

**Mathematics at the Acorns Primary & Nursery School**

**IMPACT** Teachers assess coverage and achievement against the National Curriculum using a range of assessment tools. First 4 Maths support staff judgements and provide ongoing guidance for individual class teachers, subject leaders and senior management. Teachers work with relevant colleagues to share good practice in books and from lessons, and moderate each other’s assessment regularly throughout the year. Findings from moderation are collated by Maths Subject Leaders and next steps for planning and assessment are decided based on outcomes. Summative formal assessment is inputted into Target Tracker and data is analysed to inform whole school priorities and specific classroom practice.

**INTENT** Our aim is for children to become fluent in the fundamental workings of the number system as this feeds into all number-based work and wider problem-solving activities. Children are taught to reason and generalise about mathematical statements and to design or pursue a line of enquiry having both the resilience and perseverance to grapple with problems. At the Acorns, we intend to create a culture within the classroom where mistakes are celebrated as opportunities for learning - linking to Characteristics of Effective Learning, Metacognition and Growth Mindset. We believe: ‘It’s a Mistake Not to Use Mistakes as Part of the Learning Process’ 2014 Dr Richard Curwin.

**IMPLEMENTATION** We have adopted a mastery approach to the teaching of maths and prioritise depth over acceleration, lingering for longer, so that children are given a deeper and broader understanding of key mathematical concepts. Pupils who grasp concepts more quickly are given opportunities to deepen their knowledge and improve their reasoning skills rather than accelerating on to new curriculum content. Procedural fluency and conceptual understanding are developed in tandem because each supports the development of the other. The school is currently working in partnership with a DfE funded mastery project with a number of other schools involved (North West Maths Hub).

Teachers use Medium Term Plans adapted from The White Rose Medium Term Planning. NCETM assessment materials are used to drive short term planning, and integrate a range of resources to supplement this, including: White Rose, NCETM, NRich, Teaching for Mastery documents and Times Tables Rockstars. In EYFS, the focus is on the Five Principles of Early Number: Order Irrelevance, Cardinal Rule, One to One Correspondence, Abstraction and Stable Order. In Foundation 2, the learning for each week is focused on a particular number. Children explore a specific number in all its possible contexts, thereby making links between different areas of maths. We are mindful to always capitalise on what our children can already do at every stage of their development. Our calculation policy gives an indication of how we expect the majority of children from each year group to tackle calculation problems and the necessary steps to develop their knowledge and understanding of the four number operations. Within the policy, key vocabulary is highlighted which teachers use consistently in lessons to ensure children experience smooth transition between classes.

**PROBLEM SOLVING** Teachers select genuine problem-solving tasks that children do not have well-rehearsed, ready-made methods to solve. Children are taught how to use visual representations to provide an insight into the structure of a problem. Teachers also use worked examples to enable children to analyse the use of different strategies and to deepen the understanding of the logical processes. Teachers plan a range of worked examples that are: complete, incomplete, or incorrect and deliberately contain errors and misconceptions for learners to uncover.

**REASONING** Staff plan for 5 Steps of Reasoning: Describe, Explain, Convince, Justify and Generalise through all stages of teaching. Children reason about the strategies they use during the teaching and learning of fluency and methods of calculation. This is then consolidated with a selection of mastery level reasoning tasks. Children who are ready to reason at a deeper level are given opportunities to generalise. Children reflect and evaluate on how successful their problem solving strategies have been.

**FLUENCY** Teachers ensure that fluency is developed thoroughly through the ‘Strive for Five’ model, before moving onto varied questioning. Fluency is then revisited through ‘Number of the Week’ fluency grids. Fluency is improved by children being explicitly taught the connections between the different operations and place value. Our aim is that children will become, over time, fluent in number facts with a deep understanding of place value and the connections between operations.

**COVERAGE & PROGRESSION** Teachers have been provided with support for planning and this includes how to plan the journey to mastery and then extend to Greater Depth. They have been provided with Digging Deeper books which model how to develop concepts to a deeper level. For children who have significant gaps in learning, teachers track back to the children’s current level and use a ‘Strive for Five’ model to ensure that the children are confident before moving on. Retrieval questions from: ‘Last Term’ and ‘This Term’ are planned for three times a week.

**ASSESSMENT** Teachers use a wide variety of assessment tools within maths to gain a secure understanding of the attainment of all children. Ongoing formative assessments during lessons and throughout topics allow for adaptations and changes in teaching as needed. Teachers use summative assessments at the end of topics to evaluate learning. Assessments can include, but is not limited to, the use of Testbase SATs style questions, White Rose Hub End of Block assessments, the Teaching for Mastery documents and the Ready to Progress materials.

**INTERVENTION** All our interventions are short, sharp and purposeful. 15 Minute Maths is delivered in addition to the daily maths lesson, four times a week, and is fluency based with opportunities to overlearn. These sessions promote positive paired work, quality talk, practice, consolidation and an exploration into ‘why?’ For children working below their current year group, teachers identify the year group that the children are currently working at and use the appropriate assessment tag documents to plan and assess additional intervention sessions.

**LINKS TO CURRICULUM/BV/CULTURAL CAPITAL** Teachers plan for opportunities to use maths skills in subjects across the curriculum. This provides our children with a context in which they can understand why the maths skill they have been taught is important in a ‘real life’ context. Problem solving and reasoning tasks in maths lessons are regularly linked to a real-life context. Teachers ensure all learning is meaningful to the children at The Acorns. We develop in our children the ability to grapple with problems and allow them to communicate effectively and share their opinions, ideas and solutions with others.