



Griffin Primary School

Maths Policy



1	Summary	Maths Policy		
2	Responsible person	Kirsty Roantree		
3	Accountable SLT member	Louise Pitts		
4	Applies to	<input checked="" type="checkbox"/> All staff <input type="checkbox"/> Support staff <input type="checkbox"/> Teaching staff		
5	Who has overseen development of this policy	Kirsty Roantree Tyler Williams		
6	Who has been consulted and recommended policy for approval	LGB		
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13	Consulted with recognised trade unions	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N		

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1. Aims and Objectives

Mathematics is a creative and highly inter-connected discipline that has been developed over centuries, providing the solution to some of history's most intriguing 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.

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.

2. Whole School Curriculum Ambition

At Griffin Primary School, our ambition is to provide a curriculum for all of our students designed in response to what we already know about our children. Our over-arching goal is routed in promoting a positive attitude towards learning so that children enjoy coming to school, developing our children into life-long learners. Our curriculum is designed to provide all of our children with the core knowledge that helps them to make links between their prior and new knowledge, allowing them to develop a deeper understanding and be inspired to continue their learning outside of the classroom.

We aim to provide our children with stability through a consistent curriculum provision, allowing staff to become experts and build in assessment tools. The curriculum is sequenced effectively to enable prior knowledge to be built upon both throughout and across year groups. At the heart of our curriculum there lies a respect for all of the subjects we teach and how this provides our children with an insight into the world around us.

At Griffin we teach children how to develop their behaviours and habits to become effective learners through asking questions in order to develop their curiosity. Griffin's curriculum has been developed so that our children are not afraid to make mistakes and accept ways forward as support rather than criticism.

By the time the children leave Griffin, our ambition is to ensure that they have the necessary skills in Mathematics, English and communication so that they will become positive citizens in their community and the wider world.



3. Maths Curriculum Ambition

Our ambition is to develop the lifelong skills of mathematics needed for our changing, modern world.

- Pupils instantly recall basic arithmetic facts.
- Pupils are proficient with foundational knowledge of skills and vocabulary to access the curriculum and solve a variety of mathematical problems.
- Pupils demonstrate confidence when using a range of representations.
- Pupils apply learning in mathematics to the wider curriculum; and to the wider world beyond school.
- Pupils articulate their learning and knowledge in discussions about mathematics with peers and adults.

4. Maths Curriculum Implementation

Our Maths curriculum is taught daily using White Rose Maths. We prioritise a mastery approach to teaching and learning and are consistent with the aims and objectives of the National Curriculum using a fluency, reasoning and problem solving approach. We put number first and the White Rose Maths schemes of work have number at their heart. A significant amount of time is spent reinforcing number in order to build competency and ensure children can confidently access the rest of the curriculum. We have a focus on depth before breadth and the White Rose Maths schemes support teachers to stay within the required key stage so that children acquire depth of knowledge in each topic. There are opportunities to revisit previously learned skills which are built into later blocks. The vast majority of pupils progress through the schemes as a whole group and we encourage students of all abilities to support each other in their learning.

To support pupils' recall of facts and arithmetic skills, pupils revisit a number of questions from different areas of Maths at the start of every lesson using the Flashback 4 resources from White Rose Maths.

Pupils in EYFS and Key Stage 1 also use NCETM Mastering Number to develop solid number sense, including fluency and flexibility with number facts, which will have a Working walls are in all classrooms and are updated frequently to reflect the current learning. These are to identify the unit being studied and should include key vocabulary and sentence stems alongside examples of appropriate calculations and strategies. Working walls should be referred to in lesson and pupils should use them to aid learning.

5. Maths Curriculum Impact

- Outcomes of pupils in each year group, majority of pupils achieve their end of year outcome, based on their starting points.
- Pupils become aware of the world around them, finding out why things are as they are and becoming curious to find out even more.
- Develop a love of learning to take superficial knowledge into deeper knowledge and understanding of the world around us.
- Develop aspirations for future engineers (Science/Maths/Technology) using STEM, provide opportunities for STEM sessions and bring in STEM



Ambassadors from local employers to raise the profile of careers within these areas

6. White Rose Maths

White Rose Maths is used from Reception to Year 6 and uses a fluency, reasoning and problem solving approach that allows pupils to master concepts and skills. It incorporates variation/varied fluency to allow pupils to practise their skills and show automaticity before moving on to using these skills to reason and solve problems. When introduced to a new concept, pupils have the opportunity to build competency by following the CPA approach.

Concrete – Children work with physical objects/concrete resources, in order to bring the maths to life and to build understanding of what they are doing.

Pictorial - Alongside concrete resources, children work with pictorial representations, making links to the concrete. Visualising a problem in this way can help children to reason and to solve problems.

