



Maths Policy

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Mathematics in the Curriculum

At Wolviston Primary School our intent for mathematics is to ensure that all children become mathematicians. This is through the teaching of a knowledge rich, balanced and progressive curriculum using maths to reason, problem solve and develop a depth of fluent conceptual understanding in each area. As stated in the National Curriculum, we aim for all children to be 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. We aim for all children to be able to reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language. Also, we aim for all children to be able to 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.

Curriculum Structure

Maths is a core subject with discrete skills and capability to be developed. Skills are transferable across the curriculum and this is recognised in the planning, teaching and assessment of mathematics.

Early Years Foundation Stage

In EYFS, teaching and progression in maths is within the area of Number and Numerical Patterns. The planning, teaching and assessment of mathematics in Early Years is according to the Early Learning Goals.

Key Stage One

In Key Stage One, the principal focus of mathematics teaching is to ensure children develop confidence and mental fluency with numbers, counting and place value. This includes working with numerals, words and the four operations. Practical resources (such as concrete objects and measuring tools) are used to support the development of knowledge and to ensure all children experience a positive engagement with the subject. At this stage, pupils should develop their ability to recognise, draw, compare and sort shapes and use related vocabulary. Teaching should also involve using a range of measures to describe and compare different quantities such as length, mass, capacity/volume, time and money.

Lower Key Stage 2

The principal focus of mathematics teaching in lower Key Stage 2 is to ensure that pupils become increasingly fluent with whole numbers and the four operations, including number facts and the concept of place value. This will underpin and develop efficient written and mental methods and perform calculations accurately with increasingly large numbers. At this stage, pupils should develop their ability to solve a range of problems, including with simple fractions and decimal place value. Teaching should also ensure that mathematical vocabulary is taught explicitly and that children have opportunities to explain their

reasoning. Pupils should deepen their understanding of shapes, drawing with increasing accuracy, analysing and describing their properties and confidently describe the relationships between them. Pupils should also have the opportunity to demonstrate their ability to use measuring instruments accurately and make connections between measure and number.

During Year 3 and Year 4, multiplication tables are given great importance and are used in a variety of concepts. By the end of Year 4, children should have developed a precise and fluent recall of multiplication tables up to and including the 12-multiplication table.

Upper Key Stage 2

The principal focus of mathematics in upper Key Stage 2 is to ensure that pupils extend their understanding of the number system and place value to include larger integers. This should develop the connections that pupils make between multiplication and division with fractions, decimals, percentages and ratio.

At this stage, pupils should develop their ability to solve a wider range of problems, including increasingly complex properties of numbers and arithmetic, and problems demanding efficient written and mental methods of calculation. With this foundation in arithmetic, pupils are introduced to the language of algebra as a means of solving a variety of problems. Teaching in geometry and measures should consolidate and extend knowledge developed in number. Teaching should also ensure that pupils classify shapes with increasingly geometric properties and that they learn the vocabulary they need to describe them.

Organisation and Timings

Across the school, teachers deliver a daily mathematics lesson. Work is differentiated according to the needs of individuals and groups. The curriculum caters for those with Special Educational Needs, to the more able pupils.

Approaches to Teaching

When delivering lessons, teachers employ a range of strategies and use professional judgement to decide on the most appropriate teaching and learning style for the class, groups or individuals.

Teaching strategies may include:

- Whole class quality first teaching
- Paired or group work
- Individual enquiry
- Guided work with a teacher or teaching assistant
- Focused support work with a teacher or teaching assistant
- Practical work with apparatus
- Active learning
- Opportunity to work with concrete, pictorial and abstract methods
- Clear demonstrations, modelling and explanations
- Plenary sessions addressing misconceptions, consolidate learning and move learning forward

Inclusion

All children have equality of access to mathematics provision, regardless of gender or ethnicity. Children all engage with and are taught by a qualified teacher providing quality first teaching. Children are taught in mixed aged classes and in each lesson mathematics is related to a common theme and is differentiated appropriately with reference to the children's prior attainment. Children who have Special Educational Needs in maths may receive additional support from a teacher or teaching assistant. All pupils have an opportunity for guided group work with the teacher at different stages of the teaching cycle. Intervention and support groups are to be used as appropriate.

Challenge and Mastery

In Key Stage Two, daily mental maths sessions allow children to apply their mathematical knowledge independently. The mental maths tests they complete allow children to experience a range of question types, including arithmetic style questions and reasoning style questions.

Resources

Mathematics resources are stored in classrooms and larger equipment is stored in the storage units in the main school corridor. Tagtiv8 equipment is stored in the conservatory in Class 2 and is accessible for all classes. Each class has an 'active learning' box to be used to support active maths lessons or activities. Calculators are introduced near the end of Key Stage 2 to support pupils' conceptual understanding and exploration of more complex number problems, if written and mental arithmetic are secure. Mathematics games are available on each class' iPads, including Times Tables Rock Stars which children in Key Stage 2 are provided with logins for.

Planning and delivery of mathematics lessons is supported using:

- White Rose Maths Hub
- Hamilton Trust
- Abacus textbooks
- Tagtiv8
- Teach Active
- Times Table Rock Stars
- SeeSaw
- Purple Mash

Home Learning

Home learning is much valued and encouraged. Maths homework should be distributed on a weekly basis and is rooted in the topic of the week. Homework is set using My Maths or occasionally using SeeSaw. Online activities such as Times Tables Rock Stars are used to make learning anytime, anywhere focused. Paper copies of maths homework is also made available upon request.

Assessment

Assessment of children's progress in mathematics is carried out in a variety of ways. Prompt marking and feedback is given to children in accordance with the school marking policy. Teachers use assessment for learning to influence future planning and provision. This includes modifying planning and altering future teaching methods/approaches. NTS assessments are used to provide summative evidence at the end of each term and school year. In Key Stage Two, children use RAG rating to assess their own progress against the learning objective. Teacher assessment is used to assess pupil progress - this provides a realistic and rounded view of a child's progress. Data is recorded on Target Tracker to allow senior leaders to analyse and track performance of individuals, groups and classes.

Parents are informed of their child's progress against national expectations at parents' evenings and in the written school report in the summer term.