



Queens C of E Academy
Diocese of Coventry MAT

Queens
England

Church of
Academy

Learning and Growing in the Love of God

Mathematics Policy

Adopted by the Leadership Team

April 2024

Approved by Governors

April 2024

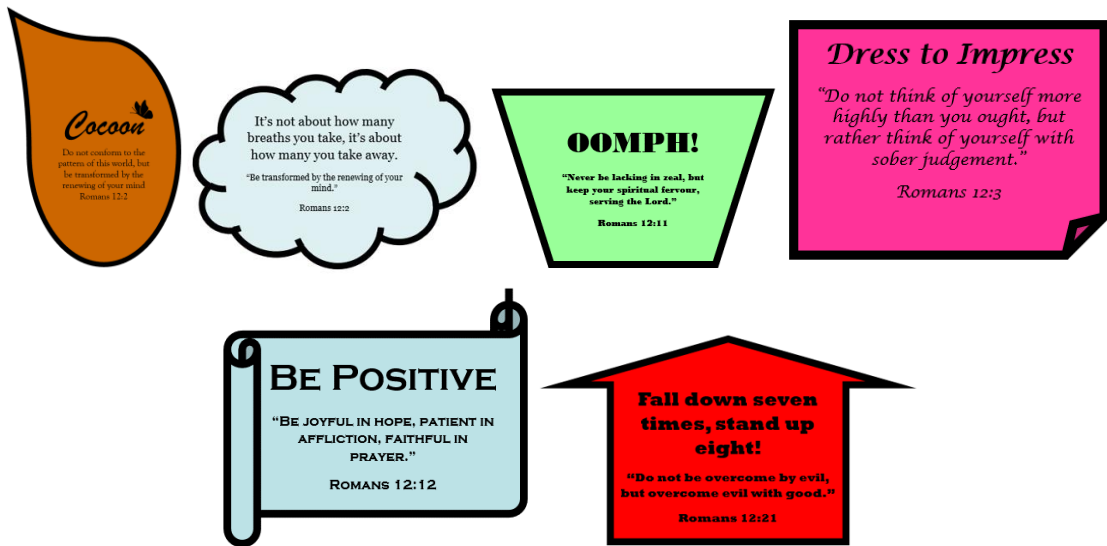
Signed by Chair of Governors

April 2024

To be reviewed

February 2026





INTRODUCTION

The policy is underpinned by the school's core value:

'Every Child Matters, Everyday'

At Queens C of E Academy, we believe that mathematics is an essential tool for everyday life. It is a whole network of concepts and relationships; which provide a way of viewing and making sense of the world. It is used to analyse and communicate information and ideas to tackle a range of practical tasks and real life problems. We aim to provide the pupils with a mathematics curriculum and high quality teaching to produce individuals who are numerate, creative, independent, inquisitive, enquiring and confident. We want all of our children to be forward thinking mathematicians, preparing them for their life long journey.

It is our aim to develop:

- A positive attitude towards mathematics and an awareness of the fascination of mathematics
- Competence and confidence in mathematical knowledge, concepts and skills
- An ability to solve problems, to reason, to think logically and to work systematically and accurately.
- Initiative and an ability to work both independently and in cooperation with others
- An ability to communicate mathematics
- An ability to use and apply mathematics across the curriculum and in real life situations
- An understanding of mathematics through a process of enquiry and experimentation

All these points will be underpinned with the children having a good, strong understanding of numbers.

Intent

Rationale

At Queens Church of England Academy, we celebrate mathematics as a tool that is essential to everyday life. The majority of children at Queens have the opportunity to become competent with the skills required of a KS2 mathematician through our curriculum that aims to develop their fluency, reasoning and problem solving skills. Children hone their skills independently as well as developing respect for others' opinions through listening, challenging and accepting ideas when problem solving as a group. Children at Queens learn to recognise that Mathematics is critical to science, technology and engineering as well as important for careful management of money and any aspirations they may have for the future and the next stage of their learning journey.

