



Maths Policy

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Maths Policy

Intent

Mathematics teaches children how to make sense of the world around them, through developing their ability to calculate, reason and solve 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.

At Wistaston Church Lane Academy, our aim is to create fluent, confident, and curious mathematicians who can solve problems and use mathematical vocabulary confidently. We equip our pupils with the life skills they need to be able to flourish in the real world and promote a love of maths. We aim to ensure that, regardless of background and ability, every pupil has a rich and meaningful mathematics education.

At Church Lane, we have adopted a mastery approach to teaching Maths in order to deliver the three aims of the National Curriculum: fluency, reasoning and problem solving. Underpinning this pedagogy is a belief that all children can achieve in Maths. Our approach aims to provide all children with full access to the curriculum, enabling them to develop independence, confidence and competence 'mastery' in mathematics, in order for pupils to be independent mathematicians who are well equipped to apply their learning in the wider world.

Aims

Through our Maths lessons at Church Lane it is our aim to develop:

- Enjoyment and enthusiasm for mathematics and an awareness of the fascination of mathematics.
- Enjoyment of learning through practical activity, exploration and discussion.
- Confidence and fluency in mathematical knowledge, concepts and skills.
- An ability to use and apply mathematics across the curriculum and in real life.
- An ability to solve problems, by applying their skills to a variety of routine and non-routine problems. To reason, to think logically, and to work systematically and accurately.
- An ability to reason mathematically and explain relationships using mathematical language.
- An understanding of mathematics through a process of enquiry and experiment.
- Initiative and an ability to work both independently and to use our school values by working in cooperation with others.



Implementation

Maths is taught using the mastery approach that encourages each child to master mathematical concepts. Children learn through daily maths lessons which allows each child to benefit from concrete, pictorial and abstract experiences in order to cement their knowledge and build confidence in all areas of mathematics. This method of teaching challenges children appropriately in each year group by using a variation approach to learning. This allows children to apply their existing knowledge during the initial discovery of a concept followed by applying new learning in problem solving and reasoning

In school we ensure we follow 'The National Curriculum Programme of Study for Mathematics 2014' and 'The EYFS Framework 2022'. We also incorporate the 2020 non-statutory 'Ready to Progress' guidance.

As a school we ensure only high-quality resources are used to support learning and these are selected from White Rose, Power Maths, NCETM, I see Reasoning and Problem Solving, Number Blocks and Ten Town.

Teaching and Learning

The school uses a variety of teaching and learning styles in mathematics lessons. Our principal aim is to develop children's knowledge, skills and understanding in mathematics. We do this through a daily mathematics lesson where children are given opportunities for:

- Practical activities and mathematical games
- Problem solving
- Open and closed tasks
- Individual, group and whole class discussions and activities
- A range of methods of calculating e.g. pictures, mental, written methods
- Working with computers as a mathematical tool
- Using a wide range of support resources e.g. number squares, digit cards and number lines
- Using and applying their learning in everyday situation
- Reason to explain their mathematical thinking

Most Maths lessons will include recording in yellow maths books.

One lesson a week focuses on children's arithmetic skills to improve children's mathematical fluency. Children also have opportunities throughout the week to practise these skills in morning tasks.



Lessons

In all lessons, aims are clearly displayed and discussed and teachers' expectations of children's learning are high. The emphasis in lessons is to make teaching interactive, lively, exciting to engage all children and to encourage mathematical talk.

All lessons begin with a short assessment to support *retrieval practice* and develop *long-term memory*.

Concepts are taught through clear modelling and explaining so that children develop their knowledge and understanding of mathematical concepts. Our approach incorporates using **concrete** objects, **pictures**, **words and numbers** to help children explore and demonstrate mathematical ideas, enrich their learning experience and deepen understanding at all levels.

Concrete – children have the opportunity to use concrete objects and manipulatives to help them understand and explain what they are doing.

Pictorial – children then build on this concrete approach by using pictorial representations, which can then be used to reason and solve problems.

Abstract – With the foundations firmly laid, children can move to an abstract approach using numbers and key concepts with confidence.

Lessons involve elements of:

- Instruction – giving information and structuring it well;
- Demonstrating – showing, describing and modelling mathematics using appropriate resources and visual displays;
- Explaining and illustrating – giving accurate and well paced explanations;
- Questioning and discussing; - to encourage deeper mathematical thinking and talk;
- Consolidating; - learning could be consolidated through a range of activities such as concrete or abstract and children could consolidate their learning through fluency, problem solving or reasoning activities.
- Reflecting and evaluating responses – identifying mistakes and using them as positive teaching points;
- Summarising – reviewing mathematics that has been taught enabling children to focus on next steps

Children move through the different stages of their learning at their own pace.

Children who have shown their understanding at a deep level within the unit, will have opportunities to apply these skills in a **GREATER DEPTH 'Going Deeper'** activity. This should be challenging and ensure that children are using more than just one skill to be able to answer the mathematical problems.

Reasoning and problem solving are integral to the activities children are given to develop their mathematical thinking.