Abstract - With the support of both the concrete and pictorial representations, children can develop their understanding of abstract methods.

Problems with real life concepts are used to assess pupils' understanding. Pupils explore and investigate these problems using key vocabulary to support their understanding. Communication is key, as pupils are encouraged to work alongside peers to reason, explain and justify their thinking using mathematical vocabulary and resources.

White Rose maths have developed teaching slides that model concepts and skills using a variety of representations to support pupil understanding and these models are replicated in the workbooks that pupils use to answer questions/tasks independently to show their understanding and ability.

Flashback 4

Flashback 4 provides a daily set of revisit/quick recall questions which focus on previously taught concepts being recapped to ensure pupils constantly revise their previously taught skills. This constant revisiting supports pupils in remembering more and for some pupils who need further support, gives them an opportunity to revise and master them. Pupils are given time to independently answer the questions before the teacher and pupils discuss the answers and model their methods.

7. Mastering Number

Mastering Number was developed by the National Centre for Excellence in the Teaching of Mathematics (NCETM) and the Maths Hubs Network. It aims to develop solid number sense, including fluency and flexibility with number facts, which will have a lasting impact on future learning for all children. It also involves high quality professional development for teachers.

Teachers in Reception and KS1 deliver a daily session of 10 to 15 minutes in addition to their daily maths lesson. Resources, including lesson plans, visual resources and practical equipment, are provided by the NCETM. Central to the programme is a small, abacus-like piece of equipment called a rekenrek, which are used by children in participating classes. The small steps and detailed variation



support pupils in developing their understanding of numbers and their composition. Along with the use of key mathematical vocabulary, sentence stems and effective questioning, pupils are able to articulate and deepen their understanding.

8. Arithmetic

Arithmetic is taught daily in Year 6. Pupils complete a weekly arithmetic test on Fridays and staff analyse the scores and questioned answered/achieved and plan interventions to narrow the gaps in pupils' knowledge.

Termly arithmetic tests are carried out by pupils in years 1 – 6 as part of the end of term White Rose Maths assessments. At the end of the half term, pupils complete an arithmetic test and interventions are planned from the gap analysis.

The gap analysis is especially important as we have noticed there are significant time pressures with the KS2 arithmetic tests; many children are not able to complete the full test in the 30 minutes given. This is often because children are attempting questions which have been designed to be answered mentally using an informal or formal written method, which takes up valuable time. This may be because children are not confident with mental approaches to calculations, or that they are simply 'tricked' by the appearance of a gridded working area after each question. The regular practice of arithmetic skills through Flashback 4, fluency questions and regular arithmetic tests support pupils in being ready for the end of unit/year/key stage arithmetic assessments.

9. Times Tables

Times tables are taught daily to pupils from Year 2 to Year 6, with the focus on remembering facts and recalling them. Pupils in Y1 are taught the skills prior to times tables – counting in, recognising doubles and recognising number patterns daily.

Pupils in Y3 and Y4 are grouped using their times tables recall ability and are taught across the phase daily in 20minute sessions to learn the times tables they need to make progress and also to fill any gaps in their recall ability.

A TA is directed to work with individuals and small groups to address their identified gaps and misconceptions through same day interventions.

MTC – Pupils in year 4 will sit the statutory assessment Multiplication Tables Check in June each year. The purpose of the MTC is to see whether children in Year 4 can fluently recall their multiplication tables. The Year 4 Programme of Study states: 'Pupils should be taught to recall multiplication and division facts for multiplication tables up to 12×12 '. The test consists of 25 random questions online that cover multiplication facts between 12×12 . There is no pass mark for this assessment; pupils are expected to achieve 25/25.

To prepare for the MTC pupils in Y4 complete weekly practice MTCs using Times Table Rock Stars Soundcheck as this closely replicates the MTC.

10. Greater Depth

Children showing a greater depth understanding of Maths, have their needs addressed through the varied fluency, reasoning and problem solving questions as a



part of White Rose Maths. All children are given opportunities for reasoning and problem solving activities and the development of mental strategies to allow them to use mathematical relationships when answering the tasks. Pupils are encouraged to show their answers and understanding in a range of ways, including the use of concrete resources and pictorial representations.

11. SEND and Maths

When pupils are working 2 or more years below their peers, the child may have special educational needs. Factors such as classroom organisation, teaching styles and scaffolding are considered so that action may be taken to assist the child in learning more effectively. Lessons are planned and adapted to ensure that all children make progress from their individual starting points. Progress is measured against end of year expectations to help ensure that teaching is matched to the child's need.

We enable all children to have access to the full range of activities involved in the teaching and learning of maths.

