

Maths at St Denys Primary School

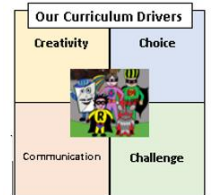
Intent:

*Our aim is to equip **all** pupils with the skills, knowledge and confidence to solve a range of problems through fluency with numbers and mathematical reasoning, exposing learners to a variety of ways of thinking. We strive to inspire enjoyment, confidence and a deeper understanding of the wonders of mathematics and its applications in everyday life and beyond. At each point of transition, pupils will be ready for the next stage of their learning in mathematics.*

Our aims for Maths reflect the aims of the National Curriculum. Pupils should:

- Become fluent in the fundamentals of mathematics
- Reason mathematically
- Solve problems by applying their mathematics to routine and non-routine problems, of increasing complexity

Central to our aims for the teaching of mathematics is the core belief that **every child can be a mathematician**. Our curriculum drivers – **Creativity, Choice, Challenge and Communication** – shape our curriculum. are derived from an exploration of the backgrounds of our pupils, our beliefs about high-quality education and our values. They are used to ensure we give our pupils appropriate and ambitious curriculum mathematics.



Implementation:

What is taught, when and in which order is set out in the National Curriculum programme of study. This is reflected in the school's long term planning, which has been devised by the Maths Leads, in consultation with each year group's teacher. It is reviewed annually.

Medium term planning by year group teachers sets out learning in more detail, identifying each small step in learning of a concept or key mathematical idea as a carefully sequenced journey. Potential misconceptions are identified and planned for.

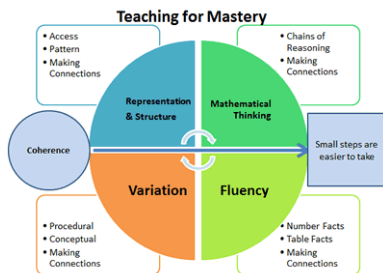
Further adaptations to teaching content are made by individual teachers at the short term planning stage, informed by their ongoing formative assessment of the class and individuals.

Ready to Progress criteria for each year group set out the *essential* knowledge, skills and understanding pupils need to be prepared for the next stage of their learning.

Maths at St Denys is taught through a Teaching for Mastery approach. Teaching for Mastery's principles include high expectations for every child, 'depth before breadth', and a focus on problem-solving and conceptual understanding using a concrete, pictorial and abstract approach. Teaching for mastery is knowing that every child can be a mathematician.

Underpinning Teaching for Mastery are 5 'Big Ideas' which are reflected in classroom practice throughout St Denys.

Coherence – small, logical, carefully sequenced and linked steps in learning keep children learning together so that everyone can learn and master mathematics.

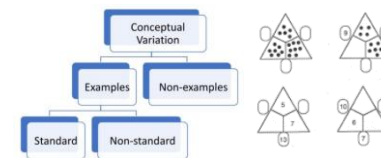


Representation and structure – carefully planned and intentional use of physical manipulatives and pictorial representations by all children throughout the school expose underlying mathematical structures to children and secure, consolidate and deepen their conceptual understanding.

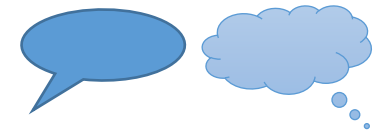


Fluency and flexibility – of number facts, strategy and approach. A strong focus on basic skills develops pupils' fluency and speed. Key facts such as multiplication tables and addition facts within 20 are learnt to automaticity to avoid cognitive overload in the working memory and enable pupils to focus on new concepts. Additional 'Mastering Number' sessions support pupils in Reception and KS1 to develop early fluency in number facts and calculation, while pupils in Lower KS2 master their Times Tables with regular practice and focussed teaching. **Procedural fluency and conceptual understanding** are developed in tandem because each supports the development of the other.

Variation – teachers consciously consider what to change and what to keep the same at each stage in learning. Pupils deepen their conceptual understanding by engaging with the same mathematics in different contexts and securely knowing what a concept is and what it isn't. It is recognised that practice is a vital part of learning, but the practice used is **intelligent practice** that both reinforces pupils' procedural fluency and develops their conceptual understanding.



