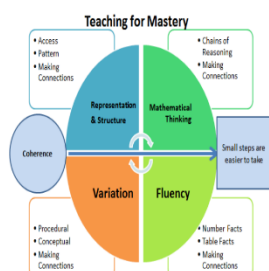


The Maths Curriculum at West Jesmond

Curiosity, Confidence, Creativity and Community



Maths is a beautiful and awe-inspiring subject which has the ability to excite, empower and amaze.

Intent : We want all children to think deeply about Maths, develop conceptual understanding and communicate their ideas confidently.

The intent of our Maths Curriculum is to cultivate a robust foundation in mathematical education for all pupils. We aim for our pupils to become fluent in the fundamentals of mathematics, achieved through varied and frequent practice with increasingly complex problems over time. This approach is designed to ensure that pupils not only develop a deep conceptual understanding but also possess the ability to recall and apply knowledge rapidly and accurately.

Additionally, we strive for our pupils to utilise spoken and written language with confidence and clarity when explaining and justifying their mathematical reasoning. The ability to articulate thoughts clearly is essential, not only for individual understanding but also for collaborative problem-solving within a classroom environment.

Moreover, we aim for our pupils to foster a deep conceptual understanding of mathematical concepts. This understanding will empower them to become flexible and resourceful problem solvers, equipped to approach challenges with creativity and persistence. Ultimately, our curriculum is tailored to nurture a positive attitude towards mathematics, enabling pupils to perceive it as a vital and engaging discipline that extends beyond the classroom into everyday life.

Implementation.

The implementation of the Maths Curriculum in England prioritises the integration of fluency, reasoning, and problem-solving elements within every lesson. We aim to provide children with access to high-quality, engaging mathematics instruction, ensuring that whole-class teaching includes all learners most of the time. Topics are covered in detail over an extended period, adopting a 'step-by-step' approach that allows for deeper exploration and application of concepts.

To facilitate a robust understanding, we employ the Concrete, Pictorial, Abstract (CPA) approach across all year groups. The "Mastering Number" programme is implemented in Reception, Year 1, and Year 2, incorporating the use of Rekenrek resources. Furthermore, in Years 4 and 5, the programme emphasizes the mastery of times tables. Teachers utilise strategic questioning to probe student understanding, effectively addressing misconceptions to enhance comprehension of key concepts.

Emphasising precise mathematical language, we incorporate 'stem sentences' to assist pupils in articulating their reasoning. Teachers guide students in making, refining, and exploring conjectures based on evidence, employing various reasoning and proof techniques. Lessons are adapted to focus on deepening pupil knowledge and understanding, enabling the reinforcement of key number facts until automaticity is achieved, thus preventing cognitive overload in working memory.

The consistent utilisation of hashtags such as #ExplainIt, #ProveIt, #StoryIt, and #DrawIt fosters an environment where pupils actively engage as learners who reason and seek connections. Ultimately, this curriculum implementation nurtures resilience and a 'can do' attitude among students, laying the foundation for ongoing mathematical success.

Lesson design.

In the design of Maths lessons, it is imperative that pupils are afforded sufficient time and opportunities to engage deeply with mathematical concepts. The true challenge lies in investigating these ideas through diverse and intricate lenses, rather than hastily progressing through new topics. Utilising the White Rose Maths Schemes of Learning as a foundation, educators can create a coherent and sequential conceptual pathway that allows the entire class to advance collectively. Collaborative planning among year group colleagues is highly encouraged to foster consistency in approach. The lesson's trajectory is effectively documented within Smart Notebooks or designated tasks, eliminating the need for separate planning formats.

A judicious selection of examples, representations, and models is crucial, as they serve to elucidate the structure of mathematical concepts and highlight interconnections. This approach enables pupils to cultivate a profound understanding of mathematics, as procedural fluency and conceptual comprehension develop in tandem. The Mastering Number programme is implemented across Reception, Year 1, and Year 2.

To enrich lesson delivery, a range of high-quality materials may be incorporated, including resources from NCETM Teaching for Mastery, progression maps for KS1 and KS2, and platforms such as NRICH, among others.

A commitment to ensuring success for all pupils in mathematics is foundational; each child can thrive given the right learning opportunities. Furthermore, cultivating a growth mindset fosters resilience and self-confidence, essential traits for success in the subject.

What you will see in a West Jesmond Maths Lesson.

In Maths lessons, a comprehensive approach is adopted that prioritises fluency, reasoning, and problem-solving skills. This is achieved by creating an environment where all pupils have access to high-quality, engaging mathematics. Instruction typically occurs through whole-class teaching, allowing for a unified learning experience. Topics are explored in detail over time, following a step-by-step approach that allows students to spend sufficient time on individual ideas, enabling thorough experience and application.

