Curriculum Intent

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. Crucially, a sound knowledge of mathematics is **vital** for young people seeking employment, and securing a qualification in mathematics is a fundamental requirement for the majority of employers.
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.

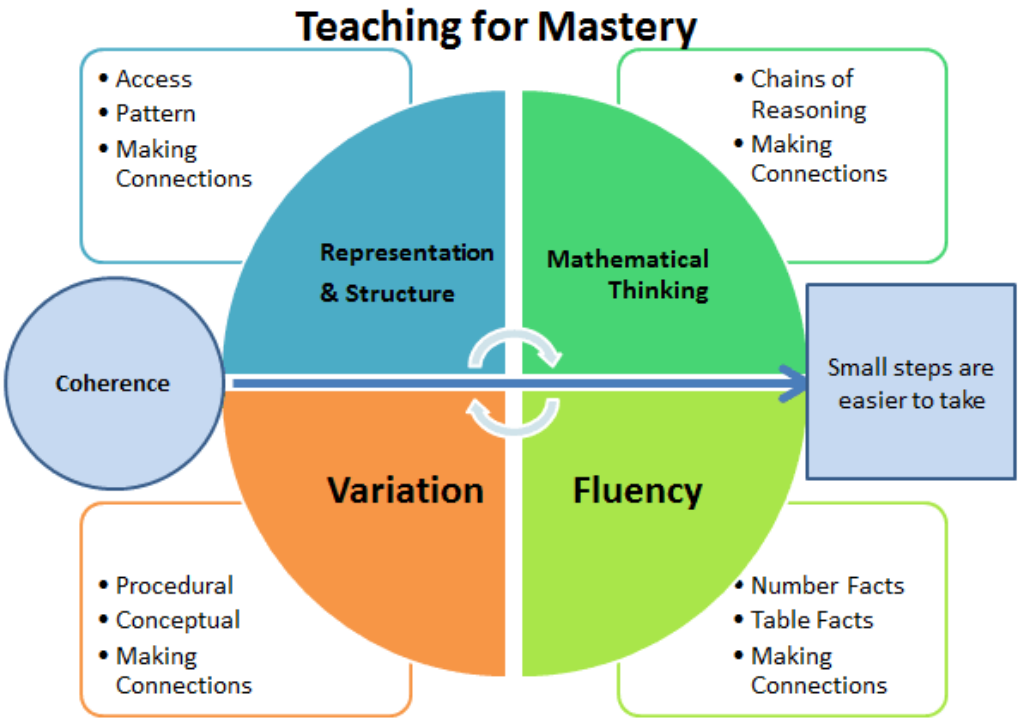
In line with the National Curriculum Objectives for Mathematics, our intent is that all pupils:

- 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

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.
Central to our approach are the **5 Big Ideas** which underpin mastery in mathematics.

