Being a Mathematician 2025

All of our policies are underpinned by our Vision and driven by our Values of Friendship, Family and Fulfilment

The intentions of this Policy

The intent of our mathematics curriculum is to provide a curriculum, which is accessible to all and will maximise the development of every child's ability and academic achievement. We deliver lessons that are creative and engaging. We want children to make rich connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems. We intend for our pupils to be able to apply their mathematical knowledge to science and other subjects. We want children to realise that mathematics has been developed over centuries, providing the solution to some of history's most intriguing problems. We want them to know that it is essential to everyday life, critical to science, technology and engineering, and necessary for financial literacy and most forms of employment. As our pupils progress, we intend for our pupils to be able to understand the world, have the ability to reason mathematically, have 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

Mathematics is a key skill and core subject that all children need to feel confident with, through developing their ability to calculate, reason and solve problems. It is used in daily life and helps us to make sense of the world around us. Mathematics can be taught cross-curricular but is also taught discreetly, in both KS1 and KS2 mathematics is taught every day, and where possible is allocated to a morning lesson.

Mastery Approach to Mathematics

The content and principles underpinning the 2014 Mathematics curriculum and the Maths curriculum at our school reflect those found in high-performing education systems:

- Teachers reinforce an expectation that all children are capable of achieving high standards in Mathematics
- The large majority of children progress through the curriculum content at the same pace
- Differentiation is achieved by emphasising deep knowledge and through individual support and intervention
- Teaching is underpinned by methodical curriculum design and supported by carefully crafted lessons and resources to foster deep conceptual and procedural knowledge
- Practice and consolidation play a central role. Carefully designed variation within this builds fluency and understanding of underlying mathematical concepts
- Teachers use precise questioning in class to test conceptual and procedural knowledge and assess children regularly to identify those requiring intervention, so that all children keep up

To ensure whole consistency and progression, the school uses the Rose Maths scheme and the school's ongoing engagement with the DFE funded Maths Hubs programme continues to ensure that staff at all levels understand the pedagogy of the approach. New concepts are shared within the context of an initial related problem, which children are able to discuss in partners. This initial problem-solving activity prompts discussion and reasoning, as well as promoting an awareness of maths in relatable real-life contexts that link to other areas of learning. In KS1, these problems are almost always presented with objects (concrete manipulatives) for children to use. Children may also use manipulatives in KS2. Teachers use careful questions to draw out children's discussions and their reasoning. The class teacher then leads children through strategies for solving the problem, including those already discussed. Independent work provides the means for all children to develop their fluency further, before progressing to more complex related problems. Mathematical topics are taught in blocks, to enable the

achievement of 'mastery' over time. Each lesson phase provides the means to achieve greater depth, with more able children being offered rich and sophisticated problems, as well as exploratory, investigative tasks, within the lesson as appropriate. Evidence of learning is recorded on 'Working Walls' that can be found in all classrooms. Pupils use the walls as a resource to further their learning and embed knowledge.

At the centre of the mastery approach to the teaching of mathematics is the belief that all pupils have the potential to succeed. They should have access to the same curriculum content and, rather than being extended with new learning, they should deepen their conceptual understanding by tackling challenging and varied problems.

The whole school is now working in line with objectives and activities from White Rose Maths and the NCETM (National Centre for Excellence in the Teaching of Mathematics) following the concrete, pictorial, abstract approach.

This means:

Concrete – Teaching will be heavily resource based. The children will first be introduced to an idea/skill by acting it out with real objects. This is the foundation for conceptual learning.

Pictorial – Children will be allowed to draw and mark make, to-make visual representations, to help them understand the idea/skill they are learning. The students now relate the hands-on approach to visual diagrams and pictures.

Abstract – When children are confident with both the concrete and pictorial stage they progress onto the abstract which is where children will now be able to represent problems using mathematical notation. This is where children will be giving opportunities to apply the skills they have learnt in a variety of ways.

Children will now have the time and space to work at and consolidate a concept without being rushed and moved on. Children will trial the same idea in a variety of ways in order to 'master' that skill – meaning they can do it in any situation with any numbers.

Early Years

The programme of study for the early years is set out in the EYFS Framework and in line with early learning goals. Mathematics in early years involves providing children with opportunities to develop and improve their skills in counting, understanding and using numbers, calculating simple addition and subtraction problems: and to describe shape, spaces and measures. Children are given opportunities to reach these goals daily whilst being guided, observed and challenged by a professional.

Homework

There is a requirement for KS2 teachers to set regular homework on a weekly basis and/or using the online learning platform (Class Dojo), as well as this; children may be expected to practice their tables or mental maths skills to help improve fluency.

Assessment

Children's work will be marked according to the agreed school policy and their performance, continually assessed by the teacher.

Children who achieved significantly more or significantly less than the main body of the class should be recorded. If children are not making the expected progress action will be taken. This action might include:-

- discussing work with the child to identify the problem
- ensuring work is differentiated appropriately
- targeting support from the Teaching Assistant
- discussing the problem with SENCO
- discussion with parent

Pitton Primary School make long-term assessments towards the end of the school year, and we use these to assess progress against end of year expectations using our online assessment system called Insight Tracking. Assessments are completed termly using national assessments for Year 2 and Year 6 and White Rose Assessments for all other year groups. Targets are identified for the following term and for the next school year allowing teachers to make a summary of each child's progress before discussing it with parents. All information is passed on to the next teacher at the end of the year, so that s/he can plan for the new school year.

Monitoring

Planning is completed and saved on the internal server where the subject lead is able to monitor weekly. Termly observations and book scrutiny's are also carried out along with CPD in staff meetings where the subject lead disseminates knowledge of training completed with the Mobius Maths Hub.

Equal Opportunities

The teaching of mathematics will be in accordance with the present policy for Equal Opportunities. We aim to provide equal and full access to the maths curriculum for all children including pupils with additional educational needs and for the more able.

Resources

All major maths resources are centrally located in the main corridor's maths resource area. Apart from bulky items, all resources are stored in labelled boxes. Teachers are requested to remove the whole box when equipment is being used and to return it promptly to the correct place when no longer required. Resources that are regularly used in class e.g. number squares, counters, are kept in the classroom.

This policy should be read in conjunction with the Calculation policy.

MATHEMATICS

Reviewed: Every 2 years

Reviewed by: Mathematics Lead Teacher, Head Teacher, LGC

Ratified: September 2025

Next Review Due: September 2027

Filed: PITTON POLICIES/non statutory/curriculum