



Mathematics

'At Ellington Primary School, Maths allows us to become fluent in calculation, to reason about the maths we are using and to solve problems.'

Introduction and Aims

Our maths provision aims to create a culture of high achievement in maths which leads to confident children who show resilience as they master the key concepts of fluency of calculation, logical reasoning and problem solving. We cover the statutory aims of the National Curriculum for Maths. The school utilises Big Maths as well as supporting resources from White Rose Maths and Classroom Secrets to help plan, resource, assess and achieve these aims. All of this aims to prepare children for the next stage of their education in Maths as well as preparing them for later life. Ellington Primary School has developed a mastery approach to teaching maths that utilises a low threshold high ceiling approach which provides adaptive teaching approaches to support those children that require it and to provide additional challenge for more able students through reasoning and problem-solving opportunities.

[Statutory framework for Early Years Foundation stage including Maths.](#)

[Mathematics Programme of Study: Key Stage 1 and 2. National Curriculum in England.](#)

Intent

Mathematics equips pupils with the uniquely powerful set of tools to understand the world. These include, logical reasoning, problem solving skills and the ability to think in abstract ways. Mathematics is integral in everyday life; therefore at Ellington Primary, we endeavour to ensure that children develop a positive and enthusiastic attitude towards mathematics. Mathematical skills are delivered, explored and revisited through clear decision making and awareness of the individual child, their learning and progress needs. We endeavour to ensure children develop resilience and confidence in themselves in applying their learning skills.

The School's Curriculum Drivers:

Aspirations

We aim for our children to have high aspirations in Maths so they can achieve their potential. We set ambitious targets for the children to encourage all learners to achieve. We aspire for the children to be fluent in performing mathematical operations and processes accurately and quickly. This fluency has four parts: accuracy, automaticity, speed and flexibility. Through Big Maths from Reception to the Summer Term of Year 4, we have termly sets of key number facts (Learn Its) that we want children to aspire to be able to recall. This includes times table facts to 12 x 12 to help prepare children for the Multiplication Tables Check in Year 4. We want children to be able to reason about the maths they use to logically justify and identify key information in problems and to select the most appropriate process to arrive at a solution. Finally, we want children to aspire to be expert problem solvers by thinking systematically to make appropriate decisions to apply known skills in a variety of contexts. By achieving these

aims, children should be able to reach the age-related expectations for their year group and perform to the best of their ability in statutory assessments.

Wider World

Mathematics equips pupils with the uniquely powerful set of tools to understand the world. Mathematics is integral in everyday life; therefore, at Ellington Primary, we endeavour to ensure that children develop a positive and enthusiastic attitude towards mathematics. We utilise Big Maths Assessment Spines to have an awareness of the individual child's learning and progress needs. We endeavour to ensure children develop resilience and confidence in themselves in their mathematical learning which will help them to become more confident and resilient in later life.

Independent Thinking

Maths is a pivotal part of developing our children's independent thinking. Through our marking and assessment, we ensure that children revisit their learning in line with metacognition strategies including spaced learning and overlearning. The use of Big Maths Beat that challenges along with targeted intervention address children's gaps in learning to ensure rapid progress. Our mathematics curriculum is diligently sequenced to ensure that knowledge gained is cumulative; this aids progression as well as frequently providing pupils with the opportunity to draw on knowledge from previous year groups.

Interlaced into every mathematics lesson we encourage positive, learning behaviours and support pupils in developing the skills that we believe are necessary for success in the wider world. We encourage pupils to recognise how they learn best and what tools they can use to aid their knowledge of mathematical skills.

Implementation

We use Big Maths scheme of work to help meet the aims of the National Curriculum. The Big Maths Scheme of work splits maths into two areas Core Maths which includes counting, place value, number facts (Learn Its), applying learning to new situations (It's Nothing New) and Calculation including column methods. This forms the basis of a daily 15-20 minute CLIC session. Five minutes are each spent on Counting, Learn Its, Its Nothing New and Calculation. Then there is Outer Maths which forms the basis of the majority of 45-50 minute lessons. This incorporates Shape, Amounts (measures), Fractions (and decimals and percentages etc.), and Explaining Data. Children are assessed weekly from Year 1 up using the Big Maths Beat That Challenges that assesses their progress on CLIC, Learn Its and SAFE targets. Children are given a baseline assessment to identify the step they are on and the questions they are getting incorrect tell us the children's gaps in learning. These gaps are then addressed through homework packs that parents will support with and through targeted intervention in school.

