



MATHS INTENT - what do we aspire for our children?

Mathematics is a creative and highly interconnected discipline that has been developed over centuries, providing the solution to some of history's most intriguing problems. It is essential to everyday life, critical to science, technology and engineering, and necessary for financial literacy and most forms of employment. A high-quality mathematics education therefore provides a foundation for understanding the world, the ability to reason mathematically, an appreciation of the beauty and power of mathematics, and a sense of enjoyment and curiosity about the subject.

National Curriculum 2014

Our school's key drivers and how they are manifested through Maths

Be Kind

- We encourage children to collaborate within maths and share their processes with talk partners and as a whole class. Children will listen respectfully to others and be thoughtful in their responses.

Be Proud

- Teachers model being proud of their successes with their maths learning, both presentation and content
- Children are able to articulate their successes and progress as young mathematicians
- Children take pride in their maths learning and presentation
- Children's learning is celebrated at school and at home

Strive for Success

- We introduce the children to famous mathematicians and highlight the importance of maths in the real world
- Our maths curriculum is a spiral curriculum where key concepts are introduced, revisited and deepened over time
- Sequencing of teaching and rehearsal, including spaced retrieval practise, allows children time to commit concepts, rules and principles to store in their long-term memory
- Children's learning is developed through the Concrete-Pictorial-Abstract (CPA) approach in order to build on their existing understanding and to develop their conceptual understanding
- Mathematical thinking is developed and scaffolded with sentence stems both in oracy and writing

Aims

Our 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 nonroutine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.
- understand the practical advantages of mathematics and its purpose in the real world
- develop a positive attitude towards mathematics and demonstrate resilience in their learning

Mathematics is an interconnected subject in which pupils need to be able to move fluently between representations of mathematical ideas. The programmes of study are, by necessity, organised into apparently distinct domains, but pupils should make rich connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems. They should also apply their mathematical knowledge to science and other subjects.




Oracy

At Stoke Park Primary, we recognise the vital role that oracy plays in the lives of our children, both during their time in primary school and for the rest of their lives. Research shows that oracy not only acts as a powerful tool for learning but is a key skill in itself which employers actively seek. By ensuring that children have explicit opportunities to develop their oracy skills as well as opportunities to learn through oracy across the curriculum, we aspire to create young adults who are able to work confidently, articulately and collaboratively. We promote oracy through Maths by teaching vocabulary that allows the children to explain, discuss, debate and share their ideas and by providing regular opportunities for pupils to explain their reasoning.

Long term sequence

COVID response

At Stoke Park, we will continue to follow the White Rose Maths progression of learning which has interwoven the previous year groups' summer learning to ensure children are fully equipped with the skills to access the curriculum for their year group.

Since the Covid-19 pandemic, the White Rose progression documents have been updated accordingly: to enable key teaching points to be highlighted, essential content that the children may have forgotten to be recapped and to flag any content that might not have been covered during the school closures period. These areas are indicated by an  in the small steps of each progression document. The updated schemes of learning can be accessed on <https://whiterosemaths.com/primary-sols/>

National Tutoring Programme

From January 2022, funding for The National Tutoring Programme will be allocated to Pupil Premium and disadvantaged children in maths. Each child will receive 15 hours of 1:1 or 1:3 support which will be in addition to the quality first teaching they access with their Class Teacher. This programme will enable any gaps to be filled and progress to be identified.

Big Picture

- [White Rose Overview to show progression across the year groups in each strand.](#)
- Knowledge and skills progression document to show progression between EYFS and Y1, skills specific yearly content
- Number Sense overview for EYFS
- [Number Sense overview for KS1](#)
- [Vocabulary, sentence stem, definitions and key questions progression](#) (page 48-122 - Nursery - Year 6)
- [Calculation Policy Progression - Addition \(page 1-12\) and Subtraction \(page 13-24\)](#)
- [Calculation Policy Progression - Times Tables \(page 1-19\), Multiplication \(page 20-29\) and Division \(page 30-44\)](#)

Assessment

- Standardised assessments: EYFS Baseline, KS1 & KS2 SATs, MTC
- Formative assessment; ongoing during lessons and across units of work. Two forms of assessment that are used daily are the hinge question and the same day intervention model
- PiXL assessments and QLAs are used to identify gaps in learning and directly inform planning
- Rapid recall of multiplication and division facts are assessed through daily practise
- EYFS and KS1 are assessed daily on their number facts calculation strategies



IMPLEMENTATION - how will we deliver the curriculum?

Linking curriculum and pedagogy: subject specific approaches

Across a unit, the learning is generally built up in the following way:

- Key learning is broken down into small steps which are sequential and build upon each other
- CPA approach is integrated within each of these small steps so that children are able to develop a conceptual understanding and build upon their fluency and problem solving and reasoning skills
- Mathematical talk is used as a scaffold across the unit
- Vocabulary is introduced and revisited throughout the unit
- Children are exposed to varied representation across the unit in line with the calculation policy

Lesson design

Times Tables

Times tables are taught systematically, following the Ashley Down Times Table Scheme.

The idea behind this scheme is that the children learn about commutativity, starting with the biggest number first, e.g. $9 \times 2 = 18$. This means that when they learn their 9 times tables, they will have already learnt this fact along with many others, resulting in them only needing to learn $9 \times 9 = 81$.

The table below demonstrates that only 36 facts are needed to learn up to 9×9 .

36 facts to take us up to 9×9 – Building block facts

Year 3	Year 3	Year 3	Year 4	Year 4	Year 4	Year 4	Year 4
2 x	5 x	3 x	4 x	6 x	7 x	8 x	9 x
2 x 2							
3 x 2	3 x 5	3 x 3					
4 x 2	4 x 5	4 x 3	4 x 4				
5 x 2	5 x 5						
6 x 2	6 x 5	6 x 3	6 x 4	6 x 6			
7 x 2	7 x 5	7 x 3	7 x 4	7 x 6	7 x 7		
8 x 2	8 x 5	8 x 3	8 x 4	8 x 6	8 x 7	8 x 8	
9 x 2	9 x 5	9 x 3	9 x 4	9 x 6	9 x 7	9 x 8	9 x 9
8 facts	7 facts	6 facts	5 facts	4 facts	3 facts	2 facts	1 fact

A 'Times Table Fact of the Day' is introduced daily before the maths lesson.

After all multiplication facts for this times table have been taught, the children complete a times table test booklet related to multiplication facts they have been learning. One test is completed after morning registration and one test is done following afternoon registration. Two minutes are allocated to each of these tests and they are marked with the children.

Assessment

- Formative assessment is ongoing during lessons and across units of work. Two forms of assessment that are used daily are the hinge question and the same day intervention model
- Rapid recall of multiplication and division facts are assessed through daily practise
- EYFS and KS1 are assessed daily on their number facts calculation strategies

Curriculum enrichment

- Significant and diverse maths individuals
- Maths Challenges at home (linked to Times Table Rockstars)
- Keys to Success
- Maths Literature



- Maths and Art day
- Maths and women

IMPACT - how do we know our curriculum is effective?

Pupil Voice

Pupils will use maths terminology, talk about subject specific concepts & skills, talk about the 'why' behind the work, explain how learning builds on previous knowledge, engage in and make progress regardless of starting points.

High quality outcomes:

Data with analysis from summative assessments, PiXL

Book studies demonstrate pride and effort. Children's work captures an increasing understanding of subject specific concepts and knowledge, and demonstrates a clear sequence of learning.