



The intent, implementation and impact statement for the delivery of the Mathematics curriculum

Our Vision for Emmanuel



To create a welcoming Christian community where every child is viewed as a special person created and loved by God. Every member of our school community is valued for who they are and empowered to be the best they can be. We support every child to develop into lifelong learners who are resilient, socially skilled, and successful in all aspects of their lives.

'Start children off on the way they should go, and even when they are old they will not turn from it.' (Proverbs 22:6)

At Emmanuel, we provide an ambitious curriculum, challenging all children to aspire to be the 'best they can be'. All children learn in a highly inclusive environment which engages them to achieve great outcomes and reach their potential. We provide the children with a broad and balanced curriculum where the substantive and disciplinary knowledge the children need to acquire is coherently planned and sequenced allowing knowledge to be built on and embedded. Due to the careful sequencing of the curriculum, the children use their prior knowledge to allow them to learn new concepts. This curriculum design, supports all children to be courageous when faced with new challenges.

As Paul said in his letter to the Philippians 'I can do all things through him who strengthens me.' (Philippians 4:13 ESV)

Emmanuel's curriculum intent for Mathematics

Our mathematical intent is 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. can solve problems by applying their mathematics to a variety of routine and nonroutine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.

This reflects the disciplinary knowledge set out in the national curriculum (2013) for mathematics.

Our intent is to ensure that all pupils gain success against the composites (end points/final outcomes) set out in the national curriculum to enable them to be secondary ready and flourish in their next step of their maths education.

The implementation of our Maths Curriculum

Our Curriculum

Our curriculum has been designed to ensure that all pupils make progress towards achieving the desired end points set out in the national curriculum by the end of key stage 2. They will do this through acquiring the substantive and disciplinary knowledge which has been broken down into coherently sequenced component parts. When the pupils acquire the knowledge required to be successful against each component, this learning will then be built on sequentially to ensure that each small step leads to all pupils attaining the desired end point (composite). Our maths progression documents set out the sequence of learning.

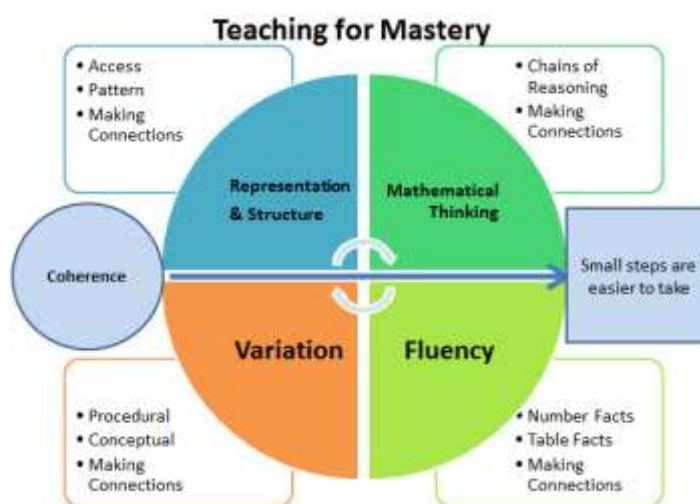
The curriculum has been designed with the concept of memory in mind. Our curriculum is designed to ensure the children know and remember more by incorporating a 'spiralised' curriculum where concepts are revisited to facilitate learning being transferred into the long-term memory. Concepts are consistently revisited and regularly reviewed with retrieval practice (both daily and spaced) being central to our curriculum. Content and concepts are revisited and built upon throughout academic years and year groups. The curriculum has been planned coherently to enable children to become experts in mathematics.

Our maths curriculum has been sequenced and developed using the 'NCETM', 'Ready to Progress' and 'White Rose' materials. The curriculum has been designed to ensure that concepts are taught in depth to allow all children to secure a deep procedural and conceptual understanding. We ensure that lessons are delivered in a coherent manner so learning is built on progressively through each maths unit taught. We then look to apply our maths learning through different areas of the curriculum so children know how and why maths is used in the outside world and in the workplace.

Teaching

Our teachers focus on teaching simply, practicing thoroughly, feeding back constructively and embodying excellence. The teaching strategies employed across school are used to facilitate the pupils to know and remember more.

The delivery of our curriculum is built around the 5 elements of teaching for mastery:



To support our children to develop a deep understanding, we believe that unlocking mathematical fluency is an essential life skill and is a pre-requisite to being able to reason and solve problems mathematically. As a school, we recognise that the key to unlocking the potential in our children is through the development and embedding of key skills.

