

St. Margaret's Anfield Church of England Primary School

Jesus said, "Love one another as I have loved you" (John 13:34).
Therefore, by faith and work, be the change you want to see.

With God, all things are possible.



Policy for Mathematics

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Date	Action	Review Date
March 23	Adopted by Governing Body	March 24
February 2026	Final Approved by FGB	February 2027

Aims

The 2014 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.

The National Curriculum

The 2014 National Curriculum Programmes of Study are, by necessity, organised into 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 other curriculum subjects, where appropriate.

Teaching and Learning of Mathematics

Foundation Stage:

The Early Years Foundation Stage (EYFS) Curriculum is used by our Early Years teachers as a guide to support their teaching of Mathematics in the Foundation Stage. Our practitioners work to provide pupils with a strong base on which to build their mathematical knowledge. The pupils have the opportunity to talk and communicate in a wide range of situations and to practice and extend their range of vocabulary and mathematical skills. The environment is planned and facilitated to develop mathematical reasoning and understanding. The pupils are provided with opportunities to explore, enjoy, learn about, and use Mathematics in a range of personalised activities using a variety of open-ended resources. Mathematics is planned on a weekly basis with the pupil's next step requirements in mind. Number lessons are based on the Mastering Number programme and delivered on a daily basis. Mathematics is taught in adult led situations; child initiated and is always planned for within continuous provision resources that are provided to give them opportunities to use their mathematical skills in real life situations.

The National Curriculum Programmes of Study

Key Stages 1 and 2:

Our Key Stage 1 and 2 teachers use White Rose Hub's small steps to map out their Maths curriculum planning. As part of Maths lessons, teachers use resources from White Rose Hub and other source such as Classroom Secrets, Primary Maths Stars, I See Reasoning and Problem Solving by Gareth Metcalfe, MathsBot and Twinkl Mastery.

Maths lessons take a mastery approach to teaching; they start with a 'While You Wait' (WYW) or Recap activity which is either a way to ensure retention from previous learning or as an access point to future learning. Lessons begin with exploring Mathematical vocabulary that is relevant to the learning that day; this is followed by chanting or counting of number sequences. Teachers then teach a new concept before allowing children to answer fluency questions independently alongside problem solving and reasoning questions.

Mastering Number (NCETM) and 4 a day:

Pupils in Reception follow the Mastering Number programme. The programme of study is designed to ensure a deep and lasting understanding of mathematical procedures and concepts. It allows for progression and scaffolding of key skills and knowledge. The programme plans for four key adult input sessions. In Reception, the objectives from these adult inputs are extended through small groups, classroom routine and continuous provision enhancement suggestions so that the children have the opportunity to practice the skills that they learn and develop a mastery of mathematics.

Pupils in Key Stage 1 and 2 start every day with a 4 a day activity which pupils complete independently but then go through with their teacher. 4 a day consists of four questions related to arithmetic and is used as a chance to consolidate learning or clear up misconceptions, a 'number of the day' activity and a 'problem' of the day.

SEND

When pupils with specific special educational needs cannot access the National Curriculum that is applicable to their key stage and after discussion with the SENCO, an adapted curriculum with personalised outcomes will be planned for, allowing strands such as number to be broken down into smaller steps, which children can access and show progress within.

Inclusivity

At St Margaret's Anfield, pupils of all backgrounds, ethnicities, gender and race have the same right to high quality teaching and understanding of Mathematics.

Calculation Policy

Teachers follow our school Calculation Policy which has been adopted by White Rose Hub.

Cross curricular

Opportunities are used to draw mathematical experiences out of a range of activities in other subjects, such as in PE, Science and other subjects studied to enable pupils to apply and use Mathematics in both real life and academic contexts. Pupils are encouraged to become 'Maths detectives' by identifying areas of Maths which crop up in either another subject or in real life situations, e.g. drawing a line graph in Science or going to the shop and paying for some sweets.

Planning in Foundation Stage

Planning in the Foundation Stages corresponds to the objectives outlined in the EYFS Statutory Framework Early Learning Goals which include number and numerical pattern. Mathematics objectives are taught in a variety of different ways throughout the year both in Nursery and Reception. In the Early Years, experiences are planned to develop pupils' love for Maths as well as their Mathematical knowledge, understanding and skills. We plan to extend pupils' learning through a variety of opportunities, whether these are adult led, adult initiated or inspired by child led or child-initiated occurrences. Planning is based on the pupil's unique learning needs which we obtain through observing and listening to the pupils. In Reception, we also follow the NCETM Maths Mastery Programme which gives a scaffolded progression of skills and knowledge that children need for a strong mathematics base. In the Early Years we know that Mathematics is very important, therefore our planning is play based and incorporates provision for both the indoor and outdoor environment.

