Eccleston Primary School
Maths Policy

Whole school definition: is an essential life skill and a practical tool used to make sense of the world around us.

Maths Curriculum Progression

National Curriculum Maths - Purpose of study

Mathematics is a creative and highly inter-connected discipline that has been developed over centuries, providing the solution to some of history's most intriguing problems. It is essential to everyday life, critical to science, technology and engineering, and necessary for financial literacy and most forms of employment. A high-quality mathematics education therefore provides a foundation for understanding the world, the ability to reason mathematically, an appreciation of the beauty and power of mathematics, and a sense of enjoyment and curiosity about the subject.

Aims

The national curriculum for maths aims to ensure that all pupils:

- 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

- can 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.

EYFS – see Development Matters 2021 for detailed examples of how to support learning in EYFS

EYFS Statutory Educational Programme: Developing a strong grounding in number is essential so that all children develop the necessary building blocks to excel mathematically. Children should be able to count confidently, develop a deep understanding of the numbers to 10, the relationships between them and the patterns within those numbers.

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Maths Curriculum Statement

Whole school definition: is an essential life skill and a practical tool used to make sense of the world around us.

Intent

At Eccleston Primary School, we want all pupils to believe they are all mathematicians.

Mathematics is an interconnected subject in which pupils need to be able to move fluently between representations of mathematical ideas. The programmes of study are, by necessity, organised into apparently distinct domains, but pupils should make rich connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems. They should also apply their mathematical knowledge to science and other subjects. The expectation is that the majority of pupils will move through the programmes of study at broadly the same pace. However, decisions about when to progress should always be based on the security of pupils' understanding and their readiness to progress to the next stage. Pupils who grasp concepts rapidly should be challenged through being offered rich and sophisticated problems before any acceleration through new content. Those who are not sufficiently fluent with earlier material should consolidate their understanding, including through additional practice, before moving on.

At Eccleston Primary School, we define a mathematician as the following:

- We calculate
- We solve problems
- We look for patterns
- We make connections
- We reason and explain

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- We know number facts

This has been created into a poster which is displayed on each maths working wall.

Implementation: How is Maths taught at Eccleston Primary School?

Maths is a core subject in the National Curriculum. At Eccleston Primary School, we use the Mathematics Programme of Study: Key Stages 1 & 2; NCETM Spine Materials; Early Year Foundation Stage Statutory Framework (2021) and White Rose Maths support to create a curriculum which aims to broaden the children's mathematical understanding and aims for all pupils to believe they are mathematicians. We have a mastery approach to the teaching of mathematics, where there is a high focus on breadth and depth of subject knowledge, providing children with the confidence to express their ideas using mathematical language and vocabulary. A mathematical concept or skill has been mastered when a child can show it in multiple ways, using the mathematical language to explain their ideas, and can independently apply the concept to new problems in unfamiliar situations and this is the goal for our children.

Planning

Our maths curriculum begins in pre-school. Pre-school pupils access NCETM Number Blocks resources daily to build the foundations of their mathematical understanding. Each week there is a new focus, working systematically through the Number Blocks series. Pupils watch the focus Number Blocks video daily, followed by the NCETM supporting materials. This focus is then reflected through the learning environment, both indoors and outdoors, throughout the week. Key workers support their pupils with their learning using focus questions and supporting and extending children in provision.

The sequencing of teaching maths reflects the needs of the learners. Place value and arithmetic are given priority at the start of each academic year as these are the building blocks for mathematical learning. We follow the White Rose Maths block planning, ensuring that the small steps planning is adapted to suit the needs of the class at the time. We also use NCETM Teaching for Mastery support materials to ensure all learning is of appropriate challenge – this is beginning to be trialled in Years 3 and 4.

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In Reception, Year 1 and Year 2, classes also follow 'Mastering Number' to develop number sense. The aim over time is that children will leave KS1 with fluency in calculation and a confidence and flexibility with number.

Short term planning is carried out weekly by the class teacher supported by the use of the White Rose Maths small steps and our Calculation Policy. Daily lessons largely follow a Concrete, Pictorial, Abstract (CPA) approach and have high levels of talk (whole class, group work and partner work) to ensure mathematical vocabulary is embedded through learning.