Teachers are supported in planning and resourcing as Big Maths is comprehensive and comes with PowerPoints and resources that teachers can adapt. We also use other resources including White Rose Maths and Classroom Secrets to help teachers to resource effective problem-solving opportunities to stretch the more able. To ensure we give the children a good grounding in Place Value, we teach Place Value for three weeks using the White Rose Maths resources along with daily CLIC sessions at the start of the year before moving to the Big Maths Calculation and Outer Maths units of work.

Big Maths Planning Drives split the aims of the National Curriculum into termly targets and give the teachers small steps to inform planning. Children revisit and build on previous learning and teachers can see what has been covered previously and what the children will move onto next. This reinforces teachers and children's knowledge of Why this and why now?

Children will be supported when appropriate with concrete manipulatives and by having access to working walls to support their understanding. Big Maths provides a set of instructions for each lesson called 'Remember To' which will also be used to support the pupils' understanding.

What will I see if I visit a mathematics lesson at Ellington?

High Quality Teaching: The most important lever schools have to improve pupil attainment is high quality teaching. Teachers will plan engaging and well-pitched lessons. These will be effectively resourced using Big Maths planning drives and supporting resources where necessary. Teaching is informed by Rosenshine's Principles of Effective Instruction. Because Big Maths have termly CLIC targets the children can overlearn these vital number facts and skills.

A CLIC Session: A 15 to 20 minute starter with 5 minute tasks focussing on Counting/Place Value, Learn Its, Its Nothing New and Calculation. Children will complete their work on whiteboards and sessions will follow a I do, we do, you do approach where suitable.

The Mastery Approach: Low threshold, high ceiling. Adaptive teaching approaches to support the lower attaining children. This will include the use of carefully selected concrete manipulatives and working walls. Children will also be given opportunities to reason and problem solve to ensure all children are appropriately challenged.

Clear Explanations and Modelling: Big Maths provides teachers with worked examples of the questions that the children will complete. These inform our whole school calculation policies so approaches are consistent between classes.

Skilful Questioning: Learner's understanding is consolidated and deepened by effective questioning.

Revisiting Prior Learning: Weekly Big Maths Beat That Assessments helps to identify and plug gaps in learning, measure progress and ensure key learning is revisited.

Opportunity to Consolidate and Extend Learning: Teachers mark children's work daily and use this to inform next steps. After CLIC session, as children begin the main section of the lesson focussing on column methods of calculation or wider maths, children complete either a 'Consolidation Task' or a 'Green Star Challenge'. Consolidation tasks are completed when children have a misconception or require further practice. Green Star Challenge Tasks provide additional challenge when children have answered the vast majority of questions correctly to help deepen understanding.

Work Children are Proud of: At Ellington Primary School, we celebrate beautiful work. Driven by our value of 'Pride' we teach children the importance of well-presented, carefully planned work.

Consistent Vocabulary: Big Maths includes a set of vocabulary that is used consistently across year groups.

Effective Feedback: Children's work in mathematics is marked in line with the whole school assessment and feedback policy.

Impact

Pupils will know more and remember more maths knowledge and skills. They will become fluent in calculation using taught strategies. They will have automaticity of key number facts (Learn Its) that they can call upon when completing calculations. Children will be able to reason about the maths they use to identify key information and select the most appropriate strategy.

Children will be able to utilise their fluency and reasoning skills to solve problems.

Children will maximise their potential by making progress as measured on Big Maths Beat That Challenges which will also allow teachers to identify and plug individual gaps of children. In addition children will perform well on summative assessments including End of Key Phase Data captures and Multiplication Table Checks.

Most of all, we want children to have the skills and knowledge to be successful mathematicians both at this stage of their education and beyond.

Teaching and support staff should analyse and evaluate practice that needs to be addressed, reviewed or replaced as well as highlight concepts that have a clear impact on progress and learning.