Planning in Key Stages 1 and 2

Years 1-6 follow the small steps to learning set out by White Rose Hub. Due to this, each year group plans daily lessons covering the following topics.

	Autumn Term	Spring Term	Summer Term
Year 1	Number: Place Value (within 10) Number: Addition and Subtraction (within 10) Number: Place Value (within 20)	Number: Addition and Subtraction (within 20) Measurement: Length and Height Number: Place Value (within 50) Multiplication and Division Measurement: Weight and Volume	Geometry: Properties of Shape Geometry: Position and Direction Number: Fractions Number: Place Value (within 100) Measurement: Money Measurement: Time
Year 2	Number: Place Value Number: Addition and Subtraction Measurement: Money Statistics Number: Multiplication and Division Measurement: Weight and Capacity	Number: Multiplication and Division Measurement: Length and Height Statistics Number: Fractions Measurement: Time	Geometry: Properties of Shape Geometry: Position and Direction
Year 3	Number: Place Value Number: Addition and Subtraction Measurement: Money Number: Multiplication and Division Measurement: Length and Perimeter Statistics	Measurement: Time Measurement: Mass and Capacity Statistics Number: Fractions	Number: Fractions Statistics Geometry: Position and Direction
Year 4	Number: Place Value Addition and Subtraction Measurement- Money Statistics Number: Multiplication and Division Measurement: Perimeter Number: Multiplication and Division Measurement: Area	Measurement: Time and Money Number: Fractions Statistics Number: Fractions and Decimals	Geometry: Properties of Shape Position and Direction

Year 5	Number: Place Value Addition and Subtraction Statistics Number: Multiplication and Division Measurement: Perimeter & Area Measurement: Converting Units	Measurement: Volume Number: Fractions, Decimals and Percentages Statistics	Geometry: Properties of Shape Position and Direction
Year 6	Number: Place Value Addition and Subtraction Number: Multiplication and Division Measurement: Converting Units Number: Fractions Measurement: Perimeter & Area Statistics	Measurement: Volume Number: Fractions, Decimals and Percentages Number: Algebra & Ratio Statistics	Geometry: Properties of Shape Position and Direction

Springboard Sessions.

Pupils who are highlighted in Years 6 as needing additional support have weekly 'Springboard' sessions with Mr McHale at 8:15-8:45 twice a week to aid and equip them to grasp the basic skills in Mathematics. Mr McHale initially addresses arithmetic questions; supporting pupils with the foundations of calculating before moving onto reasoning problems where pupils can apply their knowledge. These groups are to help the pupils make progress and gain confidence in Maths to hopefully aid pupils in their Maths lessons in class and allow them to achieve their age-related expectation by the end of the academic year/Key Stage.

SAT Booster Sessions

Annually, from February until May, all Year 6 pupils are offered small group tuition for 1 hour after school with a Maths focus. Pupils are grouped based on their ability to allow for teaching that is fine tuned to the needs of the pupils in the group. These sessions are used to practice the four operations needed to consolidate arithmetic skills and over time, the sessions move on to applying those skills to reasoning questions.

Times Table Rockstars/NumBots

Pupils in every year group have individual log-in details to access the TT Rockstar website which they actively access at home as well as in school. This website is specific to building on knowledge of times tables and working towards becoming secure in times tables up to 12X12. This interactive resource can be used in KS1 and KS2 whereby pupils are able to practice the tables suitable for their year group in the hope that by the end of Year 4, they'll be fluent in all of them. NumBots is used lower down the school to practice basic skills such as adding and subtracting and number bonds.

Enrichment Opportunities

Subject leaders are always looking to enhance to enhance the Mathematic curriculum with extra opportunities for pupils to gain experiences and access resources that they may otherwise not have access to. Enrichments which will continue to develop include Maths competitions at local high schools, tax and money workshops. It is important that our pupils get as much exposure to the wider world of Mathematics, so they continue to be enthused by the subject. We also encourage the pupils to participate in Half-Term Challenges, linking math's to the outside world. Winners are announced and celebrated on the first Friday assembly back. The pupils are also invited to take part in events such as Liverpool Math's Party Day, NSPCC Number Day and World Math's Day.

Subject Ambassadors

2 pupils from year 6 and 2 pupils from year 5 have been chosen to be the voice of our subject and help us lead Maths in our school.

