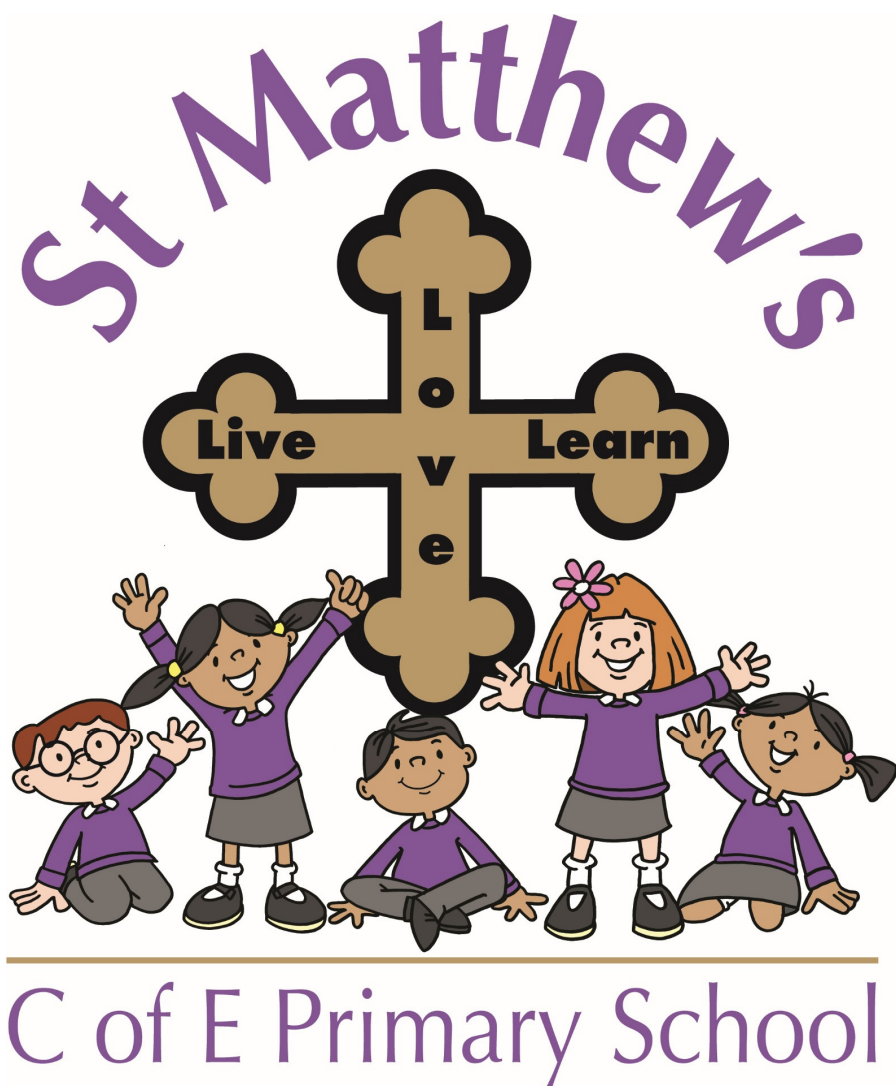


# The Intent, Implementation and Impact of our Mathematics Curriculum



# Intent

At St Matthew's, we understand that Mathematics is a journey and long-term goal, achieved through exploration, clarification, practice and application over time. At each stage of learning, pupils should be able to demonstrate a deep, conceptual understanding of the topic and be able to build on this over time.

Teachers and governors are kept regularly informed of developments in our frequently reviewed curriculum. Teachers are supported and aided in their roles ensuring confidence in the skills and facts they are required to teach. Lessons are child focused and Mathematics is kept fun and current in school. Mathematics in our school is enhanced through our TT Rockstars and Athletics competitions.

Pupils are required to explore maths in depth, using mathematical vocabulary to reason and explain their workings. A wide range of mathematical resources are used and pupils are taught to show their workings in a concrete fashion, before establishing ways of pictorially and formally representing their understanding. They are taught to explain their choice of methods and develop their mathematical reasoning skills.

Our Mathematics curriculum allows pupils to better make sense of the world around them relating the pattern between mathematics and everyday life. Our policies, resources and schemes support our vision e.g. our calculations policy, planning.

Our Mathematics curriculum has been adapted to meet the needs of pupils, especially when they arrive in Early Years, by providing as much practical opportunities as possible.

Our Mathematics curriculum has been sequenced so that pupils are continually building on previous learning and ensuring that this is linked to the National Curriculum's expectations.

