

Warden House Primary School



Mathematics Policy

1. Aims and objectives

Mathematics teaches us how to make sense of the world around us through developing a child's ability to calculate, to reason and to solve problems. It 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 people to the development and application of mathematics.

The aims of mathematics are:

- To promote enjoyment and enthusiasm for learning through practical activity, exploration and discussion
- To develop logical thinking and reasoning 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 the ability to solve problems through decision-making and reasoning in a range of contexts
- 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.

2. Teaching and learning style

The school uses a variety of teaching and learning styles in mathematics lessons. Our principal aim is to develop children's knowledge, skills and understanding in mathematics. We do this through a daily lesson that has a high proportion of whole class and group-direct teaching. Children are taught in differentiated groups and not in their own class groups. In years 5 and 6 an extra teacher is available to teach a 4th group. During these lessons we encourage children to ask as well as answer mathematical questions. They have the opportunity to use a wide range of resources such as number lines, number squares, digit cards and small apparatus to support their work. 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.

In all classes, there are children of differing mathematical ability. We recognise this fact and provide suitable learning opportunities by supporting less able children and deepening the learning of the more able. Throughout lessons a range of strategies are used to ensure that all children are supported and challenged to make progress. Children are asked to undertake independent work but other strategies are also utilized. In some lessons group work is undertaken, and in other lessons, children are organised to work in pairs on open-ended problems or games. We use teaching assistants (TAs) to support children and to ensure that work is matched to the needs of individuals.

Children are set a weekly homework task in order to strengthen their learning in mathematics. This task directly links with the current unit of learning and is differentiated as appropriate.

3. Mathematics curriculum planning

Mathematics is a core subject in the 2014 National Curriculum. Teachers follow the Warden House 2014 Maths Curriculum supported by planning materials from White Rose and the LEA to plan for progress and coverage. Our school curriculum is inspired by Chris Quigley's Essentials curriculum, however is broken up into separate year groups rather than two-year Milestones.

We carry out the curriculum planning in mathematics in three phases (long-term, medium-term and short-term). Our whole school long term curriculum plan details the objectives to be taught across the year. This is detailed on the school website and is available to parents and children online. Medium term plans show where different maths topics are taught each term. Teachers personalise these based around materials provided from LEA and White Rose maths.

Short term plans are personalised by teachers and show how they will teach maths across the week. It is the class teacher who completes the weekly plans for the teaching of mathematics. These weekly plans list the specific learning objectives for each lesson and give details of how the lessons are to be taught. The class teacher uploads these individual plans to the school network (T:/ Drive) at the start of each week, and the class teacher and subject leader can discuss these on an informal basis.

4. Contribution of mathematics to teaching in other curriculum areas

English

Mathematics contributes significantly to the teaching of English in our school by actively promoting the skills of reading, writing, speaking and listening. For example, we encourage children to read and interpret problems in order to identify the mathematics involved. The children explain and present their work to others during plenary sessions. Younger children enjoy stories and rhyme that rely on counting and sequencing. Older children encounter mathematical vocabulary, graphs and charts when using non-fiction texts.

Science

During science lessons, children are able to use and apply their data handling skills when creating tables and graphs of scientific measurements. Whole class discussion of data also highlights the importance of clear recording of information. Children are also able to use a wide range of measuring devices in a real-life context. Children are required to read the scales on Newton meters, measuring cylinders, weighing scales and a variety of other instruments.

Computing (ICT)

Children use and apply mathematics in a variety of ways when solving problems using ICT. Younger children use ICT to communicate results with appropriate mathematical symbols. Older children use it to produce graphs and tables when explaining their 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. All year groups from Year 2 and above are using the structured Mathematics program to support and deepen their understanding of topics taught in school.

Personal, social and health education (PSHE) and citizenship

Mathematics contributes to the teaching of personal, social and health education and citizenship. The work that children do outside their normal lessons encourages independent study and helps them to become increasingly responsible for their own learning. The planned activities that children do within the classroom encourage them to work together and respect each other's views. We present older children with real-life situations in their work on the spending of money.

Spiritual, moral, social and cultural development

The teaching of mathematics supports the social development of our children through the way we expect them to work with each other in lessons. We group children so that they work together, and we give them the chance to discuss their ideas and results. The study of famous mathematicians around the world contributes to the cultural development of our children.

5. The teaching mathematics to children with SEN

We enjoy teaching mathematics to all children, whatever their ability. It is part of the school curriculum policy to provide a broad and balanced education to all children. We provide learning opportunities that are matched to the needs of children with learning difficulties. Work in mathematics takes into account the targets set for individual children in their EHCP (Education and Health Care Plans) or as detailed on their provision maps.

6 Assessment and recording

We assess children's work in mathematics regularly using both formative and summative assessment techniques. Teachers make short-term formative assessments both during and after lessons, which they use to help adjust their daily plans. These short-term assessments are closely matched to the teaching objectives (Milestones) from the Warden House Maths Curriculum and are recorded using the Class Track digital assessment system. (See assessment policy/ Teaching and learning policy for further details). These assessments are shared with parents and children at regular points throughout the school year.

Summative assessment tests 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. These assess both arithmetic and reasoning skills. We use termly assessments as a way of recording children's progress in objectives covered across that specific (long) term. Teachers may choose to use informal summative assessments during and after discrete units of work to gauge children's understanding and inform next steps in learning.

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. We can then set targets for the next school year (in consultation with secondary colleagues as necessary) and make a summary of each child's progress before discussing it with parents.

Teachers meet regularly with colleagues both inside and outside of school (DLA) to review individual examples of work against the national exemplification materials available nationally.

7. Resources

There is a range of resources to support the teaching of mathematics across the school. These are generally stored in the maths cupboards located outside Year 2. All classrooms have wide range of appropriate small apparatus including Numicon. Mathematical dictionaries are available in school. The library contains a range of books to support children's individual research. A range of software is available to support work with the computers / tablets. Maths displays are used primarily to support children's learning. Teachers use maths learning walls to clearly demonstrate progression and deepening of learning through a topic of work.

8 Monitoring and review

Monitoring of 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. The work of the mathematics 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. The mathematics subject leader gives the Principal an annual summary and annual 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 principal'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 – including external support from an educational advisor who works closely with the maths subject leader.

Equality statement

The governors and staff are committed to providing the 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.

Name of Reviewer: Mr Rob Hackett

Policy Reviewed: July 2018

Date Due for review: July 2019