Mathematics & Calculations Policy

Yew Tree Primary School

Date of Policy:	February 2024
Responsibility:	Sharon Fry (Maths Lead)
Review Date:	February 2027
Consultation:	This policy was developed in consultation with staff and governors with reference to the Maths Calculations Progression and Guidance.

ETHOS STATEMENT

It is the aim of the Governing Body of Yew Tree Primary School to develop policies and procedures which support the school's vision of:

"Learning Without Limits"

Aims and Objectives

Mathematics teaches us how to make sense of the world around us through developing a child's ability to fluently 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 that maths can be an exciting and stimulating subject to learn which has relevance to their own everyday lives. Problem solving and reasoning, including using and applying mathematics, is central to our teaching of mathematics.

The aims of mathematics are:

- to promote enjoyment, enthusiasm and motivation for learning through practical activity, exploration and discussion;
- to promote confidence and competence with numbers and the number system;
- to promote decision making through the selection of appropriate strategies;
- to develop the ability to solve problems in a logical way 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 be aware of the patterns and relationships in the structure of mathematics and to appreciate its creative aspects and aesthetic appeal;
- to understand the importance of mathematics in everyday life and its links with other areas of the curriculum.

Teaching and Learning & Pedagogy

The school uses a variety of teaching and learning styles in mathematics lessons, supported by planning and resources from White Rose and the DfE mathematics Guidance 2020. Our principal aim is to develop children's knowledge, skills and understanding in mathematics. We do this through a daily lesson with a high proportion of whole-class and group-direct teaching. During these lessons we use modelling and demonstration in order to engage the children in asking and answering mathematical questions. We ensure that children have the opportunity to learn in a variety of ways using and developing their visual, auditory and kinaesthetic skills. They have the opportunity to use a wide range of concrete and pictorial resources such as base 10, counters, number lines, number squares, digit cards and small apparatus to support their work. Children use ICT in mathematics lessons when it will enhance their learning, as in modelling ideas and methods. We signpost families to a number of ICT platforms including; Education City, One-minute maths, TT Blast and White Rose so that parents to support pupils learning both in school and through our remote learning commitment, which complements the work done in the classrooms. Wherever possible, we encourage the children to use and apply their learning in everyday situations in order to make it relevant to their experiences.

In all classes there are children of differing mathematical ability. We recognise this fact and provide suitable learning opportunities for all children by differentiating the challenge of the task to the ability of the child. Work is matched carefully to the needs of individual children offering a challenge so that they can reach their potential whether they are children with SEND or gifted and talented. Activities are structured so that every task allows for children to make progress to deepen their understanding as soon as a concept is grasped.

Problem Solving and developing reasoning skills are central to our teaching of mathematics. Reasoning statements and questions are posed to encourage children to articulate their methods and solutions and explain how they know (e.g. Tell me more; Prove it; Give me another example; How do you know?)

Mathematics Curriculum Planning

Mathematics is a core subject in the Curriculum 2014. We use a White Rose and the DfE mathematics Guidance 2020, as well as our own teacher assessments, to support us with planning and delivering the objectives of the Curriculum for each year group. White Rose provides us with a suggested yearly overview of how to cover objectives to ensure an appropriate balance and distribution of work across each term. The objectives are taught through steps that are built on from previous steps, resulting in children securing the skills and knowledge required before moving on.
It is the class teacher who completes the weekly plans for the teaching of mathematics. Each week, children take part in a sequence of five lessons based upon key objectives within the curriculum and each lesson includes an Arithmetic starter, focusing on number and calculation objectives from the curriculum. These weekly plans list the specific learning objectives, criteria for success and give details of how the lessons are to be taught. Class teachers save these plans electronically on the shared drive of the school server. The plans are periodically scrutinised by the Senior Leadership Team as part of the monitoring and moderation process to ensure continuity, coverage and progression.

Early Years Foundation Stage

We teach mathematics in our reception and nursery classes. As the classes are part of the Foundation Stage of the National Curriculum, we relate the mathematical aspects of the children's work to the objectives set out in the Early Years Foundation Stage mathematics educational programme, which underpin the curriculum planning for children aged three to five. As it does with Y1 – Y6, White Rose provides EYFS with a yearly overview of how to cover objectives to ensure an appropriate balance and distribution of work across each term. This enables us to give all the children ample opportunity to develop their understanding of numbers, patterns in numbers, shape, space and measure through varied activities that allow them to enjoy, explore, practise and talk confidently about mathematics through play.

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 and we ensure that word problems are included whenever possible in maths work. The children are encouraged to use a variety of methods for presenting their work pictorially, verbally and through written work. The children explain and present their work to others during lessons. 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. Where possible, teachers will plan mathematics activities that relate to each year group's study focus topic in order to develop mathematical skills and concepts further.

