



# MATHEMATICS AT WOODHALL PRIMARY SCHOOL



*'The only way to learn mathematics is to do mathematics'* (Paul Halmos)

*'Arithmetic is being able to count up to twenty without taking off your shoes'* (Mickey Mouse)

**The National Curriculum for mathematics intends to ensure that all pupils:**

1. 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;
2. **Reason** mathematically by following a line of enquiry, **conjecturing** relationships and generalisations, and developing an argument, justification or **proof using mathematical language**;
3. **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.

## **INTENT**

The teaching of mathematics at Woodhall Primary School is planned to provide a bespoke curriculum that caters for the individual and specific needs of all children, whatever their starting point; so that, as a result, all children develop to become fluent in the fundamentals of mathematics. We aim to ensure that our children are confident mathematicians who are not afraid to take risks, have inquisitive minds and have an interest in self-development and self-improvement.

Through the curriculum, we ensure that our children will be able to use numbers and mathematical concepts confidently. We support children who see maths as confusing or a mystery to break down ideas into simple steps using concrete, pictorial and then abstract thinking. We aim for children to develop into independent learners with the resilience that enables them to use their knowledge and understanding to reason and problem solve with increased confidence.

The curriculum we follow is based on the Herts for Learning 'Essential Maths' sequences, which have been carefully designed to allow for the delivery of bespoke, personalised lessons that ensure consistency and progression for all learners, regardless of ability or need, across all year groups. The programme uses a 'spiral learning' approach, based on the premise that a student learns more about a subject each time the topic is reviewed or encountered, builds confidence, expands knowledge and improves skill levels. This further ensures that children see learning in mathematics as an ongoing process and not a one-off event.

Although taught discreetly, the mathematical skills acquired by children are applied in other curriculum areas, including science and topic, to further broaden and enhance children's learning experiences. Such experiences also allow further links to be made with children's experiences of maths outside of school, for example cooking, measuring, timing, counting and shopping. The development of reading is a key area for the school and within mathematics, children are supported to read and make sense of a variety of worded problems and age appropriate questions.

The development of children's speaking and listening skills is another key priority and Essential Maths supports the development of these through the use of speaking frames. These speaking frames are adapted and personalised to support all children to verbalise their thoughts and understanding whilst also promoting the accurate use of correct mathematical vocabulary.

We promote that mathematics is for everyone, no matter the age, disability, gender, race, religion or belief and sexual orientation, and celebrate success. Ultimately, our aim is for **all** our children to experience interesting and exciting mathematics lessons that both challenge and cultivate a sense of enjoyment and achievement in mathematics learning.

**By the time our children leave Woodhall, we want to ensure our children:**

- are fluent in the fundamentals of mathematics
- are able to reason mathematically by following a line of enquiry, conjecturing relationships and generalisations
- are able to solve problems by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication
- have developed a love of mathematics and the necessary skills to be successful in the next stage of their education and from there into further education, if they so choose.

**IMPLEMENTATION**

Nursery children begin to develop key mathematical skills during daily maths meetings where they explore sorting, quantities, shape, number and counting awareness. Children in Reception take part in a daily 15-minute session with an emphasis on studying key skills of number, calculation and shape, so that they develop deep understanding and the acquisition of mathematical language. Pupils learn through using concrete manipulatives, which are then rehearsed and applied to their own learning during exploration. These early mathematical experiences are carefully designed to help pupils develop the content they have been taught and to support them with integrating their new knowledge across the breadth of their experiences and into larger concepts.

To ensure full coverage of the mathematics curriculum, the school uses Herts for Learning Essential Maths planning sequences as a foundation for teaching and learning in KS1 and KS2. This programme allows for continuity and progression in the teaching of mathematics. As children re-visit an area of learning they will learn more about it, developing their understanding, confidence and application further.

It is a flexible approach, with a customisable planning tool, that allows each teacher to respond to the specific needs of all children in the class and teach each concept in a unified but individual way thus ensuring that lessons are differentiated, accessible to all and that there is appropriate challenge and support for all learners. Concrete manipulatives and pictorial representations are utilised to support conceptual understanding and to make links across topics.

Within the programme, pupils have opportunities to engage in ‘real life’ maths problems that provide a stimulating challenge for all abilities whilst deepening and extending mathematical thinking for all learners. Success criteria and destination questions are used to guide children ensuring that they achieve their potential and foster high aspirations for themselves.

In addition to daily mathematics lessons of one hour a day in Key Stages 1 and 2, children also benefit from regular (2-3 times a week) additional developing fluency sessions, designed to allow pupils to make rich connections across mathematical ideas, develop reasoning and competence in solving increasingly sophisticated problems. Through pre-teaching, consolidation and fluency sessions we will ensure all

children can access the mathematics curriculum so that they will be supported and challenged whilst allowing opportunities for more able and confident pupils to extend their knowledge further in creative ways that show mastery of the concept.

Children from Year 2 upwards have access to ‘Times Tables Rock Stars’, an engaging online platform where pupils develop their recall of multiplication table facts up to 12x12. Emphasis is placed on children making progress at their individual level throughout the year and this is celebrated in a variety of ways, including the use of certificates for most improved player across a week or a term.

Through our carefully planned individualized curriculum, we aim that all children, at a minimum, meet the National Curriculum expectations.

### **IMPACT**

Children are both formally and informally assessed to ensure that planning and teaching is targeted and all pupils are making expected or better than expected progress with teachers actively marking work in lessons in order to identify and address misconceptions early. We use the diagnostic assessment tool from Essential Maths to monitor the progress of all individuals and from this are able to identify areas of learning success and any area that may require further teaching input for individual pupils. Through our teaching, we continuously monitor pupils’ progress against expected attainment for their age; this may be through the use of ‘destination questions’ or asking children to write an explanation or give an example to explain what they have understood. In addition, children are assessed termly using a standardised assessment test, which gives further information about the attainment and progress of each pupil from term to term and from year to year. This is also used to compare against national data and provides reliable predictive and diagnostic information.

All assessment is used to inform future planning and discussions in termly Pupil Progress Meetings and subsequent tracking of attainment and progress. The main purpose of all assessment is to ensure that we are providing excellent provision for every child.

To ensure our children meet their goals and we are evaluating and improving our provision, a comprehensive cycle of monitoring and evaluation has been put in place to monitor the curriculum and the standards achieved by all children. The mathematics leaders carry out the following throughout the academic year:

1. Planning scrutiny;
2. Work sampling;
3. Learning walks;
4. Pupil voice conversations;
5. Termly data analysis;
6. Moderation across year groups to ensure accuracy within judgements;

From this, detailed feedback is provided to individual teachers, senior leaders and governors, with next steps in place that underpin school priorities. Termly summaries that detail common strengths and areas for development are then written and shared with all staff. These actions serve to drive school mathematics priorities forward, to give senior leaders a breadth of evidence and an accurate overall picture of school improvement within the mathematics curriculum.

**Relevant Website Links:**

**School Development Plan (parents/carers' version):** <https://woodhall.herts.sch.uk/wp-content/uploads/2022/09/Woodhall-School-Development-Plan-2022-2023-Parents-Version-1.pdf>

**Curriculum (subject ladders/curriculum overviews):** <https://woodhall.herts.sch.uk/curriculum>

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**Reviewed:** July 2022