

<p>West Jesmond Primary</p> <p>Maths is a beautiful and awe-inspiring subject which has the ability to excite, empower and amaze.</p>		
<p><u>Mastery in Mathematics Vision Statement.</u></p>		
<p style="text-align: center;">The three aims of the National Curriculum:</p> <p style="text-align: center;">Fluency</p> <p>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.</p>	<p style="text-align: center;">Reasoning</p> <p>We aim for our pupils to: Use spoken and written language with confidence and clarity to explain and justify mathematical reasoning.</p>	<p style="text-align: center;">Problem Solving</p> <p>We aim for our pupils to: Have a deep conceptual understanding of mathematical concepts and be flexible and resourceful problem solvers.</p>
<p style="text-align: center;"><u>Lesson Design.</u></p> <p>Deeper understanding Pupils must be given time and opportunities to fully explore mathematical concepts. The challenge comes from investigating ideas in new and complex ways – rather than accelerating through new topics.</p> <p>White Rose Maths Schemes of Learning are used as a starting point in order to develop a coherent and comprehensive conceptual pathway through the mathematics. The focus is the whole class progressing together. Collaborative planning with year group colleagues is encouraged to ensure consistency. No separate planning format is required as the journey of the lesson will be evident within the Smart Notebook or designated tasks.</p> <p>At the planning stage, teachers consider what scaffolding may be required for children who may struggle to understand certain concepts in the lesson and suitable ‘rich tasks’ for those who may grasp the concepts more rapidly.</p> <p>Additional high quality materials that enhance the delivery of lessons may include:</p> <ul style="list-style-type: none"> ❖ NCETM spine Teaching materials ❖ 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” 	<p style="text-align: center;"><u>What Maths looks like.</u></p> <p>All lessons should incorporate elements of fluency, reasoning and problem solving.</p> <p>Children will have access to high quality, engaging mathematics.</p> <ul style="list-style-type: none"> • Whole class - teaching all children in class, together, most of the time. • Covering topics in detail over time – ‘step by step approach’ • Spending longer on one idea – space and time to experience and apply. • CPA approach all year groups - (concrete, pictorial, abstract.) • Questions to probe understanding. • Use of misconceptions to further understanding of key concepts. • Precise mathematical vocabulary – use of ‘stem sentences’ to help pupils to verbalise and embed mathematical ideas. • 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. • Challenge and differentiation through DEPTH. • Consistent use of hashtags #Explain it #Prove it #Story it #Draw it. • Development of pupil resilience and ‘can do’ attitude. 	<p style="text-align: center;"><u>Lesson Structure.</u></p> <p>Maths lessons apply a Concrete, Pictorial, Abstract methodology in which Mathematical concepts and procedures are taught through the use of physical objects and pictorial representations, alongside abstract equations.</p> <p>To develop our children’s thinking and reasoning skills, a discursive approach is strongly encouraged with the emphasis placed on the importance of children explaining their ideas and observations.</p> <p>Problem solving and reasoning activities are a key part of every lesson and children are always supported by a wide range of resources.</p> <p style="text-align: center;"><u>Intervention – ‘Keep up not catch up.’</u></p> <ul style="list-style-type: none"> ❖ Maths pre teach delivered by teachers with a focus on vocabulary and mathematical structures. ❖ Post teach same day interventions – ‘Maths Masterclasses.’ ❖ ‘Talk 4 Number’ to enhance pupil vocabulary acquisition. ❖ For pupils in Y3 and Y4 who need support and encouragement. ❖ For pupils in Y3 or above who are in the later stages of learning English as an Additional Language.

<ul style="list-style-type: none"> ❖ Classroom secrets resources ❖ Transum.org, Jo Boaler youcubed.org ❖ "Maths No Problem" Teacher textbooks. ❖ Online – Mathletics, Time Tables Rockstars. ❖ Numberblocks <p style="text-align: center;">Success for all</p> <p>Every child can enjoy and succeed in mathematics as long as they are given the appropriate learning opportunities.</p> <p style="text-align: center;">Growth Mind set approach.</p> <p>A growth mindset enables pupils to develop resilience and confidence.</p>	<p style="text-align: center;">Classroom Design.</p> <ul style="list-style-type: none"> • Within many classes the desks face the front. • Pupils will sit in mixed attainment partners/ groupings. • 'Talk partners' will be changed regularly. <div style="text-align: center;"> <p>The diagram is titled "Teaching for Mastery" and is divided into four quadrants: "Representation & Structure" (top-left, blue), "Mathematical Thinking" (top-right, green), "Variation" (bottom-left, orange), and "Fluency" (bottom-right, light green). A central circle contains a double-headed arrow. Surrounding the quadrants are boxes: "Coherence" (left), "Chains of Reasoning & Making Connections" (top-right), "Number Facts & Table Facts & Making Connections" (bottom-right), and "Procedural & Conceptual & Making Connections" (bottom-left). A box on the right states "Small steps are easier to take."</p> </div>	<p style="text-align: center;">Assessment.</p> <p>Summative: End of block White Rose assessments throughout the year. Termly: Autumn / Spring / Summer White Rose Arithmetic and reasoning assessments. Termly: Mathletics online arithmetic and reasoning assessments. NCETM "Teaching for Mastery (questions, tasks and activities to support assessment.) Year group data meetings Statutory assessments at the end of each Key stage.</p> <p>Formative: Classroom monitor evidence assessed against West Jesmond Key Objectives.</p>
<p style="text-align: center;">Wider curriculum links.</p> <p>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 Y5 "Virgin money" and Enterprise workshops. An annual "STEM" week takes place with the aim of highlighting the importance of the subject for a wide range of careers.</p> <p style="text-align: center;">Outcomes</p> <p>End Of KS2 2019 Expected 95% Greater Depth 60% 2018 Expected 94% Greater Depth 55%</p> <p>End of KS1 2019 Expected 84% Greater Depth 46% 2018 Expected 83% Greater Depth 41%</p>	<p style="text-align: center;">Mental calculation.</p> <p>Effective and efficient mental strategies are taught in order for pupils to develop 'true' fluency. The expectation is that all pupils will be able to rapidly recall times tables facts up to 12 x 12 by the end of Y4.</p> <p style="text-align: center;">Written calculation methods.</p> <p>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.</p>	<p style="text-align: center;">Feedback</p> <p>"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</p> <p>Immediate/Feedforward/Summary — see separate policy. Teachers mark with green and pink pens – pink highlighting misconceptions or incorrect answers.</p> <ul style="list-style-type: none"> • Verbal feedback • AFL to identify pre and same day intervention groupings. • Pupil self-marking – KS2 marking stations – in purple pen. • Pupil peer marking