

## Teaching and learning of: Maths

| INTENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <p>At Hook-with-Warsash Academy we aim to create confident, skillful mathematicians who have a life-long love of mathematics and can expertly apply their knowledge and understanding. Our curriculum follows the EYFS framework and the National Curriculum via the Hampshire maths planning model. This is a spiral curriculum that incorporates revision and retrieval of prior learning, identifies the learning journey, misconceptions and key vocabulary. Our teaching approach ensures maths concepts are taught using concrete resources, pictorial models and then abstract concepts (CPA), giving the pupils the appropriate resources to support their learning and understanding.</p> <p>Our mathematics curriculum is based on small steps teaching, allowing the majority of pupils to progress together. We build in opportunities for strengthening and deepening understanding and develop mastery of mathematical concepts through acquiring a deep, long-term, secure understanding. The curriculum provides pupils with opportunities to develop fluency and to be able to apply their knowledge through reasoning and problem solving.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                              |         |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                              |
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Each unit of work recaps and then builds on prior learning so that all pupils are able to secure and embed their mathematical knowledge as they move up the school.</p><ol style="list-style-type: none"><li>1. Number and place value</li><li>2. Number – addition and subtraction</li><li>3. Number – multiplication and division</li><li>4. Number – fractions (including decimals and percentages)</li><li>5. Measurement</li><li>6. Geometry – properties of shape</li><li>7. Geometry – position and direction</li><li>8. Statistics</li><li>9. Ratio and proportion</li><li>10. Algebra</li></ol></td><td><p>We aim to develop a mastery approach to mathematics through acquiring a deep, long-term, secure and adaptable understanding of the subject. There are certain principles and characteristics which characterise this approach. They are:</p><ul style="list-style-type: none"><li>• An expectation that all pupils are capable of achieving high standards in mathematics. The mastery approach rejects the idea that a large proportion of people ‘just can’t do maths’. Instead, all pupils have the opportunity to solve problems using their maths knowledge and so succeed.</li><li>• The majority of pupils progress through the curriculum content at the same pace. Challenge is through extending pupil’s thinking with rich and sophisticated problems rather than moving onto new content. Individualised support and interventions help to support those who need consolidation.</li><li>• Practice is a vital part of learning but it is with carefully designed variation (varying the way the concept or question is presented) to build fluency and understanding of mathematical concepts.</li><li>• Pupils are exposed to and are encouraged to use a range of representations (the way in which the maths is shown) to show deep understanding of a concept.</li></ul></td><td><p>Pupils will be exposed to, and become confident in the use of, mathematical vocabulary. 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| IMPLEMENTATION | <p>In our planning, maths domains are tackled in a spiral manner over each half term. This allows each unit of work to build on learning of the previous unit and enables pupils to develop knowledge and understanding in order to reason, problem solve and recall to develop fluency. This is illustrated below.</p> <p>We use 'I see maths', NCETM, White rose and Hampshire maths resources to supplement planning.</p> <p>Our approach to teaching is based around the CPA approach where 'active assessment' during the lessons allows feedback to be given at the point of learning. This creates a learning environment where the pupils are taught to reason and be independent in seeking challenge. There is an emphasis on STEM sentences when discussing thinking and a variety of modelling strategies are used to develop and embed maths understanding. Task are designed to allow children to demonstrate 'Mastery' at a deeper level of understanding. This is accomplished by using a 'Variation' approach to task design.</p> <p>Active assessment guides the direction of learning and teaching during a lesson and informs direction of the subsequent lessons. This ensures that teaching matches the pupil's needs and allows them to demonstrate 'Mastery' at their own individual level of understanding.</p> <p>White Rose and TTRS assessments are conducted half termly. Gaps in learning feed on to next term's planning.</p> <p>Milestone assessments are conducted in Nov, March and June.</p> <p>CPD is via Hampshire training, coaching during PPA, and staff meetings dedicated to maths. There is also guidance given after pupil voice interviews, work scrutiny and progress meetings.</p> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|                | <p><b>SEND / Disadvantaged</b></p> <p>The Maths curriculum is adapted to meet the needs and styles of all learners. A variety of teaching and learning strategies are used to ensure that all pupils can achieve, including:</p> <ul style="list-style-type: none"> <li>• use appropriate interventions to support learning,</li> <li>• small step learning,</li> <li>• targets are used to support the planning and adaptation within each unit.</li> <li>• use of pre-teaching and over learning.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <p><b>EYFS</b></p> <p>The EYFS long term plan follows the EYFS Framework and has been devised to ensure a secure understanding of number. We recognise that this is a fundamental building block for all subsequent maths concepts.</p> <p>Specific mental maths skills are taught on a weekly basis to support the development of a deep understanding of numbers to 10. Games and songs are taught which enable pupils to apply their learning and a wide range of resources and opportunities are provided for pupils to demonstrate their understanding of maths during play.</p> | <p><b>Feedback, Questioning and Discussion</b></p> <p>Feedback is given at the point of teaching and may be written or verbal and in a manner which moves learning forward or helps to embed learning and aid retrieval.</p> <p>Questioning and discussion play a vital role. Pupils are encouraged to think deeply about mathematics, identifying patterns and connections. This ensures deeper understanding than just memorising written methods. An integral part of every maths lesson is the discussion around the knowledge, skills and approach that is needed.</p> <p>Mistakes, in calculation or understanding, are dealt with in a positive manner in order to develop resilience and confidence.</p> |
| IMPACT         | <p>Pupils will have developed the mathematical knowledge and skills to help them explore, navigate and understand the world around them and their place in it. Pupils' knowledge and skills will have developed progressively as they move through the school, not only to enable them to meet the requirements of the National Curriculum but to inspire them to develop a curiosity and a deeper understanding about the world they live in. Pupils will be excited and enthused about sharing their learning with others.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

|  | Pupil Voice                                                                                                                                                                                                                                                                              | Evidence in knowledge and skills                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Breadth and depth                                                                                                                                                                                                                                                                                                                |
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|  | <p>Pupils will be given opportunities to feedback on their experiences in maths through discussions and reflection on their work. Success is judged on whether pupils are positive, confident and actively engaged in maths and able to recall prior learning and identify progress.</p> | <p>Progress is clear throughout the year. This is at milestone points as well as at the end of a unit.</p> <p>Pupils are able to efficiently solve arithmetic and reasoning problems orally or in written form and demonstrate 'Mastery' at their individual level of understanding.</p> <p>Milestone analysis of data is used to identify trends and next steps. This is used to develop planning for the next Milestone and identify what support is needed. At a whole school level we look for trends across groups, topics and question types which informs future actions and plans.</p> | <p>The curriculum builds spirally throughout the year, and year on year, to ensure pupils can recap on and embed learning before building in new knowledge and skills.</p> <p>Deeper understanding is shown as pupils are able to tackle more challenging and complex problems set around the knowledge they have developed.</p> |