Principles

- Policy and provision are evaluated and reviewed regularly
- Resources of time, people and equipment are planned, budgeted for and detailed when appropriate in the Mathematics Action Plan
- Supported by the Leader of Learning for Mathematics, teachers engage in professional development through CPD, joint moderation and the chance to work with other colleagues across the MAT schools to optimise the quality of teaching in mathematics
- The governing body discharge their statutory responsibility with regard to mathematics
- Planning of mathematics ensures continuity and progression across all year groups and key stages

Implementation

Provision

Pupils are provided with a variety of opportunities to develop and extend their Mathematical skills, including:

- Group work
- Paired work
- Whole class teaching
- Individual work

Pupils engage in:

- The development of mental strategies and formal written methods
- Reasoning about Maths
- Practical work
- Investigative work
- Problem solving
- Mathematical discussion
- Consolidation of basic skills and number facts
- Maths games
- The opportunity to engage in Maths in a 'real life' context

We recognise the importance of establishing a secure foundation in mental calculation and recall of number facts before standard written methods are introduced. We use accurate mathematical vocabulary in our teaching and children are expected to use it in their verbal and written explanations. Mathematics contributes to many subjects and it is important the children are given opportunities to apply and use Mathematics in real contexts. It is important that time is found in other subjects for pupils to develop their Numeracy Skills, e.g. there should be regular, carefully

planned opportunities for measuring in Science and Technology, for the consideration of properties of shape and geometric patterns in Technology and Art, and for the collection and presentation of data in History and Geography.

We endeavor at all times to set work that is challenging, motivating and encourages the pupils to think about how they learn and to talk about what they have been learning. Additional enrichment opportunities are provided for pupils to further develop mathematical thinking e.g. through cooking, music, and maths investigations and games. Teachers plan problem solving and investigative activities periodically to ensure that pupils develop the skills of mathematical thinking and enquiry.

Since November 2019, we have followed the White Rose scheme of work, which blocks units in order to ensure children have time to practice and consolidate new learning. All the National Curriculum objectives will still be taught across the year, but in blocks rather than a week or two every term. The Autumn term will mainly consist of Number, Place Value and the four operations, the Spring and Summer terms will include Fractions, decimals and percentages and measures shape and space and statistics. Number will still run throughout the year through mental/oral starters and any 'spare' weeks year groups may have. We will also endeavor to include a calculation week every term to ensure the formal calculation methods are still embedded.

To provide adequate time for developing mathematics, maths is taught daily and discretely. In every year group, the children will have a daily mathematics lesson which is usually an hour long and over the year will incorporate all themes from the National Curriculum, through mental, written, practical and investigative work. Mental/oral starters (Flash back 4) will recap and revise previously taught work and also have a focus on times tables for lower school - in order to prepare them for the Multiplication Check test at the end of Year 4 - and a focus on calculation and reasoning strategies for upper school.

A Typical Maths Lesson

A typical lesson in Year 3 to 6 will often have the following components:

♦ Oral and mental work across the range of mathematics.

This will involve work to revise and rehearse prior learning and sharpen and develop mental and oral skills. Mental/oral starters will focus on times tables for lower school - in order to prepare them for the Multiplication Check test at the end of Year 4 - and a focus on calculation and reasoning strategies for upper school

♦ Main teaching session

This will include both teaching input and pupil activities and a balance between whole class, pair and independent work, effectively differentiated and offering appropriate challenge. Pair work is encouraged as this will allow children to develop their metacognitive thinking and engage in 'Maths talk'. Sometimes the focus for this session is new learning, at other times pupils may be practising, to master the application of a concept they have learned earlier. The focus of this session may vary for different children depending on their learning needs. We endeavor for the majority of children to work at age related expectations and provide scaffolding where necessary. Only children working more than 2 years below their year group will have work set at an age appropriate level for them. At some point during the main teach, there will be a checkpoint question which will be designed to help teachers ascertain which children have understood and can start the independent work and which children need further support.

The lesson will be divided into two parts: Varied fluency – where the Mathematical skills are practised and learnt through pure fluency and also a problem solving context and Reasoning – where children have an opportunity to use and apply the skills learnt to a more open ended or

challenging problem that allows them to explore and explain their thinking. This ensures all children are exposed to Reasoning opportunities every day.

♦ Plenary or review

This will involve work with the whole class or groups to identify and deal with misconceptions, identify progress against learning intentions and success criteria, to summarise key facts and ideas. Here, children will have the opportunity to see the teacher model answers, self-mark and then correct errors.

At times, there may be opportunities to develop skills and understanding of mathematics through additional activities, some of which may take place at home.

Meeting the needs of every child

Teachers plan learning that is differentiated to meet the needs of all pupils, whether they have a specific learning difficulty in maths or whether they are particularly able. This will be through adult support, expectation and extra resources. It is expected that the majority of children will be working on their year group objectives which will be shown on the weekly fluency grids that consist of two levels of work: amber and green. Children who are two years below the expectations of their year group will be given a separate grid but still with a level of challenge. Children who are **significantly** below the expectations of their year group will work through the Maths4Life programme.