Information and Communication Technology (ICT)

Children apply their ICT skills through the use of ICT programmes like Education City, TT Blast, One-Minute Maths and LBQ. They 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, tables and spreadsheets to present and explain data that they have collated 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

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 including planning and using a budget.

Spiritual, Moral, Social and Cultural Development

The teaching of mathematics supports the social development of our children through collaborative working experiences. Central to this is the ability to share ideas and opinions, appreciating the views of others and adapting one's own views as a result.

Teaching Mathematics to Children with SEND

At our school we teach mathematics to all children, inclusive of all abilities. Mathematics forms part of the school curriculum policy to provide a broad and balanced education to all children. Through our mathematics teaching we provide learning opportunities, using a variety of strategies that enable all pupils to access the curriculum and make progress. We do this by setting suitable learning challenges and responding to each child's different needs. Assessment recorded on Insight (the schools pupil tracker), and against the Curriculum Objectives and the Early Years Foundation Stage curriculum allows us to consider each child's individual progress and attainment against expected levels.

When progress falls significantly outside the expected range, the child may have special educational needs. Our assessment process looks at a range of factors – classroom organisation, teaching materials, teaching style, differentiation – so that we can take some additional or different action to enable the child to learn more effectively. This ensures that our teaching is matched to the child's needs.

Intervention through Quality First Teaching, school support interventions or an IEP (Individual Education Plan) may lead to Inclusion Support Services becoming involved if the child continues to not make progress. These interventions may include, as appropriate, specific targets relating to mathematics that are carefully and regularly monitored.

Assessment and Recording

We continually assess children's progress in mathematics against curriculum objectives. Progress towards meeting these objectives is regularly recorded and updated on Insight (the school's pupil tracker). Assessment for Learning is used to identify strengths and next steps in individual and groups of children's learning and inform planning accordingly. Progress and attainment in mathematics is discussed, in pupil progress reviews, following data drops set by the school.

Teacher assessment is supported by on-going classroom assessments, end-of-block assessments, data collated from end-of-year tests; the national tests for children in Year 6, plus the optional national tests for children at the end of Years 2, 3, 4 and 5.

We also use the assessment data detailed above to set targets for the next school year and make a summary of each child's progress in our annual report to parents. We pass this information on to the next teacher at the end of the year, so that they can plan for the new school year. We also make annual assessments of children's progress measured against the level descriptions in the Early Years Foundation Stage profile.

Resources

There are a range of resources to support the teaching of mathematics across the school. All classrooms have a working wall for maths and there is an expectation of display items for individual year groups (see Maths Display Expectations). There is a wide range of software available to support work with the computers which includes a set of laptops in year 1, a set of iPads in Reception and years 2-6 having access to their own allocated laptop in school. Each class is equipped with an Interactive Whiteboard which further enhances the teaching and learning of maths and Reception have a tilting touch table with software. Maths and Phase Leaders liaise with all staff, from Nursery through to Year 6, to identify resource needs. Following discussions, the Maths Leader will prioritise resource needs and allocate funds accordingly.

A separate Maths Calculations Progression and Guidance is in place to support teaching and learning in this area.

The teaching of multiplication tables is conducted through a resource called the '99 Club'. Time is allocated daily to the teaching of times tables. Pupils from years 1-6 focus on the individual times table club they are working on, with teachers supporting them in applying a range of techniques to learn the facts. Individuals then complete a timed times table club each week. Children are motivated to move up the clubs as they aim not only to reach their own year group clubs but also those beyond.

Monitoring and Review

Monitoring of the standards of children's work and of the quality of teaching in mathematics is the responsibility of the Maths Lead and the Phase Leaders in consultation with the Senior Leadership team. The work of the Maths 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. Over the school year the Maths Leader gives the Headteacher and governors regular updates relating to progress in maths including group targets and any work and planning scrutinies carried out.

The Maths Leader gives the Headteacher an annual summary in which they evaluate strengths and weaknesses in the subject from a variety of sources and indicates areas for further improvement. This then feeds into the school's improvement plan. The Maths Leader has leadership time so that they can review samples of children's work and undertake lesson observations of mathematics teaching across the school. A named member of the school's governing body is briefed to oversee the teaching and learning, including maths. Governor Visits take place throughout the school year and may involve discussion with Maths Lead and Phase Leaders.

Equal Opportunities and Inclusion

This policy is to be considered in line with our Equality Duty (published separately) and we will ensure that at all times we will seek to promote equal opportunities for all in line with the Equality Act 2010.