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St George's CE Primary School, Chorley

&

Mossy Lea Primary School, Wrightington

Mathematics Policy

Adopted by the Governing Body on: Insert Date

Signed (Chair of Governors):

Date of Next Review: June 2026
(not more than 12 months from the publication date)

Reviewed: June 2025

This document is available via the school website or from the school office on request.

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Intent

What is the school's mission statement?

At St Georges C of E Primary School our aim throughout our work in Mathematics is to uphold the school's mission statement: Be determined and confident, as God will be with you, inspiring us to learn, care and share through work, play and prayer.

What is the school's vision for the subject?

We encourage children to be determined and resilient as they face each challenge set to them. Maths is designed to develop their confidence through small, incremental steps to ensure a mastery of each new concept.

Our aims of the curriculum are that children:

- Think for themselves
- Make decisions
- Communicate effectively
- Solve problems

Aims of the Curriculum

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.

At St George's School these aims are developed in tandem with each other. However a key focus in every lesson is deep conceptual understanding, and it is from this that children will build their fluency, their ability to reason and apply this understanding when solving problems.

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How was the curriculum for the subject designed? (including statutory requirements)

As a teaching school, St George's took part in a research project to look at Shanghai/Singapore Maths. This project looked into how teaching in these countries maintained high scores in mathematic testing as well as the number of children continuing mathematics into higher education. The outcome of this project was to look at how methods from these highly achieving countries could be adapted to the English National Curriculum.

After extensive research, including a visit to Shanghai schools, visits to schools in England who were implementing mastery methods, meetings and conferences with the NCETM and LA meetings within Lancashire; we designed our own curriculum based on the methods we had seen and knew would be beneficial. In essence we wanted to produce a curriculum that was based on mastery of mathematical concepts, making sure we were gaining greater depth into the children's understanding as well as producing confident, resilient and enthusiastic.

We were keen to implement the sequence of teaching new concepts through concrete – pictorial– abstract, and this became the basis of our planning. We also were keen to ensure our teaching and learning was based on the five main components of mastery - variation, fluency, mathematical thinking, representation and coherence. As such, we then looked at various ways we could implement these and decided that the best route would be to use a scheme of work. We wanted a scheme that would give teachers support in these key components of mastery and would allow them to the time to think deeply about 'how' they could teach this, the questions they would ask the children and how best to support and deepen learning whilst still being able to integrate their own style and creativity. In terms of deepening children's knowledge, we wanted to ensure that we used a spiral curriculum so that children would consistently go back to earlier learning, remember this and then move on and deepen their knowledge.

The school has chosen the Red Rose Maths scheme due to its core mastery approaches that run through every lesson, its exploratory approach to learning, and the pedagogical and mathematical foundations that underpin its creation. The scheme aligns with the 2014 National Curriculum in England and provides detailed progression documents, diagnostic assessment materials, and resources for teaching and learning across all year groups from EYFS to Year 6. Red Rose Maths promotes a deep and broad understanding of mathematical concepts by fostering exploration, reasoning, and problem-solving skills. The scheme's emphasis on concrete, pictorial, and abstract representations supports the development of a secure foundation in mathematics for all children and is one that is consistent throughout every year group.

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The scheme provides:

- **Progression Documents:** Details the progression of key mathematical concepts from EYFS to Year 6.
- **Teaching Resources:** Manipulatives, visual aids, and technology resources to support teaching.
- **Problem-Solving Focus:** Encourages students to solve problems independently and collaboratively.
- **Contextual Learning:** Provides real-world contexts for mathematical concepts, enhancing relevance and understanding.
- **Assessment Materials:** Assessments to identify strengths and areas for development that align with the units covered at points throughout the year.

'How is our curriculum aspirational for all pupils including those with SEND and more able?'