Resources

The use of Mathematics resources is integral to the teaching and learning of Mathematics and thus planned into our teaching and learning in this subject. We have a wide variety of quality equipment and resources, both tangible and computer based, to support our teaching and learning. These resources are used by our teachers and pupils in a number of ways which help to demonstrate/model an idea, an operation or method of calculation.

Homework

Mathematics homework is set for pupils in Year 1 - Year 6 each week through My Maths where pupils are able to practice skills taught in school at home.

Parents/Carers

St. Margaret's Anfield School aims to involve parents/carers in their pupil's learning as much as possible and to inform them regularly of their child's progress in Mathematics. Parents/carers have the opportunity to meet with child's class teacher at least twice a year at Parent Consultation Meetings and receive written reports at the end of the academic year. Parents/carers are encouraged to speak to their child's teacher at any point during the year, either informally or by making a specific appointment. Parents/carers are encouraged to support their pupils with homework.

Subject Leader

The role of the Maths subject leader is to provide professional leadership and management in Mathematics in order to secure high quality teaching, effective use of resources and high standards of learning and achievement for all pupils.

This will be achieved by affecting the following key areas:

- Strategic direction and development.
- Teaching and learning (including planning, marking and presentation).
- Leading and managing staff.
- Efficient and effective deployment of staff and resources.

The Subject Leader has regular discussions with the Head Teacher, SLT and school governors about the teaching and learning in Mathematics. All school leaders will be an integral part of our half-termly progress and attainment meetings highlighting the strengths and areas for development within the subject.

Assessment, Record Keeping and Reporting

Pupils' standards and achievements in Mathematics are assessed in line with the School's Assessment Policy. Assessment in Mathematics for Years 1-6 includes:

1. Written feedback is given to pupils where appropriate. Teachers assess children's individual pieces of work using codes: NA (not achieved), PA (partially achieved) and (A) achieved next to the lesson's learning objective. Teachers may leave feedback regarding targets, misconceptions and next steps when necessary.
2. Throughout the term, all teachers are expected to make assessments of pupils' achievements against the National Curriculum Programme of Study through formative assessments such as ongoing marking strategies. This is used to support future planning of lessons. Teachers then use our internal database at the end of every term to assess pupils in Mathematics using 'B, WC, WB, WA, OT or Above' according to the child's attainment and achievement in Mathematics.
3. All year groups take part in termly pupil progress meetings with the Deputy Head (assessment lead), Head Teacher, SEND lead and well-being team to ensure everything is put in place to help all pupils progress and achieve in Maths in our school.
4. At the end of each topic the children complete a post-assessment to identify gaps in their learning.

Assessment plays an important part within the Early Years. It can help us to recognise pupils' progress, understand their needs and plan activities to extend and develop learning further. The pupil's mathematical skills are assessed through ongoing observation and evidenced within learning journals. It is also assessed half termly using more formal methods. The pupils are also inclusively assessed against Early Learning Goals at the end of Reception.

Year	Assessments
Foundation stage	Attainment on entry relating to Early Year Goals Attainment on exit relating to Early Year Goals
Year 1	Baseline tests - all pupils Teacher assessment and sampling testing throughout the academic year End of year tests - all children
Year 2	Baseline tests - all pupils Testing throughout the academic year KS1 end of year SATs
Year 3	Baseline - all pupils Teacher assessment and sampling testing throughout the academic year End of year tests - all children
Year 4	Baseline - all pupils Teacher assessment and sampling testing throughout the academic year Multiplication Check - all pupils End of year tests - all pupils
Year 5	Baseline - all pupils Teacher assessment and sampling testing throughout the academic year End of year tests - all pupils
Year 6	Baseline tests - all pupils Testing throughout the academic year KS2 end of year SATs

Year 4 Multiplication Check (MTC)

In June, all Year 4 pupils are required to sit a statutory multiplication test.

The purpose

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.

What is it?

The MTC is an on-screen check consisting of 25 timetables questions, within the 2 to 12 timetables. The pupils will answer 3 practice questions before moving on to the official check and will then have 6 seconds to answer each question, with a 3 second break between each. On average, the check should take no longer than 5 minutes to complete.

Monitoring and Review.

The Head teacher, Senior Leadership Team and Mathematics Subject Leader will monitor the effectiveness of this policy on a regular basis. The Head teacher and Mathematics Subject Leader will report to the Board of Governors on the effectiveness of the policy at least annually and, if necessary, make recommendations for further improvements.