



WISEWOOD
NURSERY & PRIMARY SCHOOL

Mathematics

Intent, Implementation and Impact Statement



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Mathematics Curriculum Intent

At Wisewood Primary School, we have designed a maths mastery curriculum from FS – Y6 with the intent that children will believe in themselves as mathematicians and develop the power of resilience and perseverance to become independent, confident, and competent learners. Through the delivery of a high-quality maths curriculum, we have high aspirations for all our children to become fluent mathematicians and inspire a love of problem solving and reasoning through the children's secure conceptual understanding of the mathematics taught. We use progressive representations to ensure that each child gains a deep conceptual understanding that grows each year.

We are inclusive of all children having created a curriculum design that has no glass ceiling and scaffolds all to achieve; regardless of their background or previous experience. Maths lessons at Wisewood use a sling shot approach. We believe that 'prior knowledge is one of the most influential factors in learning', (Ausubel 1968). We believe in the science of learning perspective which positions prior knowledge as central to organising and reassembling new information to make it meaningful. We begin at a point that all children can engage and feel comfortable, which recaps previous knowledge and understanding. This prompts our pupils to make connections between previous and current learning. The lesson then moves rapidly to an aspirational point for each child. We work to ensure excellence in all teaching and learning opportunities and have created a system and culture that supports each child to have a growth mindset. All pupils at Wisewood can reach the most challenging point and beyond.

We provide a curriculum that enables pupils to make rich connections across mathematical ideas to develop fluency, mathematical reasoning, and competence in solving increasingly sophisticated problems. We provide our children with stem sentences, tier 3 vocabulary and speaking frames to support high quality mathematical talk and a scaffold for reasoning. Children have opportunities to recall previous learning daily; improving working memory and therefore ability to apply their mathematical knowledge. We aim for each child to contribute to each lesson as they become increasingly independent learners. As a school we follow, 'Number Sense Maths' which is a highly visual number fact teaching programme. This provides the children with strategies to quickly derive essential addition and subtraction number facts - automaticity. We also believe that this will give our pupils the best possible start and support to problem solve and calculate more complex procedural maths.

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Our curriculum is based on the aims of the National Curriculum for Maths 2014 to allow all children to:

- 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
- Reason mathematically by following a line of enquiry, conjecturing relationships, and generalisations, and developing an argument, justification or proof using mathematical language
- 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

Wisewood Scheme of Learning

At Wisewood, we acknowledge that each strand of a child's development in mathematics is of equal importance and is purposefully targeted through a well organised, progressive, and structured sequence of learning. We aim for children to develop conceptual and procedural fluency in arithmetic for them to be able to reason and solve problems in mathematics. Every class, from EYFS to Y6, follows the Wisewood Way, which is based on the White Rose Scheme of Learning and is underpinned by the National Curriculum. Maths is taught daily in lessons which are personalised to address the individual needs and requirements for a class or child, whilst coverage is maintained.

Assessment

We continuously monitor pupils' progress against expected attainment for their age. Our teaching is informed by rigorous baseline assessment prior to the strand being taught. Assessments are completed and evaluated in advance of the unit of work being taught, and pre-teach and fluid interventions ensure that students keep up and reach their potentials. All adults speed mark daily and group the children into those that need extra support, those who need to consolidate and those that can be stretched further. Through this rigorous gap analysis and continually, we increase the number of students able to start at the age-related expectations of their year group.

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Assessment

Summative assessments are completed termly and their results, alongside teacher judgements, form a discussion in pupil progress meetings. The overall purpose of all our assessments is to ensure that every child has the correct provision to make the best progress that they can.

Fluency and Recall

We develop fluency and 'interrupt forgetting' by revisiting previously taught content daily in 'Maths Skills.' We see that fluency consists of three elements - efficiency, accuracy, and flexibility.

- Efficiency, an efficient strategy is one that the children can carry out easily and understand the logic of the process.
- Accuracy is dependent on several aspects of the problem-solving process, the understanding of careful recording, knowledge of number facts and other important number relationships, and double-checking results.
- Flexibility requires the knowledge of more than one approach to solving a particular kind of problem. Children need to be able to choose an appropriate strategy for the numbers involved and be able to use one method to solve a problem and another method to check the results.

We aim for our pupils to become fluent in the fundamentals of mathematics through varied and frequent practice, to promote children committing knowledge to their long term memory. Maths Skills sessions will include arithmetic drills, as we know that quick and efficient recall of facts and procedures is important, yet we understand that fluency demands more of students than just memorising procedure. Children's mathematical skills will be developed in these sessions through recall activities which develop speed, accuracy, efficiency, and flexibility and deepen conceptual understanding. Daily Reasoning activities will teach children strategies to solve the types of mathematical problems they are likely to encounter in and out of school.

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Times Tables

There is a Times Tables session outside of the maths lesson each day for all children to learn, rehearse and apply their understanding of times tables.

Knowing times tables aids mathematical learning, understanding and application. Our aim is to ensure that children have automatic recall of the times tables up to 12x12 by the end of Year 4 and the related division facts by the end of Year 6. Knowing times tables helps develop learning by freeing cognitive space to learn new ideas and use mathematics to solve problems. Times tables are to be taught discretely in all year groups in an engaging and practical way. The Times Table session includes regular written and oral times, table recall practice as well as opportunities to make connections and embed conceptual understanding of multiplication and division. The Wisewood Times Tables Policy outlines exactly how and why we teach times tables.

