Maths at West Jesmond

The aims of our curriculum: Success for all Every child can enjoy and succeed in mathematics as long as they are given the appropriate learning opportunities.

Fluency	Reasoning	Problem Solving
We aim for our pupils to: 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.	**We aim for our pupils to: Use spoken and written language with confidence and clarity to explain and justify mathematical reasoning.**	**We aim for our pupils to: Have a deep conceptual understanding of mathematical concepts and be flexible and resourceful problem solvers.**

Our Intent

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

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

Developing disciplinary knowledge.

Pupils need to develop their disciplinary knowledge (how to work things about, reason and problem solve) in maths lessons. They will be taught to make links across different mathematical components to build this knowledge in their long term memory

Curriculum Design and implementation.

Within West Jesmond we prioritise the integration of fluency, reasoning, and problem-solving within every lesson. Our objective is to ensure children receive high-quality, engaging mathematics instruction, wherein whole-class teaching includes all learners. Topics are covered following a 'step-by-step' approach that promotes deeper exploration of concepts.

Utilising the Concrete, Pictorial, Abstract (CPA) methodology across all year groups facilitates a robust understanding of mathematical principles. The "Mastering Number" programme is introduced in Reception through Year 2, employing Rekenrek resources to ensure that foundational number sense is deeply embedded. Strategic questioning supports teachers in identifying and addressing misconceptions, thereby enhancing comprehension.

To assist pupils in articulating their reasoning, we incorporate precise mathematical vocabulary and 'stem sentences'. Our curriculum ultimately fosters resilience and a 'can do' attitude, equipping students for future mathematical success.

How we ensure every child achieves in Maths (First 20%)

Intervention – 'Keep up not catch up.'

- Maths pre teach sessions are delivered by teachers with a focus on vocabulary and mathematical structures.
- Post teach same day interventions undertaken when needed with flexible groups of pupils. – 'Maths Masterclasses.'
- 'Talk 4 Number' to enhance pupil vocabulary acquisition -for pupils in Y3 and Y4 who need support and encouragement.

Lesson Design - What we would expect to see in a lesson.

All lessons should incorporate elements of fluency, reasoning and problem solving.

Children will have access to high quality, engaging mathematics.

- Whole class - teaching all children in class, together, most of the time.
- Flashback4 Retrieval questions / 'low stake' quizzes / 'True or False?'
- Covering topics in detail over time – 'step by step approach'
- Spending longer on one idea – space and time to experience and apply.
- CPA approach in **all** year groups - (concrete, pictorial, abstract.)
- "Mastering Number" programme in R, Y1, Y2 – utilising Rekenrek. "Mastering Number" programme within Y4/5 – focus on times tables.
- Questions to probe understanding and deep learning.
- Task adaptation and scaffolding for pupils. There should be flexibility within lessons and access to diving deeper questions.
- Use of misconceptions to further understanding of key concepts.
- Precise mathematical language – use of 'stem sentences' to help pupils to communicate their reasoning and thinking effectively.
- Teachers help students make, refine, and explore conjectures on the basis of evidence and use a variety of reasoning and proof techniques to confirm or disprove those conjectures.

Useful Links & Resources

Additional high quality materials that enhance the delivery of lessons may include:

- NCETM Teaching for Mastery resources
- NCETM Progression maps KS1 & KS2
- NRICH for rich and sophisticated problems.
- Gareth Metcalfe "I See Reasoning," "I See Problem solving."
- Craig Barton "Diagnostic questions"
- Transum.org, Jo Boaler youcubed.org
- "Maths No Problem" Teacher textbooks.
- Online – Mathletics, Time Tables Rockstars.
- Numberblocks / Maths Story books.

Classroom Display / What we would expect to see

Working Walls -Regularly updated for each unit of work with :
Key vocabulary
Stem sentences
Models & images
Written methods
Multiplication Tables
Maths resources freely available.

Feedback

"Marking and evidence-recording strategies should be efficient, so that they do not steal time that would be better spent on lesson design and preparation. Neither should they result in excessive workload for teachers." NCETM

Immediate/Feedforward/Summary – *see separate policy.* Teachers mark with green and pink pens – pink highlighting misconceptions or incorrect answers *:* Verbal feedback, AFL to identify pre and post teach groups, Pupil self-marking in purple pen.

Assessment

- **Summative:**
- End of block White Rose assessments throughout the year.
- Termly: Autumn / Spring / Summer White Rose Arithmetic and reasoning assessments.
- Year group data meetings
- Statutory assessments at the end of Key stage 2.
- Maths Year Group Milestones updated on Sonar based on NCETM Curriculum prioritisation materials.

Formative:

- On-going teacher assessment, mini quizzes, work in books allow us to adapt our planning and tackle misconceptions as they arise.
- White Rose end of block mini assessments / Quizzes.

Mental calculation.

Effective and efficient mental strategies are taught in order for pupils to develop 'true' fluency. The expectation is that pupils will be able to rapidly recall times tables facts up to 12 x 12 by the end of Y4. *Whole school Times tables overview document in place.*

Written calculation methods. The West Jesmond Calculation policy that each year group follows incorporates examples both from the NCETM calculation guidance and the White Rose scheme of learning. *-see separate guidance.*

Wider Curriculum Links and Opportunities

Key mathematical concepts are taught and developed further through a range of theme based cross curricular links. Connections will be made between the different areas of maths and real life. Projects include Enterprise and careers workshops. An annual "STEM" week takes place with the aim of highlighting the importance of the subject for a wide range of careers.