

Warden House Primary School



Mathematics Policy

Agreed by the Senior Leadership Team: Term 6 2023

'Good Mathematics is not about how many answers you know. It's how you behave when you don't know.' (Anonymous)

Intent

The maths curriculum at Warden House intends to support children to become confident and enthusiastic mathematicians. We recognise that maths offers children a powerful way of communicating as they learn to explore and explain their ideas using symbols, diagrams and spoken and written language. To be successful with this we teach a rich, balanced and progressive curriculum so children can recall key facts and have a strong understanding of key concepts to become fluent in their calculations and confident with their reasoning and problem solving.

To develop children's love and enthusiasm for the subject, regular opportunities are provided for them to rehearse their maths skills in a variety of fun contexts. We want the children to see the importance of maths, how much we use maths skills in everyday life and its worldwide application.

Implementation

Maths is a core subject in the 2014 National Curriculum. At Warden House we use the White Rose scheme of learning to support our teaching of maths mastery. The White Rose scheme is a spiral curriculum where learning is built upon sequentially to guarantee that children learn more and remember more. Units of learning are blocked and build on children's knowledge, skills and understanding throughout and across year groups. Overviews for each year group identify the objectives to be taught and break them down into small steps. Teachers personalise these materials as appropriate for their cohort and show how they will teach maths across the week, developing a thorough progression of learning through a topic. Other resources such as Target Your Maths, Primary Stars, Testbase and NCETM are occasionally used to supplement this thorough scheme. Across the school the CPA (concrete, pictorial, abstract) approach is used and ensures children have a solid foundation in all concepts.

Teachers use a variety of strategies within lessons and units such as quizzing and retrieval practice to ensure the children have a strong understanding of their learning and to identify and challenge misconceptions and embed learning.

Impact

Maths at Warden House is a valued part of the curriculum. It teaches children how to make sense of the world around them through developing their ability to calculate, reason and solve problems. It enables children to understand and appreciate relationships and patterns in both number and space in their

everyday lives. Through their growing knowledge and understanding, children learn to appreciate the contribution made by many people to the development and application of mathematics.

The aims of mathematics at Warden House are:

- To promote enjoyment and enthusiasm through practical activity, exploration and discussion
- To develop logical thinking, reasoning and problem-solving skills through a natural curiosity and investigative approach
- To promote confidence and competence so that children are proud to shine about their achievements
- To develop a thorough knowledge and understanding of numbers and the number system
- To develop a practical understanding of the ways in which information is gathered and presented
- To explore features of shape and space, and develop measuring skills in a range of contexts
- To understand the importance of mathematical skills in everyday life.

Teaching and learning styles

Our aim is to develop children's knowledge, skills and understanding of mathematics through a variety of teaching and learning styles. All classes teach a daily lesson that has a high proportion of whole class and group-directed teaching. In all classes a short daily fluency session is also taught, following specific objectives, to encourage quick recall of key facts so that this does not hinder children's cognitive load when faced with more complex concepts. Children are taught in their own class groups. During these lessons we encourage children to ask as well as answer mathematical questions using identified key vocabulary. They can use a wide range of resources such as number lines, number squares, digit cards and manipulatives to support their work.

Children work in a variety of groupings - individuals, pairs, small groups - dependent on the task being undertaken. Teaching assistants are used to support children and to ensure that work is matched to the needs of individuals. Same day feedback and revision of learning ensures all children keep up.

Children and teachers use ICT in mathematics lessons where it will enhance their learning, and to assist with modelling ideas and methods. Wherever possible, we encourage the children to use and apply their learning in everyday situations.

Children are also encouraged to use a variety of online games/apps to support their maths learning at home. From the summer term in year 6 weekly homework is set to enable children to be ready for their transition to secondary school. Years R-2 use Numbots and Year 2-6 use Times Table Rockstars to improve their recall of number facts, with regular competitions set up by the maths lead as well as close monitoring by class teachers to encourage high levels of engagement. The school also takes part in local maths competitions with other schools.

Inclusion

In all classes there are children of differing ability and age. We provide suitable learning opportunities for all children, including those who may be gifted and talented or have additional needs, by matching the challenge of the task to the ability of the child. Teachers plan for the targets set for individual children in their EHCP or as detailed on personalised plans and provision maps.