We have ensured that we are meeting the needs of all pupils including those with SEND, those from disadvantaged backgrounds, able pupils and those who are at early stages of acquiring English.

We have ensured that the time allocated to Mathematics teaching is within the given guidelines and that Mathematics is not given undue amount of time at the expense of other subjects.

## **Measurable Intent: We intend on delivering a curriculum which:**

- Allows pupils to be a part of creative and engaging lessons that will give them a range of opportunities to **EXPLORE** mathematics following a mastery curriculum approach.
- Gives each child a chance to **BELIEVE** in themselves as mathematicians and develop the power of resilience and perseverance when faced with mathematical challenges.
- Recognises that mathematics underpins much of our daily lives and therefore is of paramount importance in order that pupils **ASPIRE** and become successful in the next stages of their learning.
- Engages all pupils and entitles them to the same quality of teaching and learning opportunities, striving to **ACHIEVE** their potential.
- Makes rich connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems.
- Provides equal opportunities for pupils to apply their mathematical knowledge to other subjects (cross-curricular links).
- That pupils are able to make progress in line with the expectations in the National Curriculum 2014.

# Implementation

Our mastery approach to the curriculum is designed to develop pupils' knowledge and understanding of mathematical concepts from the Early Years through to the end of Y6.

Subject expertise allows the intentions of our Mathematics curriculum to be executed successfully. We implement our approach through high quality teaching, delivering appropriately challenging work for all individuals and providing opportunities for pupils to move skills and knowledge into their long-term memory. To support us we have a range of mathematical resources in classrooms e.g. Numicon, Base10 and counters. We continuously strive to better ourselves and frequently share ideas and things that have been particularly effective. We also take part in training opportunities and SIG networking events. Through our teaching we continuously monitor pupils' progress against expected attainment for their age, making formative assessment notes where appropriate and using these to inform our discussions in termly Pupil Progress Meetings and update our summative school tracker. The main purpose of all assessment is to always ensure that we are providing excellent provision for every child.

## Concrete, pictorial, abstract – link to Mathematics Calculations Policy

Objects, pictures, words, numbers and symbols are everywhere. The mastery approach incorporates all of these to help pupils explore and demonstrate mathematical ideas, enrich their learning experience and deepen understanding. Together, these elements help cement knowledge so pupils truly understand what they've learnt.

All pupils, when introduced to a key new concept, should have the opportunity to build competency in this topic by taking this approach. Pupils are encouraged to physically represent mathematical concepts. Objects and pictures are used to demonstrate and visualise abstract ideas, alongside numbers and symbols.

**Concrete** – pupils have the opportunity to use concrete objects and manipulatives to help them understand and explain what they are doing.

**Pictorial** – pupils then build on this concrete approach by using pictorial representations, which can then be used to reason and solve problems.

**Abstract** – With the foundations firmly laid, pupils can move to an abstract approach using numbers and key concepts with confidence.

Resources and equipment are audited and up to date e.g. Rapid Recall boards. Our maths cupboard also holds many whole-school resources. Our resources allow us to better use models and images to support learning in each area. Pupils are familiar with these and able to access them independently where needed also supporting learning in different contexts. Teachers also implement the schools agreed calculations policy for progression in written and mental calculations.

Formative assessment is incredibly important at St Matthew's where we focus on challenge questions, analysis of learning, extension work, mini plenaries and discussion with peers. There is coherent progression seen in planning within each unit and activities in EYFS develop knowledge and skills of key learning Mathematical vocabulary is explicitly written within the each year group's weekly planning – this is discussed with pupils who are encouraged to use

it independently. Pupils are given opportunity to reason and solve problems regularly; learning is varied and allows for deep and secure understanding. Both greater depth and struggling learners are given small group (KUNCU), 1-2-1 and/or timetabled intervention in order to ensure every child is reaching their full mathematical potential. Our Target Tracker monitoring is reviewed termly and target pupils are selected for further support. Parents are informed of and encouraged to be involved in our school mathematics implementation through Mathletics, maths homework, TT Rockstars challenges, parent's evenings and yearly reports. Teachers are also all available for parents to speak to both before and after school.

Teachers develop fluency through practising key skills, repeating, reinforcing and revising which is all built in to formal planning across school. Pupils are given time to practise and perfect their calculation strategies including giving pupils opportunity to make appropriate decisions when estimating, calculating and evaluating the effectiveness of their chosen methods. Feedback including our whole school 'next steps' system is designed to ensure pupils are well informed and making visible progress.

