



## The Waterside Way – Maths Curriculum

### Intent, Implementation and Impact

| INTENT  | IMPLEMENTATION   | IMPACT   |
|---|--|--|
| <p>At Waterside Primary Academy, maths, reading and writing are at the heart of a child’s learning and therefore form key elements of every learning experience.</p> <p>During maths lessons at Waterside, we strive for all children to develop the following three attributes of successful mathematicians:</p> <p><b>1. Become fluent in the fundamentals of mathematics</b><br/> <b>2. Be able to reason mathematically</b><br/> <b>3. Can solve problems by applying their mathematics</b></p> <p>These skills are embedded within maths lessons and developed consistently over time. We are committed to ensuring that children are able to recognise the importance of maths in the wider world and that they are also able to use their mathematical skills and knowledge confidently in their lives in a range of different contexts.</p> <p>We want all children to enjoy mathematics and to experience success in the subject, with the ability to reason mathematically.</p> <p>We are committed to developing children’s curiosity about the subject, as well as an appreciation of the beauty and power of mathematics.</p> <p>To achieve our intent, we provide a rich, sequenced and progressive curriculum which caters for the needs of all pupils through varied and high quality activities. Pupils are required to explore maths in depth, using mathematical vocabulary to reason and explain their workings.</p> <p>At the core of our curriculum is the concrete, pictorial and abstract approach to maths. Children are taught and encouraged to explain their choice of methods and develop their mathematical reasoning skills. We encourage resilience and conceptual variation and an acceptance that challenges and mistakes are often a necessary step in learning.</p> | <p>The content and principles underpinning our maths curriculum at Waterside Primary Academy reflect those found in high-performing education systems internationally, particularly those of east and south-east Asian countries such as Singapore, Japan, South Korea and China.</p> <p>These principles and features characterise this approach and convey how our curriculum is implemented:</p> <ul style="list-style-type: none"> <li>✓ Teachers reinforce an expectation that all children are capable of achieving high standards in mathematics.</li> <li>✓ The large majority of children progress through the curriculum content at the same pace. Differentiation is achieved by emphasising deep knowledge and through individual support and intervention.</li> <li>✓ Teaching is underpinned by methodical curriculum design and supported by carefully crafted lessons and resources to foster deep conceptual and procedural knowledge.</li> <li>✓ Practice and consolidation play a central role. Carefully designed variation within this builds fluency and understanding of underlying mathematical concepts.</li> <li>✓ Teachers use precise questioning in class to test conceptual and procedural knowledge and assess children regularly to identify those requiring intervention, so that all children keep up. Children’s explanations and their proficiency in articulating mathematical reasoning, with the precise use of mathematical vocabulary, are supported through the use of stem sentences.</li> </ul> <p>To ensure whole-school consistency and progression, the school uses the DfE approved ‘Power Maths’ scheme, which is fully aligned with the White Rose Maths scheme. The school is currently working as part of the DfE funded Maths Hubs programme to ensure that staff at all levels understand the pedagogy of the approach. New concepts are shared within the context of an initial related problem, which children are able to discuss in partners. This initial problem-solving activity prompts discussion and reasoning within mixed-ability pairings, as well as promoting an awareness of maths in relatable real-life contexts that link to other areas of learning.</p> <p>Children are encouraged to solve problems each day through the use of concrete resources, pictorial representations and abstract thinking (the C-P-A approach). This helps children tackle concepts in a tangible and more comfortable way.</p> <p>Teachers use careful questioning to draw out children’s discussions and their reasoning. The class teacher then leads children through strategies for solving the problem, including those already discussed. Children then progress to their Practice Books, where each question varies one small element to move children on in their thinking. Children complete their practice independently, ending in a ‘Reflect’ section where children reveal the depth of their understanding before moving on to more complex related problems.</p> <p>Mathematical topics are taught in blocks, to enable the achievement of ‘mastery’ over time. Each lesson phase provides the means to achieve greater depth, with children who are quick to grasp new content, being offered rich and sophisticated problems, as well as exploratory, investigative tasks, within the lesson as appropriate.</p> <p>Throughout the mathematical journey at Waterside, children develop a growth mindset alongside the ‘Power Maths Pals’ (Flo, Astrid, Dexter and Ash), who inspire our children to adopt a ‘Power Maths Mindset’.</p> | <p>Maths lessons are engaging and well-resourced with the pupils acknowledging that the journey to finding an answer is the most important factor. Our children are resilient and they make measurable progress against the National Curriculum objectives.</p> <p>Children are keen to attempt a range of problems, choosing the equipment they need to help them to learn, along with the strategies they think are best suited to each scenario.</p> <p>Children are developing their skills in being articulate and are able to reason verbally, pictorially and in written form.</p> <p>Well-planned sequences of learning support pupils to develop and refine their maths skills.</p> <p>Children are able to independently apply their knowledge to a range of increasingly complex problems.</p> <p>The school measures impact through:</p> <ul style="list-style-type: none"> <li>• Weekly assessment against our Learning Journey Maps.</li> <li>• Daily interleaving quizzes to assess retention of skills and knowledge</li> <li>• NFER testing to measure attainment against a national standardised score – Termly</li> <li>• Pupil Voice to assess learning</li> </ul> |