Our curriculum is accessible to all through the use of the core mastery concepts. Throughout all year groups we use the teaching model of concrete-pictorial-abstract to tackle concepts. As such this enables children to access the lesson in a way that fits them. At no point do we insist that the practical equipment needs to be taken away and this is beneficial to children who are struggling learners or those with SEND as we can tailor learning to them. In addition to this, one of the core concepts of mastery is 'variation'- in particular 'procedural variation.' This means that questions are written to slowly build knowledge, building to greater depth questioning throughout. As such, for struggling/SEND learners, we can ask them to complete the first few questions and then move onto additional work based on these questions to ensure that they have mastered this element.
We aspire that all of our learners will achieve in each lesson and we use daily intervention to ensure any gaps or misconceptions are plugged on the day meaning that every child can access the whole lesson.

In some cases, children will not be able to access the curriculum at the same level of the peers. The children will have an individualised action plan to ensure that the curriculum is adapted to their needs. This action plan will be evaluated and updated termly. For children who are more able, we want them to be able to deepen their knowledge and understanding of the day's learning. One way of ensuring the more able are demonstrating their greater understanding is through explanation. This can be through explanation to their peers in different parts of the lesson and can also be part of their challenge work at the end of the lesson. An ability to clearly articulate their own understanding of what they have learnt shows a greater degree of mastery. Additionally, each classroom has a challenge area where children can find tailored questions that relate to their current topic. These questions present the same learning in different contexts so that children have to be able to manipulate their learning to answer these questions.

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Where can the long term, and/ or medium term plan be found?

Each class has a long term plan which will identify which topics will be taught in each half term with the KLIPs covered. These can be viewed on the school One Drive in Curriculum – LTP 2025-26.

We have a whole school overview for maths which breaks the curriculum down into year groups and shows the national curriculum objectives which are being covered during each topic. This overview can be viewed on the school One Drive in Curriculum – Subject Leader Overviews 2025-26. Additionally, the Red Rose Maths Scheme provides overviews for each year group which identifies the topics for each half term and then breaks this down further into individual lesson objectives. These half termly overviews can also be found on One Drive.

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Implementation

At St George's School we use the Red Rose Mastery Maths Scheme throughout the school from EYFS through to Year 6. We have selected this because it is sequenced coherently across and within year groups. Children revisit topics on a termly basis building on their prior learning and moving towards clear end of year expectations. The key components of place value and calculation are explicitly taught and learned in each term. These topics are interspersed with other areas of the mathematics curriculum such as measurement including time and money, statistics and geometry. This allows children to apply their number knowledge in different contexts to build strong connections within mathematics and appreciate the subject's relevance to real life. It also supports children in transferring their learning to long term memory in order to unconsciously recall and apply it in different situations, including in different curriculum subjects.

Mathematics is learned discretely through daily lessons in all year groups and is then applied across the curriculum and in continuous provision in EYFS.

A typical lesson in Years 1 to 6 following the Red Rose Mastery Maths Scheme would involve:

- a Starter activity to allow children to revisit, practise and refine previously learned content to support long term memory retention as well as developing children's mathematical fluency
- an Initial Problem in which children are introduced to the learning through a context. The children discuss how their existing knowledge can be applied to the context. Ideas and approaches are shared where misconceptions are identified and addressed, and effective approaches are shared and learned by the whole class
- Guided Learning that is interactive through the use of effective questioning that leads children to identify for themselves how to be successful with the learning. This is supported through the use of both conceptual and procedural variation and short tasks for the children to complete before moving on to the next step in learning
- an Independent Learning Task for the children to apply the learning from the guided parts. This task includes questions that build children's understanding and fluency and will also involve different elements of reasoning and solving problems.
- a Deeper Learning Task is included to allow some children to take their understanding to even greater depth than what would be expected. These tasks are often in the form of more complex reasoning or non-routine problem solving questions.
- throughout the lesson, children's thinking is supported and extended through the deliberate use of questioning by the adults.

A variety of approaches are used within our lessons including practical exploration, group discussion, paired work and individual work.

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How is the subject implemented in the Early Years Foundation Stage?

In EYFS we follow the school's mastery approach through the Red Rose EYFS scheme. We do this through ensuring that children are given the chance to explore concepts through the use of practical equipment and questioning the children's knowledge of what they are learning and why they are doing it.