Discussion is essential to our learning and time is planned into lessons for this, task types are varied to suit different pupils and their learning preferences whilst reasoning in writing remains one of our key focuses. Investigative tasks are designed to allow pupils to follow lines of enquiry and develop their own ideas, justifying and proving their answers. Pupils work both collaboratively (in KAGAN groups/partners) and independently solving problems, which require them to persevere and develop resilience.

### **Measurable Implementation: Teaching and Learning, Content and Sequence**

- We follow the national curriculum and use the Lancashire Schemes of Work as a guide to support teachers with their planning and assessment.
- Our Calculations Policy is used within school to ensure a consistent approach to teaching the four operations over time.
- Key vocabulary is introduced and revisited regularly to develop language acquisition, embedding as the topic progresses.
- Lessons begin with a short assessment to support retrieval practice and develop long-term memory.
- Pupils are taught through clear modelling and have the opportunity to develop their knowledge and understanding of mathematical concepts. The mastery approach incorporates using objects, pictures, words and numbers to help pupils explore and demonstrate mathematical ideas, enrich their learning experience and deepen understanding at all levels.
- Pupils work on the objective at whatever entrance stage they are assessed as being at. Pupils can ACQUIRE the skill, APPLY the skill or DEEPEN the skill within the lesson.
- Pupils who have shown their understanding at a deep level within the unit, will have opportunities to apply these skills in a GREATER DEPTH activity. This should be challenging and ensure that pupils are using more than just one skill to be able to answer the mathematical problems.
- Reasoning and problem solving are integral to the activities pupils are given to develop their mathematical thinking.

- Pupils are encouraged to explore, apply and evaluate their mathematical approach during investigations to develop a deeper understanding when solving different problems / puzzles.
- A love of maths is encouraged throughout school via links with others subjects, applying an ever-growing range of skills with growing independence.
- Pupils with additional needs are included in whole class lessons and teachers provide scaffolding and relevant support as necessary. For those pupils who are working outside of the year group curriculum, individual learning activities are provided to ensure their progress.

### **Measurable Implementation: Leadership, Assessment and Feedback**

- Assessment informs the teaching and learning sequence, and pupils work on the objectives they are assessed as being at, with fluid boosting available within a 'keep up not catch up' culture.
- Feedback is given on pupils' learning in line with our feedback policy. Formative assessment within every lesson helps teachers to identify the pupils who need more support to achieve the intended outcome and who are ready for greater stretch and challenge through planned questioning or additional activities.
- In order to support teacher judgements, pupils may be assessed using current and reliable tests in line with the national curriculum for maths. Gap analysis of any tests that the pupils complete is undertaken and fed into future planning.
- Summative assessments are completed at the end of the academic year and reported to parents in the end of year report.
- The maths leader has a clear role and overall responsibility for the progress of all pupils in maths throughout school. Working with SLT, key data is analysed and regular feedback is provided, to inform on progress and future actions.
- Pupils remember key information for the long term and their long-term retention is very effective.

# Impact

The impact of our mathematics curriculum is that pupils understand the relevance of what they are learning in relation to real world concepts. We have fostered an environment where Maths is fun and it is OK to be 'wrong' because the journey to finding an answer is most important.

## Measurable impact:

- **All** pupils achieve to the best of their abilities and outcomes from measurable tests show that they attain at the levels expected for their age or above.
- Our Maths books are packed with a range of activities showing evidence of fluency, reasoning and problem solving.
- Our well planned sequences of learning are supporting pupils to develop and refine their mathematics skills.
- Our feedback and interventions (KUNCU or 1-2-1) are supporting pupils to strive to be the best mathematicians they can be ensuring a greater proportion of pupils are on track.
- Our school standards are high – pupils are achieving well.
- Our pupils have a growth mindset and they make measurable progress against their own targets.
- Our pupils demonstrate a quick recall of facts and procedures. This includes the recollection of the times table.
- Our pupils show confidence in **BELIEVING** that they will **ACHIEVE**.
- Our pupils are articulate and are able to reason verbally, pictorially and in written form. They can reason with increased confidence and accuracy.
- Our pupils are able to independently apply their knowledge to a range of increasingly complex problems.
- Our pupils 'have a go' and choose the equipment they need to help them to learn along with the strategies they think are best suited to each problem.
- Each child achieves objectives (expected standard) for year group.
- Our pupils demonstrate that they have mastered Mathematical concepts or skills by showing them in multiple ways, using the mathematical language to explain their ideas, and they can independently apply the concept to new problems in unfamiliar situations.
- Our pupils show a high level of pride in the presentation and understanding of the work.
- Our Y6 pupils leave at the end of Key Stage 2, well-prepared to access the next stage in their education in Key Stage 3.