenings, as well as through a comprehensive report at the end of the year. These meetings and reports offer detailed insights into each pupil's progress, highlighting achievements and areas for improvement.

In addition to these formal reports, teachers may informally share areas of success with parents throughout the year. This can include positive feedback on a pupil's performance in specific tasks or recognition of their hard work and improvement. If any concerns arise regarding a pupil's progress or understanding, teachers will promptly communicate with parents to discuss the issues and collaborate on strategies to support the pupil's learning.

Parents will also be informed each half term if their pupil will be part of an intervention program. Interventions are used both to close gaps in learning and to extend and challenge pupils. By maintaining regular and open communication, we ensure that parents are well-informed about their pupil's mathematical development and can actively participate in supporting their learning journey.

Feedback

Feedback is a crucial component of our mathematics teaching and learning. It provides pupils with clear, constructive insights into their performance, highlighting both strengths and areas for improvement. Our approach to feedback includes verbal comments during lessons, written comments in books and personalised one-to-one discussions following on from lessons. This continuous feedback loop helps pupils understand their progress, recognise their achievements, and identify specific steps they can take to enhance their learning. Additionally, timely and specific feedback enables teachers to address misunderstandings promptly and adjust instruction to meet each pupil's needs, fostering a supportive and effective learning environment.