There will be a separate Reasoning weekly grid which will consist of a variety of reasoning challenges that are linked to the LI of that week. When scrutinizing work in Maths books, the Leader of Learning for Mathematics expects to see weekly grids where the challenges relate to a common Learning Intention (LI). The grids will follow the structure of the lesson and be split into two parts – Varied fluency and Reasoning. Any child that has gaps in learning will be supported through an intervention or a 'quick catch up' session that will occur as soon as possible after the lesson.

Impact

Assessment

Formative Assessment

The objectives of the week will be copied onto a weekly assessment grid. These objectives are modelled on the National Curriculum statements to support rigorous and regular formative assessment of mathematical skills. The grids will be updated weekly and where the teacher is confident that a child has achieved the objective independently, they will be highlighted in pink, otherwise, it will be green. If a child has missed an objective due to absence, it will be left white.

Teachers integrate the use of formative assessment strategies such as: effective questioning, clear learning intentions, the use of success criteria and effective feedback and response in their teaching.

The school's PiXL system is updated termly and information from the weekly grids and tests will inform a teacher's judgement as to how a child is performing. The school's Insight system is used for data analysis.

Summative Assessment

Using optional termly tests, pupils are assessed at the end of every term. Formative teacher assessments are used in conjunction with test scores to come up with an accurate grading for each child. Progress is discussed at half-termly Pupil Progress meetings (PPMs) and the school's progress data tracking system is updated termly. Tests and assessments are also thoroughly scrutinized to set targets and analyse gaps in learning to inform future planning. Statutory National Curriculum tests are used at the end of KS2 during May in year 6; teachers use past and sample papers to inform their assessments as they prepare pupils for these assessments.

The school's Assessment and Marking Policies inform high quality feedback and pupils' response to it in Mathematics.

The statutory KS2 assessments now include an Arithmetic paper and two reasoning papers. This does not affect the quality of provision in any year group.

Resources

A bank of essential practical and visual mathematics resources are kept in each classroom. Further resources relating to key whole school topics for example 'measures' are kept centralized in the main resources room. Teachers also have access to a range of resources to support reasoning and mastery such as documents from the NCETM Maths Hub (White Rose materials, Mastery booklets and Progression maps), and Reasoning and Mastery cards. The teachers also have access to Interactive games, resources to encourage children to apply their learning and Maths Mansion activities.

We have adopted the White Rose calculation policies, which are on our website and shared with staff and parents.

Teaching Assistants

Teaching Assistants play an integral role in running interventions for children with additional needs or gaps in learning and this is where the majority of their time is focussed. Interventions for named children are logged on an intervention grid and the impact of the intervention is checked regularly. When, in class, time should be set aside prior to the maths lesson to discuss the learning intentions, main activities and the Teaching Assistants role in supporting the children. During the mental/oral starter they can either support a group of children or make observations and notes on focus children during the session. In the main teaching activity they should support either a group or an individual child, annotating work where help is given. In most cases they should be given the opportunity to work with different ability groups throughout the week.

Information and Communication Technology

ICT is used in various ways to support teaching and motivate children's learning. Each classroom has a PC connected to an interactive whiteboard with Smart software and Active Inspire software. All teachers are provided with a laptop and an I-pad to support their planning and provision and are encouraged to use ICT to enhance teaching and learning in mathematics where appropriate. The school has an ICT suite, 'chill out zone' and a set of I-pads that are booked out for sessions across the curriculum. Maths Mansion, Flash games and interactive teaching programs all provide interactive resources within the classroom.

Role of the Subject Leader

- Ensures teachers understand the requirements of the National Curriculum and helps them to plan lessons. Leads by example by setting high standards in their own teaching.
- Prepares, organises and leads CPD and joint professional development – supported by The MAT and other advisory bodies.
- Works with the SENCO.
- Observes colleagues from time to time with a view to identifying the support they need.
- Keeps parents informed about Mathematics issues
- Discusses regularly with the Head of School and the Mathematics Governor the progress of implementing National Curriculum for Mathematics in school
- Deploys support staff to address mathematics related needs within the school.
- Monitors and evaluates mathematics provision in the school by conducting regular work scrutiny, learning walks and assessment data analysis.

PARENTAL INVOLVEMENT

At Queens CofE Academy we encourage parents to be actively involved by:

- Holding parent-teacher evenings twice yearly to discuss the progress of their child, every parent is provided with the targets their child is working towards and this is followed up termly by the teacher
- Inviting the parents into school in the summer term to discuss the yearly report
- Inviting parents to curriculum evenings or circulating information via Class dojo
- Holding workshops for parents focussing on areas of mathematics (mainly during the new intake induction evening)
- Following the school policy on the teaching of formal calculations and supporting their child through practising the same methods at home.