When pupils are working significantly below their peers, we assess their understanding using the pre-key stage Standards documents. These show where pupils need to go next in their mathematical journey to narrow the gap between themselves and their peers. Pupils will work on content from previous year groups, using White Rose Maths lessons and the matching workbooks.

12. Early Maths in EYFS

Developing a strong grounding in number is essential so that all children develop the necessary building blocks to excel mathematically. Children should be able to count confidently, develop a deep understanding of the numbers to 10, the relationships between them and the patterns within those numbers.

By providing frequent and varied opportunities to build and apply this understanding - such as using manipulatives, including small pebbles and tens frames for organising counting - children will develop a secure base of knowledge and vocabulary from which mastery of mathematics is built.

In addition, it is important that the curriculum includes rich opportunities for children to develop their spatial reasoning skills across all areas of mathematics. It is important that children develop positive attitudes and interests in mathematics, look for patterns and relationships, spot connections, 'have a go', talk to adults and peers about what they notice and not be afraid to make mistakes.

At Griffin Primary School children are supported in developing their understanding of Maths in a broad range of contexts in which they can explore, enjoy, learn, practise and talk about their developing understanding. Children take part in daily maths lessons that follow the White Rose Maths scheme and this is supplemented by Mastering Number resources and content to give pupils the best start in their maths journey.



They are then provided with opportunities to practise and extend their skills in these areas to gain confidence and competence in their use, within continuous provision. Opportunities are provided both indoors and outdoors meeting the children's needs for all types of play which build upon first-hand experience for all children.

13. Assessment

Assessment of Maths is ongoing. It is continuously used to inform teaching. Marking and questioning during lessons enable teachers to make assessments. Misconceptions are addressed as they arise, and teachers actively engage children in proving their ideas.

Teachers continually assess pupils on the concepts taught and use this to inform their planning and assessments regarding interventions and next steps for progress and mastery.

Pupils complete an end of unit review in their blue books at the end of every unit of work, using the end of unit assessments from White Rose Maths. Any areas that are not secure and need intervention are identified at the front of the blue maths book and completed in a timely manner to allow pupils to catch up and keep up.

All pupils from Y1-6 complete end of term assessments using White Rose Maths Assessments. These are used alongside the end of unit reviews and half termly arithmetic tests to support teacher assessments of pupils against the end of year outcomes.

14. Curriculum Planning

Maths is a core subject within the National Curriculum and as such is timetabled to be delivered to all pupils on a daily basis for a minimum of one hour in Years 1 to 6 and for 20-30minutes in EYFS. The programmes of study for Maths are set out in year objectives, which are split into units of work and sequenced progressively through the years and key stages.

The long-term plan maps out the units to be studied during each half term in each year group.

The medium-term plans provide the unit of work, National Curriculum links, Key vocabulary and resources that are recommended to be used for the unit of work being taught. The medium-term planning is sequenced into unit specific weeks to ensure pupils complete the LTP between September and July. The medium-term plans also identify the assessment weeks so staff are aware when the assessments will be taking place in relation to the units that have been covered.

Short-term planning, is written by the teachers. In Years 1 to 6, it is taken from White Rose Maths Online and gives the small step, lesson overview, key vocabulary, sentence stems, suggested activities and the adaptations that are needed to enable pupils to access the learning and to extend for pupils who need a further challenge.



15. Resources

There are sufficient resources within school for the delivery of an effective maths curriculum. Resources are stored in a secure area of the school building. Where further resources are required, it is the responsibility of the class teacher to request them from the subject leader. The subject leader will then try to fulfil the request.

Pupils in KS1 have access to maths packs and KS2 pupils have maths resource boxes. These packs/boxes are filled with resources suitable for the current unit of work being delivered and updated/changed when a new unit of work begins to allow pupils to independently access any resources that could support them in completing the activities and showing their understanding of the concepts being taught.

16. Role of the Subject Leader

It is the responsibility of the subject leader to write the LTP and schemes of work for each Maths unit. The subject leader will also monitor the standards of children's work and the quality of teaching and learning in Maths. Monitoring may involve looking at planning, scrutinising work, lesson observations and pupil voice. Pupil voice is valued and helps to inform the vision and aims of Maths across the school, pupils are interviewed to gain an insight into the subject. It is the subject leader's responsibility to ensure staff maintain a high quality of presentation in pupils' Maths books.

The subject leader produces an annual action plan for the development of Maths and also reviews impact termly; identifies next steps and any CPD needs. This working document is shared with Governors annually. The subject leader will also produce and narrate a presentation about their subject for the Governors bi-annually.

The subject leader ensures resources are available for units to be taught and will provide support if/ when needed for staff.

This policy will be reviewed as and when required.