



Our curriculum is focused on the development of every child's knowledge and skills, across all primary subjects, with the aim of ensuring pupils are ready for the next stage of their learning. We encourage our children to: Be Curious, Be Knowledgeable, Be Adventurous, Be Creative, Be Collaborative, Be Reflective, Be Positive.

Curriculum statement for the teaching and learning of Mathematics 2021/2022

National Curriculum Intent

The National Curriculum for mathematics intends to ensure that all pupils:

1. Become fluent in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.
2. Reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language.
3. Can solve problems by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions. Mathematics is an interconnected subject in which pupils need to be able to move fluently between representations of mathematical ideas.

INTENT	When teaching mathematics at Mullion, we intend to provide a curriculum which caters for the needs of all individuals and sets them up with the necessary skills and knowledge for them to become successful in their future adventures. We aim to prepare them for a successful working life. We incorporate sustained levels of challenge through varied and high quality activities with a focus on fluency, reasoning and problem solving. Mastery Pupils are required to explore maths in depth, using mathematical vocabulary to reason and explain their workings. A wide range of mathematical resources are used and pupils are taught to show their workings in a concrete, pictorial and abstract form wherever suitable. They are taught to explain their choice of methods and develop their mathematical reasoning skills. We encourage resilience, adaptability and acceptance that struggle is often a necessary step in learning. Our curriculum allows children to better make sense of the world around them relating the pattern between mathematics and everyday life. The programmes of study are, by necessity, organised into apparently distinct domains, but pupils should make rich connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems. Our curriculum ensure children apply mastery skills. We follow the White Rose maths scheme, with Deepening Understanding, NCETM and I See Reasoning and Problem Solving used to extend fluency, reasoning and problem solving. They should also apply their mathematical knowledge to science and other subjects. The expectation is that the majority of pupils will move through the programmes of study at broadly the same pace. However, decisions about when to progress should always be based on the security of pupils' understanding and their readiness to progress to the next stage. Pupils who grasp concepts rapidly should be challenged through being offered rich mastery and sophisticated problems before any acceleration through new content. Those who are not sufficiently fluent with earlier material should consolidate their understanding, including through additional practice, before moving on. It is our intention that our Maths curriculum ensures that the National Curriculum requirements are not only met, but children receive a broad and rich learning experience. Maths teaching and learning provides children with the opportunity to become number fluent and increase their problem solving and reasoning ability. Through quality first-teaching, children experience learning in a variety of ways, using different resources and approaches including concrete, pictorial and abstract methods. Our vision is to equip our pupils with key skills, knowledge and vocabulary that will enable them to be successful at all elements of the maths curriculum, through meticulously planning the content of lessons and providing children with high-quality lesson resources. Children's success is embedded through providing a challenging curriculum; this curriculum is delivered in a variety of high-quality teaching and learning opportunities. These include daily morning maths, daily fluency recall practice and development of Key Instant Recall Facts (KIRFs) and high-quality learning experiences, both during allocated maths lessons and through the wider curriculum. We identify any pupils who need additional support both on a day to day basis and over a sustained period of time; we ensure that suitable strategies are put in place to support these pupils, through 1 to 1 or small group work, targeted, same-day interventions and pre and post teaching or reteaching of key concepts or skills. We celebrate success and provide opportunities to showcase talent, both in individual classes and as a whole school through use of displays and Virtues assemblies.			
	The teaching of skills	High expectations and mastery	Pattern	Vocabulary
	Teachers teach the skills needed to succeed in mathematics providing examples of good practice and having high expectations. Teachers model good mathematics to pupils on a daily basis.	All children are expected to succeed and make progress from their starting points.	All children will have opportunities to identify patterns or connections in their maths; they can use this to predict and reason and to also develop their own patterns or links in maths and other subjects.	We intend to create a vocabulary rich environment, where talk for maths is a key learning tool for all pupils. Pre teaching key vocabulary is a driver for pupil understanding and develops the confidence of pupils to explain mathematically
	The Teaching of Fluency	The teaching of Reasoning	The teaching of Problem Solving	Mastery
	We intend for all pupils to become fluent in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately Morning fluency	We intend for all pupils to reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language.	We intend for all pupils to solve problems by applying their mathematics to a variety of routine and non routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.	All children secure long term, deep and adaptable understanding of maths which they can apply in different contexts. We intend that pupils will do more, learn more and remember more

