



WORTHAM PRIMARY SCHOOL

Bury Road, Wortham, Diss, Norfolk IP22 1PX
Tel: 01379 898 484 e-mail: admin@wortham.suffolk.sch.uk
Executive Headteacher: Mrs. C.Flatman
Head of School: Hayley Clarke

Mathematics Policy

	Date	Chair of Governors
Agreed By Governors	Autumn 2023	Chris Simon
Lead	Mrs Rebecca Banham Mrs Claire Flatman	
Review Date	Autumn 2025	

Wortham Primary School - Mathematics Policy

Introduction

'Mathematics is a creative and highly interconnected 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 mathematical education therefore provides a foundation for understanding the world, the ability to reason mathematically, an appreciation of the power and beauty of mathematics, and a sense of enjoyment and curiosity about the subject.' (DfE, 2013)

As can be seen from the statement above, mathematics teaches us how to make sense of the world around us. It is therefore important to develop a child's ability to calculate, to communicate, to reason and to solve problems. Mathematics enables children to understand and appreciate relationships and pattern in both number and space in their everyday lives. Through their growing knowledge and understanding, children learn to appreciate the contribution made by many cultures to the development and application of mathematics.

This policy outlines the teaching, organisation and management of the mathematics taught and learnt at Wortham Primary School. The school's policy for mathematics is based on the National Curriculum 2014 Framework. The policy sets out a framework within which all staff (teaching staff and support staff) should work.

Please read this policy with reference to -

- SEND Policy
- Equality Policy
- AFL and Marking Policy.
- The Assessment Toolkit

Our Intent

We aim to equip pupils with the tools to understand Mathematics. These tools include reasoning, problem solving and the ability to think in abstract ways. Mathematics is integral to all aspects of life; with this in mind, we strive to ensure that our children develop a healthy and enthusiastic attitude towards mathematics that will stay with them and support them in the next stage of their education and beyond. At each stage of learning, children are actively supported to reach their full potential as mathematicians.

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.

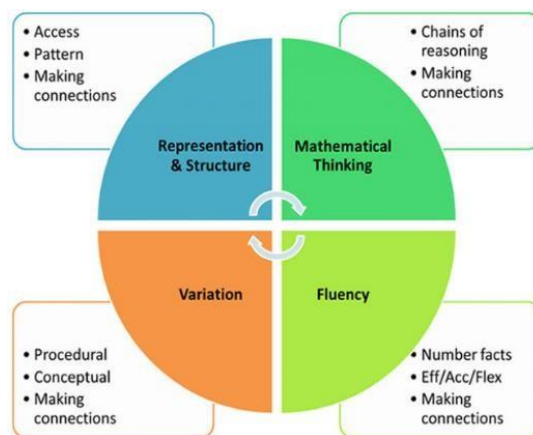
- reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language
- can solve problems by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.

Implementation

All teachers follow a termly overview plan and are encouraged to design lessons using the White Rose Mathematics Scheme of Learning from the White Rose Mathematics Hub. A typical Mathematics lesson provides the opportunity for **all** children, regardless of their ability, to become confident and capable learners.

We are committed to building on prior learning and enabling our children to demonstrate a deep, conceptual understanding of each topic that they can develop over time. They are encouraged to develop fluency in their recall of key facts and a whole school approach to the teaching of calculation strategies is deployed across the school. This ensures a consistent and progressive approach and prepares our children for the upper key stage 2 curriculum.

Reasoning and problem-solving skills are explicitly taught to enable children to become independent learners who are prepared to take risks. Additional time is allocated to arithmetic to ensure key skills in calculation are retained. The teaching of multiplication facts continues to be a discrete focus, where the applications of these skills are essential for accessing other areas of mathematics. To make the learning relevant, cross-curricular links are made wherever possible and children are encouraged to apply skills from all areas to complete real-life challenges and give learning a sense of purpose.



Coherence	Representation & Structure	Mathematical Thinking	Fluency	Variation
Lessons are broken down into small connected steps that gradually unfold the	Representations used in lessons expose the mathematical relationships and structure being taught.	Ideas are worked on by the children: thought about, reasoned and discussed with 'talk partners'.	We promote quick and efficient recall of facts and procedures and the flexibility to move between different	We aim to represent the concept being taught in more than one way. We encourage children to pay

concept, providing access for all children that enables them to apply the concept to a range of contexts.			contexts & representations.	attention to what is kept the same and what changes.
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To provide adequate time for developing key skills in fluency, reasoning and problem solving, each class teacher will provide five daily mathematics lessons per week. These may vary in length, 50 to 60 minutes in Key Stage 2 and about 45 minutes in Key Stage 1.