Mathematical thinking – at all stages of learning, pupils are supported to think deeply about the maths they are learning: to notice, question and reason. **Precise use of mathematical language** supports children's learning across all areas of mathematics. We place a strong emphasis on partner and whole class discussion of strategies and concepts. It is an expectation that children explain their understanding in every lesson (written or verbal). Sentence stems are used to help children structure their explanations and articulate key mathematical ideas.



Whole class teaching and exploration is a key feature of maths at St Denys. **Problem solving and reasoning** activities are a core part of **all children's** mathematics learning. **All pupils are challenged** through rich task design, carefully planned and structured to lead children in small steps through essential conceptual knowledge.

Pupils who grasp a concept more rapidly are taken deeper in learning **within that small step** and given the opportunity to **think, reason and problem solve in more depth and with more complexity**, instead of being accelerated through different content.

Once they are confident with a point of learning, pupils are given opportunities to explore that concept in a range of contexts and problems, including in non-routine problems and combined with other areas of mathematics that have been taught. This becomes more frequent as pupils move up the school and have more experience of mathematics.

Targeted intervention supports pupils when they need more time to secure understanding of a concept. Pre-teaching and flexible intervention secures understanding for pupils **at the point of learning** and ensures all children can remain on the same learning journey. For pupils working significantly below their peers i.e. because of specific SEND, tailored programmes of study are designed for them in consultation with class teachers, SENDCo and Maths Leads, meeting their specific learning needs whilst remaining true to the principles of Teaching for Mastery.

Links between different areas of mathematics and with prior learning are fully exploited within planning, teaching and learning to minimise the demands on pupils' working memories and to secure new understanding. **Retrieval practice** is a frequent feature of lessons and matched to the needs of each class, **ensuring that knowledge taught is retained** and built upon. This takes a range of forms including the use of online software.



We share information about Maths teaching at St Denys with parents and recognise the value of their input to children's learning experiences. Parent guides, regular contact with class teachers, work sharing and focus parent information sessions keep our parents informed about the teaching of Maths at St Denys and equip them to best support their children at home, in line with the way Maths is taught in school.

We recognise that staff subject knowledge is central to the effective teaching of mathematics and employ a range of strategies to support and develop teachers and other school staff. These include:

Regular, whole staff CPD, including Maths focus staff meetings at least half-termly.

Engagement with Solent Maths Hub, schools in our Trust and other schools throughout the region (one of our Maths Leads also works as a Mastery Specialist Teacher for the Hub supporting local schools).

Personalised coaching and support offered to teachers throughout the school to develop practice and subject knowledge.

Engagement with the wider maths community including reading relevant mathematical publications, research and online discourse.

Use of action research to refine practice and discern the most effective strategies tailored to the children of St Denys.

Impact:

Within class, teachers continually assess pupils' knowledge and understanding of concepts taught, using a wide range of AFL strategies including questioning, observation, quick quizzes and peer and self assessment. This is used to adapt teaching in the moment, impact future planning and to support children in knowing their strengths and next steps in learning.

Formal assessment each term gives children 'test experience' and the opportunity to showcase their term's learning, as well as being a further tool for teachers to inform future planning and learning needs.

Parents are kept regularly informed of their child's attainment and progress in Maths, including in line with statutory requirements. Parents' Evenings are used to share children's next steps in learning.

Regular moderation and monitoring ensures that standards are consistent within the school and more widely, e.g. through Trust working groups, engaging with the Local Authority and Maths Hub.

The Maths Leads and SLT regularly monitor and evaluate impact across the school in a range of ways including work scrutiny, pupil conferencing, assessment analysis. Findings are shared and actions taken in a continual cycle of self-improvement. Governors are involved in monitoring and evaluating the impact of Mathematics across the school.

Pupils at St Denys recognise the importance of talking about and explaining their Maths learning. They are able to tackle real life problems and undertake investigations appropriate to their age, ability and previous attainment. Children say that maths is interesting and that learning in small steps and with representations helps them understand and learn more.