IMPLEMENTATION	Curriculum Approach - In the first part, we follow a 'Recap it!' and 'Learn it!' structure, where pupils recap prior, linked learning, then receive teacher input on the lesson's small step. - Pupils then 'Practise it!', attempting a small number of fluency questions, linked to the 'Learn it!' part of the lesson. - Finally, pupils 'Assess it!' and using a traffic light card system, assess their confidence in their learning. - After a break, pupils come back together for the second part of the maths session. During the break, staff will have scanned the red/amber pupils; in this second session, those pupils will receive 'same-day intervention' to immediately support their learning and tackle any misconceptions. Pupils who assessed themselves as green are given the opportunity to 'Apply it!' and deepen their understanding through further fluency, reasoning and problem solving.	Online maths tools In order to advance individual children's maths skills in school and at home, we utilise Times Tables Rock Stars for multiplication practice, application and consolidation. We also use Maths shed to practice fluency.	Fluency We start the day with a maths fluency activity based on the Key Instant Recall Facts (KIRFs) to practise prerequisite skills. These activities are an opportunity for children to consolidate calculation strategies and to revisit areas already taught. <u>Weekly morning maths is delivered and structured as follows:</u> Monday: skills covered in current block of learning (to recap the previous week's learning) Tuesday: skills covered in previous blocks of learning. Wednesday: practise the current half term's KIRFs Thursday: multiplication/division quick facts; linked to develop fluency (eg. 12 x 10, 12 x 100, 12 x 11, 12 x 110, 12 x 220, 12 x 11) Friday: fast five/ten (mixed fluency skills practice)
	Resources (Manipulatives) We implement our approach through high quality teaching delivering appropriately challenging work for all individuals. To support us, we have a range of mathematical resources in classrooms including Numicon, Base 10 and counters (manipulatives). When children have grasped a concept using manipulatives, images and diagrams are used (pictorial) prior to moving to abstract questions. Abstract maths relies on the children understanding a concept thoroughly and being able to use their knowledge and understanding to answer and solve maths without equipment or images	Thoughtful Questioning that encourages deeper thinking about aspects of mathematics.	Continuing Professional Development (CPD) We continuously strive to better ourselves and frequently share ideas and things that have been particularly effective. We take part in training opportunities and Trust networking events.
	Assessment Through our teaching we continuously monitor pupils' progress against expected attainment for their age, making formative assessment notes where appropriate and using these to inform our teaching. Summative assessments are completed at the end of each half term; their results help to update our summative termly school tracker. The main purpose of all assessment is to always ensure that we are providing excellent provision for every child. We assess and track maths progress using White Rose assessments at the end of each term; teacher assessment for learning occurs on a daily basis. We also assess KIRFs three times per half term (beginning, mid-point and end), as well as the White Rose end of block assessments. We assess times table knowledge through Times Table Rockstars in Key Stage 2, and number bond/times table knowledge through daily fluency in Reception and Key Stage 1.		Cross Curricular Maths is taught across the curriculum ensuring that skills taught in these lessons are applied in other subjects.
	SEND The curriculum is adjusted with additional and different provision for all children who have identified SEND and have an Individual Provision Map (IPM)		

IMPACT	By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study.			
	PUPIL VOICE Through discussion and feedback, children talk enthusiastically about their maths lessons and speak about how they love learning about maths. They can articulate the context in which maths is being taught and relate this to real life purposes. Children show confidence and believe they can learn about a new maths area and apply the knowledge and skills they already have.	EVIDENCE IN KNOWLEDGE Pupils know how and why maths is used in the outside world and in the workplace. They know about different ways that maths can be used to support their future potential. Mathematical concepts or skills are mastered when a child can show it in multiple ways, using the mathematical language to explain their ideas, and can independently apply the concept to new problems in unfamiliar situations. Children demonstrate a quick recall of facts and procedures. This includes the recollection of the times table.	EVIDENCE IN SKILLS Pupils use acquired vocabulary in maths lessons. They have the skills to use methods independently and show resilience when tackling problems. The flexibility and fluidity to move between different contexts and representations of maths. Children show a high level of pride in the presentation and understanding of the work. The chance to develop the ability to recognise relationships and make connections in maths lessons. Teachers plan a range of opportunities to use maths inside and outside school.	OUTCOMES At the end of each year we expect the children to have achieved Age Related Expectations (ARE) for their year group. Some children will have progressed further and achieved greater depth (GD). Children who have gaps in their knowledge receive appropriate support and intervention. Mastery All children secure long-term, deep and adaptable understanding of maths which they can apply in different contexts.