The curriculum is organised into progressive steps that build a coherent sequence of learning across the year. It begins in the autumn term with children being immersed in the numbers 1-10 by focusing on the inclusion of the next number each week. This allows children to develop a deep understanding of each number, including composition and how these numbers relate to each other. The curriculum for the spring and summer terms includes calculation, shape, space, spatial reasoning, measures, statistics, patterning and allows children to develop their understanding of numbers beyond 10 to ensure their readiness for Year 1.

In Early Years, mathematics lessons consist of a key skills practice which is for the whole class and allows for revisitation of core elements of learning. This is followed by small group adult led sessions that are very practical, playful and involve a considerable amount of discussion including questions such as What can you see? What do you notice? Why do you think that happens? What would happen if…? We teach in small groups, starting the year in mixed attainment groups and slowly tailoring the grouping to the needs of the children. To support with readiness for year one the session times and group sizes increase throughout the year.

Children will then be given opportunities in continuous provision to apply this learning in different ways. Mathematics is also experienced through many daily routines and the adults take advantage of all the opportunities for mathematical learning in such activities as registration, snack time and tidying up.

What professional development is offered to staff in relation to the subject?

We use maths consultants as well as our Maths Subject Leader to support teachers in school- this can be through lesson observations, team teaching and planning support.
Additional courses through LPDS on Mastery and new curriculum initiatives as also accessed when appropriate. The subject leader attends subject leader meetings once a term which keeps us up to date on new initiatives.

What resources are used to support the planning of the subject? (schemes of work etc)

We use the Red Rose Maths Scheme to plan all units.

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The planning of the curriculum is organised in three phases:

- **long term planning** is demonstrated through the yearly overviews which show the organisation of the mathematics topics across the year for each year group, and the coverage and progression of knowledge, skills and understanding;
- **medium term planning** is demonstrated through the half termly overviews which reveal the progression of knowledge, skills and understanding within each topic, including where learning is revisited in Starters for year groups using the Red Rose Mastery Maths Scheme;
- **short term planning** is demonstrated through the teachers' lesson plans which explain how children will build on their existing understanding with the new learning specified as focused learning objectives for each given lesson. Teachers using the Red Rose Mastery Maths Scheme are expected to annotate the Lesson Plans and/or Teaching Tool notes to personalise the lesson for the children in their class.

Teachers plan using the online support offered by Red Rose Maths and annotate lessons using the teaching notes provided.
Additional resources used are the NCETM mastery documents and White Rose Hub resources.

How is learning sequenced to build on prior learning and prepare children for the next stage in their education?

Red Rose Maths is designed to be a spiral curriculum. Each year group covers each area of maths in small units which are revisited at various points throughout the year. This is then repeated in the next year.

What resources are available to support the implementation of the subject?

We are very fortunate to have a wide range of resources available to us. Each classroom has table sets of maths resources which fit for their year group, these contain items such as place value counters, 10 frames, dice etc and are adapted and added to for each new unit so that children have the resources that are helpful to them at their fingertips. This is very important for the mastery concepts of 'practical- pictorial- abstract.' To support more able learners we have invested in challenge cards such as convince me cards to set their learning in different contexts.

In addition we have a range of online resources including White Rose, Times Table Rockstars and NumBots.

How are parents involved in the subject?

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Each year we send home a questionnaire to parents to ask questions about how they feel the subject is progressing and how they would describe their child's progress and confidence in maths. We use these questionnaires to add to the action plan for the coming year.

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Impact

How is progression helping children to acquire new skills and know and remember their learning?

Maths is an interconnecting subject that relies on concepts from different parts of the curriculum to come together for children to solve a range of problems. It is important to us that children feel confident to remember and access previous learning to keep building their confidence and resilience in solving problems.

As discussed, the spiral curriculum that is used in Maths ensures that children keep revisiting their learning so that they remember and then build on this.

The use of problems to begin a lesson and challenge questions within the mathematics curriculum allows children to use a range of skills and link to prior learning throughout lessons.

What are pupil attitudes to this subject, how are they gathered and how does pupil voice influence subject development and improvement?