Conceptual Understanding

We implement our approach through high quality teaching where we deliver appropriately challenged work for all children. We have a concrete, pictorial, abstract approach and use a range of resources across all year groups to ensure conceptual understanding. We teach new concepts using concrete equipment, progressing to images and diagrams (pictorial). When children have a secure conceptual understanding, we move onto abstract questions. Abstract maths relies on the children understanding a concept thoroughly and being able to use their knowledge and understanding to solve maths without equipment or images.

Mathematical Language

We recognise that using correct mathematical language is crucial for thinking, learning, and communicating mathematically. We teach precise mathematical vocabulary and provide sentence structures for pupils to use to capture, connect and apply important mathematical ideas, then adapt, apply, and reason in new contexts. We have core mathematical vocabulary and language structures to be taught, used, displayed, and promoted for each age-group as part of the Wisewood Scheme of Learning.

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Reasoning and Problem Solving

Mathematical problem solving is a learned skill. We teach problem solving through explicit modelling, which takes place regularly during daily maths lessons. When children have secured a conceptual understanding of the mathematical idea, they are expected to apply this to solve mathematical problems. Some children may move to this stage more quickly, and all children will be given this opportunity twice a week.

Early Maths

We acknowledge that early maths forms the foundations for success, confidence, and fluency within all areas of mathematics throughout children's development and education. The Foundation Stage maths curriculum is based on the Development Matters and Early Years Foundation Stage Profile 2020/21. A planned sequence of learning is delivered daily and builds on knowledge, skills, and application. In line with Key Stages 1 and 2, the skills progression is taken from the White Rose Maths Hub to enable children to have the prior learning they need to successfully access a Year 1 curriculum. Children are given opportunities to embed their learning and explore concepts through carefully planned continuous provision. In the Early Years, maths is practical, physical, and relevant.

Inclusion and Intervention

We value mathematics as a life skill and aim to equip all children with numeracy skills in preparation for secondary education and beyond. For children with special educational needs or disabilities, this may mean adapting our teaching and learning in response to their needs. Any children working significantly behind age related expectations and with identified learning needs will follow an individualised timetable using the Birmingham SEN Toolkits.

Most of our children will be working within age related expectations alongside the National Curriculum. With our mastery approach, most children will learn together, and our pre-assessment and pre-teaching sequence will enable us to identify and quickly address any gaps that children have. When interventions do happen, we consider the Ready to Progress Criteria outlined in the 2020 non-statutory guidance from the DfE.

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Inclusion and Intervention

We are also committed to meeting the needs of our high attaining pupils. We believe that generally our pupils benefit from engaging with whole class teaching to move rapidly to a point of high challenge. The pre-assessments sequence guarantees that our gifted mathematicians, or anyone who has already secured a concept at the age related expectation, will have opportunities to explore and make connections between concepts. Activities for these children will promote dialogue, where children develop their own and peers' reasoning, logic and problem-solving skills through collaborative problem-solving

Cross Curricular

Maths skills are applied in other subjects where purposeful links can be made.

CPD

We continuously strive to improve our teaching and learning in maths. Our maths subject leader takes part in training opportunities from the local authority and NCETM Mastery Working Groups with the South Yorkshire Maths Hub. We carry out regular (at least termly) in-house CPD sessions based on the training. Maths is monitored through learning walks, work scrutiny and lesson observations where feedback is given and 1:1 coaching for identified staff is provided as needed.

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Impact

Pupil Voice

Through discussion and feedback, children talk enthusiastically about their maths lessons, they can articulate the context in which maths is being taught and use the appropriate vocabulary to explain their learning. Children aspire to be successful in maths. Children show confidence and believe they can learn about a new maths concept and apply the knowledge and skills they already have to progress in their learning.

Evidence in Knowledge

Children know that maths can contribute to their success in school and the workplace and recognise the relevance of maths in the outside world. Most pupils know and achieve at the expected standard for their year group and can make connections from previous learning. Mathematical concepts or skills are mastered when a child can demonstrate the skill in multiple ways and use the skill for problem solving and reasoning. Children will use mathematical language to explain their ideas on the concept or to new problems in unfamiliar situations. Children demonstrate a quick recall of facts and procedures; this includes the recollection of the times tables.

Evidence in Skills

Pupils use acquired vocabulary in maths lessons. They can apply the skills taught independently and show resilience when tackling problems. Children are confident to tackle a new problem, aware that they might not get it right on the first attempt and, when they make mistakes, they have strategies to independently address and correct them. They have the flexibility and fluidity to move between different contexts and representations in maths and choose the most efficient methods to solve mathematical problems. Progression can be seen through different starting points determined by solid assessment for learning.

Outcomes

At the end of each academic year all our children will have achieved at their full potential. We expect the children to have achieved Age Related Expectations (ARE) for their year group. Some children will have achieved at greater depth (GD). Children who have gaps in their knowledge receive appropriate support and interventions to try and reduce the attainment gap. Where appropriate, our SEND children will have received an individualised curriculum and show good progress