Resources are readily available to assist demonstration of securing a conceptual understanding of the different skills appropriate for each year group.

Children are encouraged to explore, apply and evaluate their mathematical approach during investigations to develop a deeper understanding when solving different problems/puzzles.

A love of maths is encouraged throughout school via links with other subjects, applying an ever growing range of skills with growing independence.

Special Educational Needs & Disabilities (SEND)

Daily mathematics lessons are inclusive to pupils with special educational needs and disabilities. Where required, children's support plans incorporate suitable objectives from the National Curriculum for Mathematics and teachers keep these in mind when planning work. These targets may be worked upon within the lesson as well as on a 1:1 or group basis outside the mathematics lesson.

Maths focused intervention in school helps children with gaps in their learning and mathematical understanding. These are delivered by class teachers and trained support staff and overseen by the SENCO and/or the class teacher. Within the daily mathematics lesson teachers have a responsibility to not only provide differentiated activities to support children with SEND but also activities that provide sufficient challenge for children who are high achievers. It is the teachers' responsibility to ensure that all children are challenged at a level appropriate to their ability.

Planning

Long and Medium Term Planning

At Church Lane our long-term planning is obtained from the White Rose Maths Scheme. For the academic year 2021/2022 we created bespoke long-term plans based around the needs of pupils after the COVID-19. Using the National Curriculum and Ready to Progress documents staff highlighted objectives that had been taught during lockdown or hadn't been taught at all. This information was then passed onto the next year group so that this information could be added to the long-term plans.

Our medium-term planning is obtained from the small steps in the White Rose Scheme and the Power Maths Scheme that are closely aligned. The small steps support the mastery approach to teaching and learning and ensure a deep understanding, confidence and competence in maths. The small steps allow teachers to stay within the required year group, they support with the pitch of lessons and support the idea of depth before breadth. The plans in both schemes support pupils working together as a whole group and provide plenty of time to build reasoning and problem solving elements into the curriculum. The planning documents also uses the highly effective, concrete > pictorial > abstract approach, which supports our children in becoming mastery mathematicians.



Short Term planning

The White Rose and Power Maths schemes, alongside NCETM resources support weekly planning. Teachers are not expected to produce short term plans for mathematics. However, the new mathematics being taught in each lesson (including key points/questions/steps and difficult points/anticipated misconceptions) is identified explicitly in the lesson slides (PowerPoint presentations). Teachers carry out formative assessment continually and, at times, in responding to this, they will alter the pace of progression through the planned material in order to better meet the needs of children.

Times Tables

At Church Lane, the quick recall of multiplication and division facts (times tables) are viewed with high importance. The ability to recall these facts quickly enables children to answer related questions with ease.

It is therefore important that we approach the teaching and testing of times tables in a similar and progressive format from Year 1 to Year 6.

The National Curriculum expectation of times tables in each Year Group is as follows:

Year 1: Count in jumps of 2, 5 and 10

Year 2: 2x, 5x, 10x

Year 3: 3x, 4x, 8x

Year 4: 6x, 7x, 9x, 11x, 12x

Year 5: All x and \div facts (12 \times 12)

Year 6: All x and \div facts (12 \times 12) and related language/symbols e.g. % and square root

From the 2019/20 academic year onwards, schools in England are required to administer an online multiplication tables check (MTC) to year 4 pupils. The purpose of the MTC is to determine whether pupils can recall their times tables fluently, which is essential for future success in mathematics. It will help schools to identify pupils who have not yet mastered their times tables, so that additional support can be provided. To encourage children's excitement for learning times tables we have a subscription to Times Tables Rockstars which enables children to practise quick recall of times table facts to music. Children compete against each other and aim to be at the top of the leader board.

Assessments

Termly assessments are carried out across the school using the assessment materials for each year group provided by NFER. These materials used alongside judgements made from class work support teachers in making assessment for each child which are in line with the assessment policy, this information is entered onto Insight.

Regular Pupil Progress Reviews take place for all classes. Progress of pupils is discussed and appropriate intervention considered and put in place where appropriate.

Long term Y2 and Y6 complete the national tests (SATs) in May.



Expected Impact

The subject leader, along with school leaders, will monitor the quality of teaching and learning through book monitoring, lesson observations and learning walks.

At Church Lane it is expected that every teacher has high expectations of each pupil, all maths lessons are engaging and that every child is challenged to ensure they make good progress.

Children that attend Church Lane will be fluent mathematicians with the ability to reason and problem solve, using mathematical vocabulary to support their thinking. Our children will be able to link old and new learning experiences together to help them develop a deeper understanding of maths and high-quality dialogue within the classroom will make sure our children are challenging their own thoughts with those around them whilst broadening their knowledge and understanding.

At Church Lane we will instil a love of maths in children so that they continue to be curious mathematicians as they progress into higher education. We teach using the mastery approach to support children, in not only mastering the curriculum, but also to ensure they have a deep understanding of Maths which will support them in high school and beyond.