From when we began using the maths mastery approach, the children have been very complimentary and enthusiastic towards their maths work.

A student and staff voice will again be conducted in relation to Red Rose Maths this academic year. This takes on the form of a questionnaire which is written by the subject leader and then delivered by class teachers and governors. These answers will then feed into the action plan for the upcoming year.

How do children record their learning?

Children use a Red Rose Maths Workbook with worksheets that fit with each day's learning. These are filled in as appropriate when the children are at the correct point in their learning. They are not expected to be filled in daily, this is left to teacher judgement on their own class.

Additionally children use journals to record any other learning. This can be additional work set by their teacher to practise a new concept or challenge questions that show a greater depth of understanding.

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How is feedback given to children?

Workbooks are to be marked on the day the lesson takes place. Good practise is to ensure that teachers and TA's keep an eye on children's progress throughout the lesson and, when time allows, mark as children work. This will ensure that immediate intervention is given to children with misconception in their understanding. It will also give the opportunity to move on and challenge the depth of thinking of children who have grasped the concept rapidly. Children are also given the opportunity to mark their own work at times. This ensures that children are aware of their own achievements and helps them to notice mistakes and misconceptions.

Marking workbooks does not need to have a next step identified, as the teaching progression through the books identifies the next step on the next teaching day.

To ensure that marking aids progression and adds to the teacher assessment of the children's understanding, a key should be used to support marking. This should be indicated on the page of the children's work.

S – Supported for this question
G - Guided work in a group
I - For questions completed independently in guided group/intervention
T - Talked to the child/gave verbal feedback

<u>Journals</u>

Children's journals could be another method of assessment for the teacher. As in the workbook, teachers may have the opportunity to see these during a lesson but this will not always be possible.

When marking journals, these again do not need a next step. They can be marked by assessing the child's understanding and depth of knowledge, and a detailed comment should only be used if there is misconception.

Where misconceptions are found, best practise is to spend time with these children in intervention time during the day.

Journals do not all have to be marked daily. A suggestion for marking is to mark one group each day, taking into account all journaling from the previous week.

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How and when is the subject assessed?

The assessment policy for maths is in line with the school assessment policy and summative assessments should be made as stated.

Teachers use their professional judgement to decide what children need to learn and when to move on to the next step of learning. Formative assessment (or responsive teaching) is a key feature of the mathematics lessons. Teachers use effective questioning and live marking to determine the extent of children's understanding before deciding on what the children need next (support, extension, next step).

Children are assessed at the end of each term using teacher assessment supported by an arithmetic and a reasoning test. This allows teachers to check children's progress towards meeting the end of year expectations and organise further support where this is necessary. At the end of each half term, there are 'Learning Checks' that consist of a range of questions based on what the children have learned in that half term. These allow teachers to assess the children's understanding away from the point of teaching and to see how well the learning has been stored in the long term memory. Children are also formally assessed at the end of each first half term using the NFER assessments or previous SATs papers (Year 6).

This information and record keeping is essential when coming to assessing children against the KLIPs.

Additionally, low-stakes testing should be used to regularly assess progress in certain areas, for example number bonds, times tables. Low-stakes testing helps children with their memorisation of key concepts and emphasises to them what they do know.

How do assessments impact future learning?

Learning in Maths is ongoing and as such these assessments inform our daily maths planning interventions so that any gaps that have been found in previous units can be tackled as soon as possible. It is of the upmost importance that we tackle gaps and misconceptions as quickly as possible so that it does not have any impact on their future learning.

At St George's, we use two forms of intervention. Same day intervention takes place for children who have struggled in the lesson. This may take the form of additional modelling and practise within the lesson or at another time in the school day prior to the next lesson.
Additionally, we also provide intervention for children with significant gaps within their mathematical understanding. This takes the form of daily maths intervention to close any gaps from that day's learning as well as timetables weekly intervention for those children identified in pupil progress meetings.

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How and when is the curriculum map reviewed?

We review the curriculum each year. We look at the data from the year groups as well as pupil and parent attitudes. From this we discuss any changes that need to be made and put these into the action plan.