We have planned and structured times tables to be taught in the following year groups: Year 2: 10, 5 and 2. Year 3: 4, 8 and 3. Year 4: 6, 9, 7, 11 and 12. This is embedded in Year 3 and 4. Year 2, 5 and 6 will begin this in Spring 2. Times tables are taught at 9am and 1pm. Pupils complete a 2-minute test, which is followed by a verbal marking session where pupils must hear each multiplication fact twice. This is because multiplicative facts are stored in our verbal memory; saying (and hearing) the sound pattern of the phrase (e.g. seven threes are twenty one) is important and heavily supports the learning of times table facts.

Teaching

All teachers:

- Inspire, engage and ignite a fierce thirst for knowledge
- Development through concrete, pictorial and abstract teaching
- Varied teaching styles to provide for all learners
- Question to ensure learning is deep and embedded
- Consider the needs of individuals and groups to ensure lessons/steps within lessons are specific and relevant
- Complete ongoing assessments to ensure maximum progress

(Teaching and Learning Policy 2020)

Assessment

- Summative (reported) tests are completed in EYFS, Year 2, Year 4 and Year 6.

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- Internal testing is completed in Years 1 – 6.
- Termly assessments are completed at the end of each term using White Rose Assessment. This test covers everything that pupils have been taught that term; this can be seen on the long term plan for each subject.
- Formative assessments are completed daily (see Feedback and Marking Policy).

All of the above is monitored and discussed during pupil progress meetings.

- From 2nd February 2023, staff have received training on the DfE Ready to Progress criteria. In Years 2-6, we use these to determine which pupils have not yet grasped previous learning within a topic. These pupils still access the maths lessons for their chronological age, but also access the DfE/NCETM Ready to Progress support materials alongside their normal maths lesson. This ensures previous learning is secure so that all pupils are ready to learn and can thrive in maths. All interventions are on a 2-week rolling timetable so that pupils do not miss the same lessons – this ensures they have access to a broad and balanced curriculum.
- In Year 1 and EYFS, from 2nd February 2023, intervention is selected by the teacher based on their assessments. Teachers identify any gaps in learning and address these by using the Number Blocks NCETM units of work. Pupils who are not yet ready for Year 1 curriculum or have emerging areas of need in the EYFS, use the episode as a basis, then use the NCETM supporting PowerPoints to cement pupil understanding. These resources can also be used in other year group if there is a significant distance between chronological age and maths academic ability (an EHCP would be expected in this scenario).

<u>Learning Environment</u>

Maths has a focused display that reflects what is currently being taught in maths. This should be a working wall that has specific sections to support pupil understanding. These sections are: Learning Theme, Vocabulary, What have we learnt so far? (which is then split into Concrete, Pictorial and Abstract) and Marvellous Mistakes. Teachers progressively add to 'What have we learnt so far?' so that it reflects the pupils' learning.

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Impact: How is effective is Maths at Eccleston Primary School?

At Eccleston Primary School, pupils complete termly assessments in maths. This is recorded as a score for Arithmetic and a score for Reasoning. As this is a progressive test that covers what pupils have been taught that term, we have rough expectations that expect to see a score of 70%+ as meeting the expected standard, and 90%+ for working beyond the expected standard.

Judgements are monitored by the subject lead, then reviewed in Pupil Progress meetings.

Current data for maths is as follows:

2022 data - EYFS	
Mathematics - Number	67%
Mathematics – Numerical Patterns	73%

2022 data	Expected (National in brackets)	Greater Depth
KS1	77%	10%
KS2	90% (71%)	23%

Pupils will leave us prepared for the next stage in their lives with:

- Quick recall of facts and procedures
- Fluent and competent in the fundamentals of mathematics
- The flexibility and fluidity to move between different contexts and representations of mathematics
- The ability to recognise relationships and make connections in mathematics

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- The ability to reason mathematically by following a line of enquiry, understanding relationships and generalisations, developing an argument, justification or proof using mathematical language
- The ability to apply their mathematics to problems, with increasing sophistication including breaking down problems into a series of simpler steps and persevering in seeking solutions
- Confidence and belief that they can achieve
- The knowledge that maths underpins most of our daily lives
- Skills and concepts that have been mastered
- Have a positive and inquisitive attitude to mathematics as an interesting and attractive subject in which all children gain success and pleasure.

Progression Overview

Long term plans are available within the Maths section of the website, titled 'Curriculum'.

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