Resources

There are a range of resources stored in the maths cupboards located outside Year 2 and in each classroom, including place value counters, base 10 and Numicon, to support the teaching of mathematics. Mathematical dictionaries are available. A range of software is available to support work with computers/tablets. Teachers use maths learning walls to clearly demonstrate progression and deepening of learning through a unit of work.

Cross Curricular Links

English

In mathematics we actively promote the skills of reading, writing, speaking and listening. We encourage children to read and interpret problems to identify the mathematics involved. Younger children enjoy stories and rhymes that rely on counting and sequencing. All teachers identify key vocabulary for each block of work that they would like the children to focus on and use correctly and consistently.

Science

During science lessons, children can use and apply their data handling skills to real life situations. Whole class discussion of data also highlights the importance of clear recording of information. Children use a wide range of measuring devices and read the scales on Newton meters, measuring cylinders, weighing scales and a variety of other instruments.

Computing

Children use and apply mathematics in a variety of ways in computing. They produce graphs and tables when explaining results or when creating repeating patterns, such as tessellations. When working on control, children use standard and non-standard measures for distance and angle. They use simulations to identify patterns and relationships.

Personal, social and health education (PSHE) and citizenship

The planned activities encourage children to work together, respect each other's views and develop skills such as independence and determination. We present all children with real-life situations in their work such as the spending of money.

Spiritual, moral, social and cultural development

The study of famous mathematicians around the world contributes to the cultural development of our children.

Links to other curriculum areas are made as much as possible.

Equal opportunities

The governors and staff are committed to providing a full range of opportunities for all pupils, regardless of gender, disability, ethnicity, social, cultural, or religious background. All pupils have access to the curriculum, and the right to a learning environment, which dispels ignorance, prejudice, or stereotyping.

Health and safety

Any trips outside of school must be risk-assessed.

Assessment, recording and reporting

We assess children's work in mathematics regularly using formative and summative assessment techniques. Teachers make formative assessments during and after lessons, which they use to help adjust their daily plans. These assessments are closely matched to the 'Ready to progress' criteria in the DFE Maths Guidance for Key Stages 1 and 2 document.

In Years 2-6 summative assessment tests called PUMA (Progress in Understanding Mathematics) are used formally three times a year to measure progress and to help teachers plan the next unit of work from gaps identified in the tests. Year 1 use a variety of teacher assessments and White Rose assessments to make judgements 3 times a year about children's progress and attainment. These assessments are closely matched to the teaching and learning that term. After these assessments have taken place, teachers meet with SLT and discuss progress and areas for development as part of their PPMs. Teachers may also choose to use informal summative assessments during and after discrete units of work to gauge children's understanding and inform them of the next steps in learning. Year R also use Tapestry - an online tool to record children's learning in Mathematics and make judgements about their abilities and progress.

Formal statutory tests (SATs) take place in May each year in Year 2 and 6. Outcomes from these tests are used to assess progress against school and national targets. For year 2 it also helps to inform future planning. Progress and effort in maths is reported to parents three times a year.

In June children Year 4 sit the national MTC to assess their abilities with recall of times table facts. The results gained from the test and in the period leading up to the test will enable teachers to plan for and support children who have not met the year group expectations regarding this objective.

Teachers meet regularly with colleagues both inside and outside of school and trust to review individual examples of work against the national exemplification materials available nationally and share good practice.

Role of the subject leader

The subject leader completes an annual action plan where they evaluate the strengths and weaknesses in the subject and indicate areas for further improvement. The maths leader works closely with the maths team to deliver and work towards the current objectives. They promote a love of maths by organising and promoting a maths day and supporting activities such as a cross trust maths mornings and DLA maths bees.

Monitoring and review

Monitoring the standards of children's work and of the quality teaching in mathematics is the responsibility of the mathematics subject leader – supported by the maths team and is completed using a variety of techniques, such as book looks, lesson reviews and informal walk throughs. The subject leader also supports colleagues in the teaching of mathematics, informs staff of the current developments in the subject, trains where necessary, and, provides a strategic lead and direction for the subject in school. The subject leader gives the Headteacher an annual summary and action plan in which s/he evaluates strengths and weaknesses in the subject and indicates areas for further improvement. Progress in maths is analysed at regular points during the year and in the headteacher's report to the governing body which is produced three times per year. Challenge is provided through feedback meetings to SLT and governor monitoring visits as appropriate.

This Policy was written by Mary Norton – Mathematics Leader