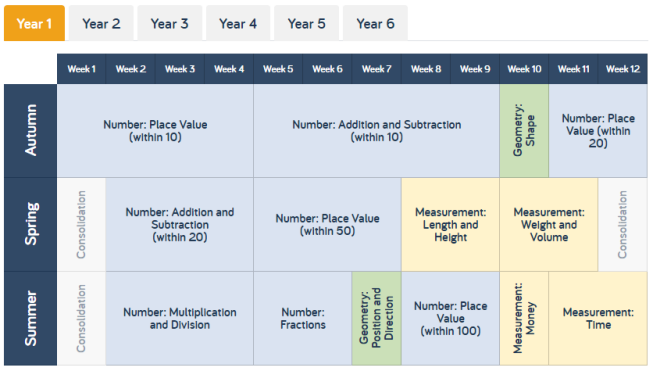


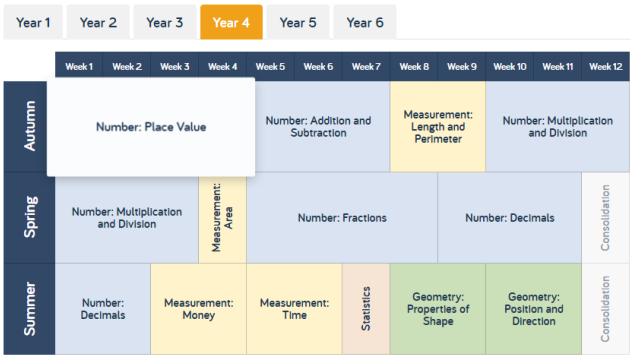
In line with our School-wide focus of Oracy, we also expect and encourage children to use **mathematical language** to **describe, discuss, examine, explain, justify and synthesize**.

Through our co-operative learning strategies including **Think, Pair, Share, Tell Your Partner and Random Reporter,** we allow all children to discuss mathematical concepts and approaches and to share their ideas and approaches while using the correct terminology.

Curriculum Implementation

At Westfield, children study mathematics daily following the **White Rose Maths** Scheme of Learning. WRM is a blocked scheme, which allows for depth and breadth of learning within each strand of mathematics.





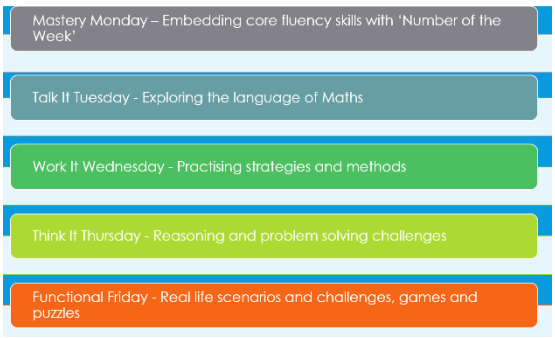
Hallmarks of our Mastery Approach

- **Concrete, Pictorial and Abstract Learning:** Children engage with a wide and varied range of concrete manipulatives, pictorial representations and abstract methodologies within each session. **Cohesive** use of CPA is a fundamental part of mastery in mathematics for all learners, not just those pupils with SEND. Concrete and pictorial references scaffold and strengthen understanding and are widely used as a teaching and learning tool from Foundation Stage to Year 6.

- **Fluency, Reasoning and Problem Solving:** Every learning session includes the opportunity to develop fluency skills, construct chains of reasoning using relevant knowledge alongside relevant terminology and solve increasingly complex problems in a systematic and coherent way.

- **Mathematical Vocabulary:** Sessions include explicit reference to vital **mathematical vocabulary** and the use of **stem sentences** to support and encourage all children to communicate their ideas with mathematical precision and clarity. These sentence structures often express key conceptual ideas or generalities and provide a framework to embed conceptual knowledge and build understanding.

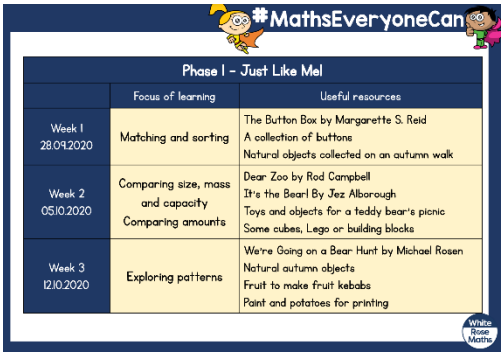
- **Interleaved Learning:** WRM is a blocked learning scheme and as a consequence certain strands of maths are not covered until later in the term. To ensure frequent timely introduction and revisiting of concepts, we plan and deliver interleaved learning sessions as part of our Daily Maths Meetings. Our maths meetings follow a consistent structure in EYFS and KS1 with a focus on fluent skills, and in KS2, with a themed approach to each session.



- **Fluent Recall:** We are committed to ensuring that pupils secure their knowledge of Times Tables and Related Divisional Facts by the end of Year 4. Our pupils engage in regular low stakes testing through Times Tables Rock Stars to practice fluent recall.