A Flashback 4 is used at the start of lessons in order for pupils to commit their understanding of key concepts to their longer term memory. The Concrete, Pictorial, Abstract (CPA) approach is employed across all year groups in order to promote deep understanding. Early years and Key Stage 1 benefit from the "Mastering Number" programme, specifically utilising the Rekenrek. Y4 and 5 pupils consolidate their understanding of times tables through "Mastering Number @ KS2." Teachers employ probing questions to assess understanding, using misconceptions as a springboard to further explore key concepts.

The use of precise mathematical language is essential; thus, 'stem sentences' help pupils articulate their reasoning effectively. Adaptation and scaffolding within lessons is key. Number facts are learnt to automaticity, thereby reducing cognitive overload and allowing students to focus on new learning. Hashtags such as #Explain it, #Prove it, #Story it, and #Draw it are consistently employed to allow pupils to reflect upon their thinking. Mixed attainment groupings and the regular rotation of 'talk partners' foster collaboration and resilience among pupils, supporting the development of a 'can do' attitude. This holistic mathematical framework reflects the principles outlined in the Five Big Ideas by the NCETM (2017), underpinned by robust evidence and successful classroom practice.

Lesson Structure.

Our Maths lessons employ a Concrete, Pictorial, Abstract approach, enabling students to grasp mathematical concepts and procedures through the use of physical objects, pictorial

representations, and abstract equations. This method not only fosters understanding but also encourages the development of critical thinking and reasoning skills.

We strongly advocate for a discursive teaching style, emphasising the importance of children articulating their thoughts and observations. Problem-solving and reasoning activities are integral components of each lesson, supported by a diverse array of resources to enhance learning.

In line with our intervention strategy, “Keep up, not catch up,” we aim to implement pre-teach sessions that focus on vocabulary and mathematical structures. Additionally, post-teach interventions are delivered on the same day, facilitated through flexible pupil groupings in our “Maths Masterclasses.” To further support vocabulary acquisition, we offer the “Talk 4 Number” programme for Year 3 and Year 4 students requiring additional assistance, particularly those in the later stages of learning English as an Additional Language.

Mental and Written Calculation.

Effective and efficient mental calculation strategies are essential for pupils to develop true fluency in mathematics. It is the expectation that by the end of Year 4, all pupils will be able to rapidly recall multiplication facts up to 12×12 . In addition to mental calculation, the West Jesmond Calculation Policy guides written calculation methods across year groups, utilising examples from both the NCETM Calculation Guidance and the White Rose scheme of learning. For further details, please refer to the separate guidance document. It is imperative that these frameworks support a consistent and rigorous approach to mathematics education.

Feedback.

Marking strategies should be efficient, so that time is not lost that would be better spent on lesson design and preparation. Neither should marking result in excessive workload for teachers (NCETM). Immediate, feedforward, and summary feedback is essential, as outlined in our separate policy. Teachers utilise green and pink pens for marking, with pink highlighting misconceptions or incorrect answers. Verbal feedback, alongside assessment for learning (AFL), assists in identifying pre- and same-day intervention groupings. Additionally, pupil self-marking using purple pens at KS2 marking further enhances the feedback process.

Impact.

The impact of our mathematics curriculum is assessed through a comprehensive array of summative and formative measures. Summative assessments include end-of-block evaluations aligned with the White Rose scheme throughout the academic year. Additionally, termly assessments are conducted in the Autumn, Spring, and Summer terms, encompassing both arithmetic and reasoning components of the White Rose programme.

We also utilise the NCETM “Teaching for Mastery” resources, which offer questions, tasks, and activities designed to enhance assessment processes. Year group data meetings are convened to analyse performance metrics critically. Statutory assessments at the end of Key Stage 2 provide a mandatory benchmark for evaluating student progress. Furthermore, Maths Year Group Milestones, grounded in NCETM Curriculum prioritisation materials, inform our assessment strategy. They are recorded on our SONAR assessment system.

Formative assessments, equally vital, are conducted through classroom monitoring, where evidence is systematically assessed. Additionally, end-of-block mini assessments from the White Rose programme are employed to identify and support individual learning needs effectively. Collectively, these practices enable us to monitor and enhance student outcomes in mathematics.

Wider Curriculum Links.

Key mathematical concepts are taught and developed through a range of theme-based cross-curricular links, fostering connections between various areas of mathematics and real-life applications. Notable projects include Enterprise and careers workshops, alongside an annual STEM week, emphasising the significance of mathematics in diverse career paths.