

Subject on a Page:

Maths

Waddesdon Village Primary School- Pathway to Excellence

At Waddesdon Village Primary School, we aim to provide a creative, vocabulary rich curriculum that challenges and inspires our children, in preparation for life in a culturally diverse and ever-changing world.



Whole School Curriculum Drivers:

Intent- we aim to...

Excellence





Community




Growth





 Provide a mastery curriculum that provides a deep, long term, secure and adaptable understanding of mathematics from EYFS to Year 6.


 Support all children to develop their conceptual as well as their procedural understanding; making links and spotting patterns that can be applied flexibly.

 Provide varied and high-quality teaching and learning with a focus on fluency, problem solving and reasoning.

  Provide challenge for all and develop children's understanding of how mistakes offer opportunities for learning.

  Share maths mastery good practice within the school community and support other local schools within the BBO Maths Hub.

 Share work, successes and enthusiasm for Maths with the school and village community.

 Develop pupils confidence in Maths with the principle that **all children are capable of succeeding** in mathematics.



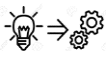
Implementation- How do we achieve our aims?

Curriculum and planning: Across the school Maths is taught daily and includes retrieval of previous taught content. The school follows a mastery curriculum which includes small step planning. The teaching of concepts and mathematical structures are carefully planned, with teachers choosing appropriate and purposeful representations to support pupil's understanding. All classes from Year 1- Year 6 use the NCTEM prioritisation mastery curriculum, which is supplemented with other appropriate mastery resources. EYFS and KS1 have regular 'Mastering Number' sessions which focuses on pupils understanding on additive structures and number facts. The EYFS Maths curriculum uses the NCETM Mastering Number programme to teach 'Number and Numerical Patterns. Shape, space and measure is covered through discrete teaching sessions and continuous provision. Waddesdon's mathematical curriculum has been designed to consider the DfE 'Ready to Progress Criteria' and covers previous taught content from other year groups which may have been missed due to national lockdowns. At Waddesdon we believe in intelligent practice. Our curriculum focuses on the key mathematical concepts, while insuring that we have full National Curriculum coverage within it. Lessons include elements of fluency, problems solving and opportunities to reason.

Consistent and systematic approach to teaching for mastery: At Waddesdon, we teach mathematics through the mastery model which has '5 Big Ideas':

- Coherence- our curriculum has a coherent progression across the school
- Representation and structure- we all use the CPA approach to make the structure of the mathematics visible and accessible
- Mathematical thinking – we intend that children make links and see relationships
- Fluency- we practise and rehearse to ensure knowledge is retained and to a level of automaticity
- Variation – we intend that procedural variation is used to enable children to make connections and see patterns, and intend that conceptual variation is used to present the same concept in different ways to ensure the concept is embedded.

Teaching and learning should be episodic in style, ensuring that concepts and structures are built upon and that pupil's move at the same pace through their learning. Scaffolds should be used to reveal structures/ concepts



Implementation continued...

Consistent and systematic approach to teaching for mastery continued... but also ensure that all pupils can access learning. Opportunities for mastering a deeper understanding should be available for **all pupils** through teacher questioning and independent practice. All pupils should be exposed to the correct mathematical vocabulary and encouraged to use this in their reasoning. All classes across the school should be exposed to a range of well-chosen mathematical representations to support conceptual and procedural understanding. All teachers must support pupil's confidence in maths by promoting a growth mind-set.

Mathematical Variation: At Waddesdon we are developing our maths teaching and learning through using variation. Teaching with variation is to highlight the essential features of a concept or process through varying the non-essential features.

- Procedural variation: Calculations are connected with a slight variation to unveil the mathematical structure. This provides an opportunity to focus on relationships, not just the procedure and to make connections between problems using one problem to work out the next.
- Conceptual variation: Activities are designed to draw attention to what a concept is and what it is not. Therefore teachers provide a range of opportunities to explore the concept in its standard form, non-standard form and through non-examples.

Fluency: Fluency is a key component for pupils to be able to understand and access mathematics. We aim for pupils to be able to quickly and efficiently recall facts and procedures and apply them flexibly. This is achieved through: focusing on fluency during lessons; practising times tables and number facts through TTRS, the mathematics curriculum and having regular short discrete arithmetic sessions. EYFS and KS1 will continue to have 'Mastering Number' sessions focusing on number and additive relationships, with this being EYFS's main teaching of 'Number'. Due to the success of 'Mastering Number' at KS1, we are now teaching Mastering Number at KS2 in Years 4 and 5 which focuses on multiplicative relationships.

Concrete, Pictorial and Abstract (CPA): Our mastery approach to mathematics is supported by the use of a range of concrete, pictorial and abstract representations. All classes have access to a range of high-quality concrete resources in their maths boxes, including things such as tens frames, double sided counters, place value counters, base ten etc... Concrete resources are not just a tool to support younger children or pupils deemed as lower ability, however they should be used by all year groups as a way of revealing a mathematical structure or concept. Once the mathematical structure is grasped, well-chosen pictorials are used to explore the structure further, before moving on to more abstract representations, often initially alongside the pictorial. Abstract maths relies on the children understanding a concept thoroughly and being able to use their knowledge and understanding in a variety of contexts. Please note all children should have access to concrete or pictorial resources if they or their teacher feels they need it as an extra scaffold. If this scaffold is required the aim is to move children away from it as they become more secure so that they do not become over-reliant on it and that they or the adult do not set a ceiling for their learning.

Mathematical Thinking and language: Mathematical thinking is central to deep and sustainable learning of mathematics. Taught ideas that are understood deeply are not just 'received' passively but worked on by the student. Throughout our curriculum, pupils are encouraged to think deeply about mathematics by being given opportunities to explore patterns and investigate relationships or connecting ideas so that pupils can see that concepts in maths are not just discrete. Pupils are given opportunities to think deeply about mathematics through activities such as: comparing standard, non-standard and non-examples; analysing what is the same or different about a structure, reasoning if a generalisation is true or false and justifying this. Throughout this and within every lesson, pupils are encouraged to explain their reasoning. This is an area that has been developed across the school with a focus on using a high level of mathematical vocabulary; providing high-quality sentence stems to scaffold pupils reasoning and discussion and through ensuring that pupils answer questions in full sentences.

Children can recall facts and procedures quickly and efficiently and apply them flexibly to a range of contexts.



Children can think deeply about mathematics, demonstrating conceptual as well as procedural understanding.



All pupils are able to use a range of mathematical vocabulary to explain their reasoning.



Pupils understanding of mathematics which enables them to make good progress with a high percentage reaching age related expectations.



Most pupils demonstrate a growth mind-set in maths and are aware that they can learn from their mistakes.



Pupils are confident to share their mathematical achievements with the school and wider community.