EYFS

At Westfield we understand the importance of early experiences of maths, and have committed to the Early Adopter Framework within our Early Years setting. This approach places a significant emphasis on developing a strong grounding in number – understanding that this is a necessary building block for children to excel in the subject.



The two key ELG's for mathematics are:

1. Number: Number composition, subitising, recall of bonds to 5 and 10 and doubling

2. Numerical Pattern: Verbally count beyond 20, Compare quantities, explore and represent patterns

Practitioners provide **creative** and **engaging** opportunities for children to **ignite their curiosity** and enthusiasm for the subject, while focusing on the three prime areas of: Communication and Language, Physical Development and PSED.

Activities and experiences are frequent and varied, and allow children to build on and apply understanding of **Numbers to 10**. Concrete manipulatives are a key focus within sessions, as is the use of pictorial representations including Tens Frames and Part/Whole Models.

Children are actively encouraged to use mathematical terminology within their understanding, with a focus on developing positive attitudes and interest in the subject.

Curriculum Impact

At Westfield, the expectation is that the majority of pupils will move through the programmes of study at broadly the same pace. We aim for each child to be confident in each yearly objective and develop their ability to use this knowledge to develop a greater depth understanding to solve varied fluency problems as well as problem solving and reasoning questions.

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 are challenged through rich and sophisticated problems before any acceleration through new content. Those who are not sufficiently fluent with earlier material consolidate their understanding, including through additional practice, before moving on. Where necessary, earlier material should consolidate their understanding, including through additional practice, before moving on.

Formative Assessment: Teachers carry out formative assessment through AfL in each session and feedback is given to children verbally, through self/peer assessment and through marking. Teachers then use this assessment to influence their planning. Children are rapidly identified as needing further challenge or additional support, and we ensure that this is provided in a timely manner.

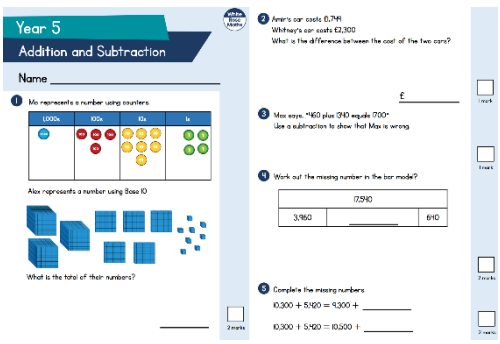
- **Timely Interventions:** Teachers believe that all children can achieve in maths, and focus on whole class teaching. Where **prerequisites** are not secure, timely interventions will be carried out. We understand that catch-up does not work, and as a consequence our interventions are focused on **Pre-Teaching** and **Same Day Interventions**. As a school, we invest in targeted therapies and interventions to secure and develop knowledge and teach gaps using PiXL. Following forensic diagnostics, teachers and Learning Support Assistants access suitable therapies for whole class and small group teaching to ensure that all children reach their full potential.

- **Low Stakes Quizzing and Fluent Recall:** We use a range of low stakes testing throughout the teaching cycle to assess attainment and progress. From Year 2 to Year 6, children complete regular tests in Arithmetic and Times Tables.

Year Group	MTC	Start Date	Arithmetic Test	Start Date
Year 2	Monthly	January 2021		
Year 3	Monthly	September 2020		
Year 4	Weekly	WC14.09.20	Fortnightly	WC 07.09.20
Year 5			Weekly	WC 07.09.20
Year 6			Weekly	WC 07.09.20

- **Summative Assessments:** Children complete **End of Block** assessments for each phase of learning. Results are used to further inform planning and allow for tailored interventions groups to take place to ensure the objectives are secured.

  Our Assessment Calendar also includes **3 key dates** for capturing progress and attainment against National Curriculum Objectives. Assessments are carried out in Autumn, Spring and Summer terms.



- **Subject Monitoring:** We regularly monitor the quality and impact of our mathematics curriculum through targeted learning walks, book scrutiny and pupil interviews. In addition to this, we survey our staff and pupils to identify their perception of mathematics and identify CPD needs.