

Mathematics at St. Michael's



We aspire to teach mathematics as a core life skill as well as a creative and highly inter-connected discipline within the broader curriculum. Lessons should develop a foundation for understanding the world, the ability to reason mathematically, and a sense of enjoyment and curiosity about the subject.

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.

Mathematics is an interconnected subject in which pupils need to be able to move fluently between representations of mathematical ideas. Pupils should make rich connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems.

EYFS

Reception (Sycamore)

The following statements are taken from the 2020 Development Matters and are the prerequisite skills for mathematics within the National Curriculum. The statements for mathematics are taken from the following areas of learning:

- Communication and Language
- Mathematics
- Understanding the World

Mathematical Vocabulary	
Communication and Language	<ul style="list-style-type: none">• Learn new vocabulary.• Use new vocabulary throughout the day
Number and Place Value	
Mathematics	



Counting	<ul style="list-style-type: none"> Count objects, actions and sounds. Count beyond ten. Subitise.
Identifying, Representing and Estimating Numbers	
Reading and Writing Numbers	<ul style="list-style-type: none"> Link the number symbol (numeral) with its cardinal number value. Compare numbers.
Compare and Order Numbers	
Understanding Place Value	<ul style="list-style-type: none"> Understand the 'one more than/one less than' relationship between consecutive numbers. Explore the composition of numbers to 10.
Solve Problems	<ul style="list-style-type: none"> Solve real world mathematical problems with numbers.
Addition and Subtraction	
Mathematics	
Mental Calculations	<ul style="list-style-type: none"> Automatically recall number bonds for numbers 0-5 and some to 10.
Measurement	
Mathematics	
Describe, Measure, Compare and Solve	<ul style="list-style-type: none"> Compare length, weight, and capacity.
Properties of Shapes	
Mathematics	
Recognise 2D and 3D Shapes and their Properties	<ul style="list-style-type: none"> Select, rotate and manipulate shapes in order to develop spatial reasoning skills.
Compare and Classify Shapes	<ul style="list-style-type: none"> Compose and decompose shapes so that children can recognise a shape can have other shapes within it, just as numbers can.
Position and Direction	
Understanding the World	
Position, Direction and Movement	<ul style="list-style-type: none"> Draw information from a simple map.
Mathematics	
Patterns	<ul style="list-style-type: none"> Continue, copy and create repeating patterns.
Statistics	
Mathematics	
Record, Present and Interpret Data	<ul style="list-style-type: none"> Experiment with their own symbols and marks, as well as numerals.

National Curriculum documentation

Key Stage 1 (Willow and Cherry)

Key Stage 2 (Redwood, Elm, Beech, Oak)

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/335158/PRIMARY_national_curriculum_-_Mathematics_220714.pdf



Curriculum Implementation

Children study mathematics daily covering a broad and balanced mathematical curriculum including elements of number, calculation, geometry, measures and statistics. We also teach maths in a cross curricular manner as well as discretely to teach the practical application of mathematical skills. For example, this could be through links with Geography – map reading, reading scales, co-ordinates, directions, Computing – creating spreadsheets, use of data handling programmes, Technology – measuring, recording or Science – measuring, recording data, interpreting data. ICT is used across all year groups to offer our pupils a range of exciting activities to challenge and inspire them.

Lessons focus not only on the mathematical methods, but also on the use and understanding of the correct mathematical vocabulary. Through mathematical talk, children will develop the ability to articulate, discuss and explain their thinking.

Wherever possible, children will be given opportunities to undertake practical activities. Teachers will use the CPA (Concrete, Pictorial, Abstract) approach to new concepts. At St Michael's lessons are planned following the White Rose Maths mastery scheme of small steps, using guidance from the NCETM and the DFE Mastery documents. Sessions have a particular focus on fluency, reasoning and problem solving. Every opportunity will be sought to relate mathematical experiences to real life situations.

All children are catered for within the maths lessons ensuring that the teacher offers the necessary support and challenge for each individual to make progress. Pre-teaching sessions and small group interventions may be organised to help some pupils to consolidate methods of calculation and to build their confidence in their application of these to reasoning or problem solving questions.

Maths is widely promoted across the school through corridor displays, Good Work examples and working walls that the children can utilise to support their learning in classrooms. Staff are supported by the maths co-ordinator, who is part of a Maths Mastery group, trained by the NCETM.

Assessment

Verbal feedback is constantly used to progress the learning in the lessons. Mini-plenaries and modelled intervention are used to address misconceptions. Scaffolded and targeted questioning embeds learning as well as written marking comments and extension tasks.

Pupil progress in Mathematics will be monitored continually and attainment measured at intervals throughout each year using White Rose materials. Summative tests well as a pupils' progress in class are used to inform class tracking data on Arbor.

Termly written reports provide parents with regular updates regarding their child's age related progress and 'next steps' are discussed at Parent Consultations.

Pupils sit the statutory end of key stage maths tests in May. Year 2 tests are delivered and marked by our staff, whilst Year 6 papers are sent away for external marking.

Schools also administer an online multiplication tables check to Year 4 pupils. To support the children with their multiplication practice we use a range of online learning platforms.



Home/School links

Parents can support their children by encouraging them to:

- learn number bonds and multiplication tables.
- complete any Maths homework tasks that are set.
- try Maths websites identified on the termly overview or class webpage to support their current classroom focus.

Online learning (as in the cases of National Lockdown or pupils isolating with COVID) is set via the school's Google Classroom links and mirrors what is being covered in class or provides links to live lessons.

Vision

Our overriding aim for this subject is develop in our children a positive attitude towards mathematics and to facilitate an enjoyable learning experience. All pupils should be able to think clearly, logically and demonstrate the persistence required to solve real life problems and to meet the challenges facing them as citizens. They will understand that this may be achieved by working co-operatively as well as independently as they share our school's Christian vision to "Shine as lights in the World."