Maths Provision	
<u>Individual lessons</u>	<p>Our maths lessons follow a structure of retrieval and review of prior knowledge leading to the teaching of new content through carefully sequenced precise small steps. Children are provided with the opportunity to practice what they have learnt and apply their knowledge to a different context.</p> <p>Within each lesson, children will revisit the prior learning that will have the biggest impact on creating links and gaining success against the current learning objective. Following the review section, new learning is delivered in small steps which are planned progressively throughout the lesson. Within this part of the lesson, concepts are modelled using a variety of representations to support the children in their mathematical thinking. To support this process, a clear sequence of concrete, pictorial and abstract resources are used to support the children to visualise concepts, reason, make connections and problem solve. Within this part of the lesson, we carry out the process of 'I do, we do' to allow concepts to be modelled carefully before the children carry out guided practice. Following this, it is the 'you do' part of the lesson where children practice independently to enable them to solve maths problems fluently. During this part of the lesson, children will have access to the resources used in the teaching section to support them to gain mastery over a concept. Finally, the children will then apply their independent practice to a different context. This will be done through using variation of questioning, enabling children to reason mathematically and problem solve.</p>

	A key component of each part of every lesson is the teaching of accurate mathematical vocabulary to support the children to reason and justify their findings.
<u>Retrieval practice</u>	To support this process, we incorporate the 'teach simply model' to sequence each individual lesson. In addition to the daily maths lessons children will carry out 10 minutes fluency practice. The aim of this session is to revisit/review prior learning and carry out spaced retrieval to embed prior learning into the long-term memory. The objectives for the spaced practice target building number knowledge, developing fluency in computational skills and deepening understanding of fractions. One objective is covered each week to enable variation in representation and question to be used. The objectives at the start of the academic year focus on revisiting the learning identified in the 'Ready to progress' document from the previous year group program of study and then they progress to revisit the learning objectives taught in the previous half term.
<u>Inclusive maths provision</u>	We have an ambitious maths curriculum which is highly inclusive and supports all children to gain success and reach their potential. All new learning is based on the current year groups programme of study and support is provided to all the children to gain mastery over new concepts through the accurate, intentional deployment of resources (CPA, adults resource, learning environment). Where a child is unable to access the current years' programme of study, learning will be differentiated through revisiting prior years groups objectives which link explicitly to the overall lesson objective for the current year group. Our coherently planned curriculum will be used to ensure the learning is pitched accurately for all children but also allows all children to be included in lessons to access new learning.

Assessment

The accurate assessment of children's mathematical knowledge is critical to ensure all children have the required factual background knowledge needed to access the next component identified in our progression documentation. We use assessment tools to accurately identify gaps in pupil knowledge to ensure that precise support is provided to enable all children to gain mastery over each mathematical concept.

Assessment for learning: assessing as we teach by observing and questioning to inform next steps needed for each pupil to make progress against the learning objective.

Assessment as learning: we use ongoing assessment strategies such as retrieval practice and generative learning activities to consolidate learning and help children deepen knowledge in the long term memory.

Assessment of learning: we carry out a pre-assessment of children's background knowledge to accurately plan a series of lessons taking into account the children's starting points. Teachers also carry out end of unit assessments to identify any gaps in the children's understanding. Finally, teachers' carry out summative assessments at the end of each term to identify any gaps in the children's long-term memory. These assessments provide support in the precise identification of gaps in learning for which additional support is provided.

Desired Impact of our Maths curriculum

By the end of Year 6, transitioning to secondary school, we aspire that an Emmanuel mathematician will have developed a bank of efficient and accurate skills that will enable them to be confident mathematicians who are fluent in the fundamentals of maths, reason mathematically and solve problems.

Pupil voice

Through discussion and feedback, children talk enthusiastically about their maths lessons and speak about how they love learning about maths. They can articulate the context in which maths is being taught and relate this to real life purposes. Children show confidence and believe they can learn about a new maths area and apply the knowledge and skills they already have.

Evidence in substantive knowledge

Mathematical knowledge is 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. Children demonstrate a quick recall of facts and procedures. This includes the recollection of the times tables.

Evidence in disciplinary knowledge

Pupils use acquired vocabulary in maths lessons. They have the knowledge to use methods independently and show resilience when tackling problems. They flexibility and fluidity to move between different contexts and representations of maths. The children develop the ability to recognise relationships and make connections in maths lessons.

Outcomes

At the end of each year we expect the children to have achieved Age Related Expectations (ARE) for their year group. Some children will have progressed further and achieved greater depth (GD).

Mastery

All children secure long-term, deep and adaptable understanding of maths which they can apply in different contexts.