Additional mathematics will be taught through our planned *mathematics meetings*. These additional lessons focus on consolidating key areas of mathematical learning and are timetabled outside of the daily lesson. Key Instant Recall Facts (KIRFS) are explored and pupils have opportunities to develop their recall and understanding of prior learning. The lessons are planned to be delivered in a 10 minute session.

Class teachers provide high quality Mathematics lessons ensuring that there is emphasis on direct whole-class teaching, groups/partner work and independent work. We use a range of approaches (concrete, pictorial and abstract methods) following the White Rose scheme of work, teaching mathematical concepts through small steps. Staff are expected to teach and model correct mathematical language, which scaffolds children’s reasoning and explanation skills.

Throughout Foundation Stage, children are encouraged to use and develop mathematics through play in all areas of provision. Mathematical resources such as number lines and Numicon are available throughout. Concepts of shape, space, direction, size, length, capacity and mass are developed through sand, water and tactile play, outdoor provision, small world play, storytelling and nursery rhymes for example.

Impact

The impact of our Mathematics curriculum is that at the end of Key Stage 2 our pupils achieve and make progress in line or above with other pupils nationally, evident through:

- Fluency in their recall of key number facts and procedures
- Accuracy in the formal calculation methods for all four operations
- The flexibility and fluidity to move between different contexts and representations of mathematics.
- The ability to recognise relationships and make connections in mathematics
- The confidence and resilience to reason mathematically and solve a range of problems.

Teaching Mathematics to Children with Special Needs

At Wortham we deliver a mastery mathematics curriculum to all of our children. We do not set limits and we scaffold our tasks for those children that require it. Effective pupil tracking enables identification of pupils who may benefit from early ‘intervention’ at an appropriate level.

Learning opportunities are also matched to the needs of children with special educational needs through appropriate adaptations. Work in mathematics takes into account the targets set for individual children in their Pupil Passports.

Equal Opportunities and Inclusion

All teaching and non-teaching staff at Wortham Primary School are responsible for ensuring that all children, irrespective of gender, ability, ethnic origin and social circumstances, have access to the whole curriculum. We aim to give every pupil the opportunity to experience success and achieve as highly as possible.

Homework

In Key Stage 1, homework is generally of a practical nature and is given to children to consolidate learning, as and when appropriate. In Key Stage 2, children are set weekly homework tasks. These homework tasks give the children opportunity to practise recall of their times tables; revise previous learning using the White Rose Homework resources that will enable them to consolidate their learning from the week's mathematics lessons.

Assessment and recording

Assessment is used to inform teaching in a continuous cycle of planning, teaching and assessment. Observations and quick assessments are an informal part of every lesson to check children's understanding and are used to inform teachers' day-to-day lesson planning. Three times a year (December, March, June), children will complete their NFER assessments for mathematics. Year two children will complete optional Mathematics SATS papers on a termly basis and Year 6 will complete historic Mathematics SATS at the end of each term.

Their data is used by the school staff to monitor pupil progress and set teacher/class targets. The results of these assessments are passed on to the next class teacher.

The assessment procedures within our school encompass:

- Making ongoing assessments and responding appropriately to pupils during 'day-to-day' teaching. 'Immediate' verbal responses are given to children within lessons regularly. Written feedback in books is in response to the lesson's learning objective. Written feedback will also include clear next steps to extended thinking and consolidate learning.
- Adjusting planning and teaching within units in response to pupils' understanding.
- Termly assessments are carried out and tracked using our Attainment and Progress Tracker Report.
- Teachers use their tracking and their knowledge of the children to guide planning.

Responses to Children's Work

We recognise the importance of responding to children's work, whether orally or in writing. We seek to encourage children by highlighting positive achievements. This might include praise for use of a viable method even if the end result were incorrect. Children are given opportunities, and actively encouraged, to explain their work to others. They are encouraged to value and respect the work of others.

Monitoring and Review

Monitoring the standards of children's work and the quality of teaching in mathematics is the responsibility of the mathematics Subject Leader, who, in turn, reports to the SLT. The work of the Subject Leader also involves supporting colleagues in the teaching of mathematics, being informed about current developments in the subject, and providing a strategic lead and direction for the subject in the school.

Links to other policies

Calculations Policy

Teaching and Learning policy