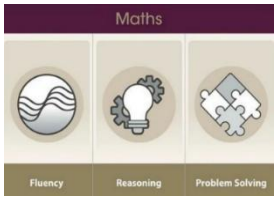
Newtown Primary

Maths Strategy



At Newtown, we believe that all children can achieve and flourish in Mathematics. The teaching of Mathematics embraces our vision of 'Achieving and Flourishing'. We strive for children not just to become mathematically adept, but to have a real enjoyment of solving problems and to relish the opportunity to think deeply and embrace challenge in their maths learning.

Learners will master small steps in an order that enables them to grow into competent mathematicians. They will understand the importance, relevance and wonderful influence that maths has in our world on a daily basis and apply their knowledge in sophisticated and contextual problems.

Therefore, at Newtown, we support our learners to become fluent mathematicians that are **resourceful**, **resilient** and **self-aware**. They are supported to **articulate their thinking** and **make links** to develop their reasoning and problem-solving skills throughout **every lesson**, working **collaboratively**, to **deepen** their understanding and prepare them for **independent challenge**.

Using White Rose and NCETM Mastering Number as the spine of our mathematics planning, we have 4 main aims for mathematics at Newtown:

1) To ensure mathematics in EYFS and KS1 lays the early foundations that develop curious learners that enjoy Maths and have secure understanding of maths foundational skills.
2) To provide a consistent and adaptive mastery approach that benefits all pupils and develops our pupils' fluency, reasoning and problem solving.
3) To ensure pupils build upon prior knowledge, using White Rose small steps as a spine, ensuring coverage and sequential planning moving through the **Know, Show, Grow** taxonomy.
4) To use formative and summative assessment to ensure ALL pupils make good progress in mathematics, adapting provision to meet pupils' needs.

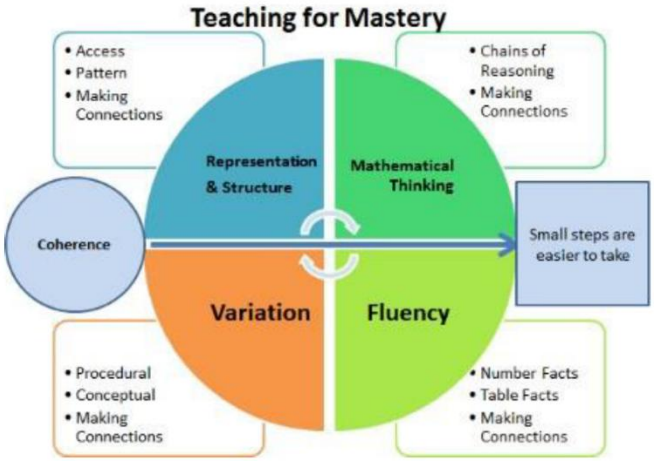
1. To ensure mathematics in EYFS and KS1 lays the early foundations that develop curious learners that enjoy Maths and have secure understanding of foundational skills.

At Newtown, we understand the importance of a solid foundation in mathematical teaching, which will provide the basis for future mathematical confidence and success. In EYFS, pupils follow NCETM's Mastering Number programme to develop a deep understanding of the 'number sense', focusing on the composition of numbers to 10. Every child is expected to 'keep up' and small support groups are given to those children that struggle. Shape, space and measure is taught weekly and developed through continuous provision. Continuous provision encourages pupils to engage enthusiastically in mathematical learning that develops their understanding. Adults deepen this learning through questioning and reflection. Parents are kept informed via a class Dojo, to enable them to engage and support their child's mathematical learning.

Foundations skills and 'number sense' are then continually developed through fluency sessions taught separately to the Maths lesson. Children in Year 1 and Year 2 take part in the Mastering Number Project facilitated by the NCETM. We aim for children to leave KS1 with fluency in calculation and a confidence and flexibility with number. In Year 3, children secure their skills in addition and subtraction before moving on to multiplication and division in Year 4 and 5. Key facts are practised with Numbots and Timestable Rockstars. Secure understanding of these number facts will support mathematical success in the future.

NCETM
NATIONAL CENTRE FOR EXCELLENCE IN THE TEACHING OF MATHEMATICS

2. **To provide a consistent and adaptive mastery approach that benefits all pupils and develops our pupils' fluency, reasoning and problem solving.**



Pupils learn through a mastery approach: pupils are taught to build a deep conceptual understanding of concepts that will enable them to apply their learning in different situations.

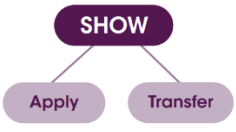
Teachers plan lessons based around a problem and through questioning for all, 'dig down' into the structure of the mathematical concept they are teaching. They use variation to move the children's learning on and encourage them to understand different methods and representations. Success criteria is created so children have a scaffold to support them to be independent. Children are then 'peeled off' to work independently of the teacher on independent problems. Pupils record their thinking in dotted journals, encouraging the use of a range of mathematical models to represent ideas, as well as a reflective approach to their learning. The dotted layout also allows for the alignment of digits to support place value and calculation and the use of this paper is taught during Year 1. Squared paper is also used to support pupils to develop mathematical understanding.

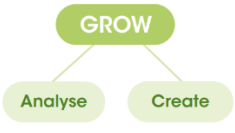
Pupils learn collaboratively through the use of talk partners and whole class discussion. They use shared concrete resources and mathematical models to develop their understanding. They speak in full sentences, at times using STEM sentences to support them. Learning walls and maths areas support children to revisit. They engage in systematic and intelligent practice to embed learning and take time to reflect on their learning and what has helped them.

3. **To ensure pupils build upon prior knowledge, using White Rose small steps as a spine, ensuring coverage and sequential planning moving through the Know, Show, Grow taxonomy.**

The White Rose Maths scheme has been adopted to ensure staff are supported in planning units of work that build upon prior knowledge; provide opportunities for fluency, reasoning and problem solving; support staff subject knowledge and approach to teaching mathematics. Our small step approach is designed to ensure that students revisit taught mathematical concepts in different units of work throughout the year and as they progress within the school. Links and opportunities for mathematics in Learning Enquiries will be made where appropriate. Children have regular maths homework to support learning in class (fortnightly in KS1 and weekly in KS2).

Lessons demonstrate a **Know, Show, Grow approach**. Prior learning is revisited (what do I **know),** acquisition of new knowledge is gained and children **show** their learning in different ways, transferring their understanding to be able to solve new problems. Throughout lessons, children **grow** their understanding by justifying, proving and analysing. During Mathematical Learning Enquiries, pupils are given opportunity to tackle larger problems that allow them to deepen the understanding they have learnt across the unit.





4. To use formative and summative assessment to ensure ALL pupils make good progress in mathematics, adapting provision to meet pupils' needs.

Teachers check prior learning using White Rose End of Unit Test B for the previous year's block or plan an task that will assess the pupils' prior understanding. They use this to plan lessons and cover gaps in pupil's learning and misconceptions. During lessons, teachers use assessment for learning to support and challenge as well as adapt their teaching. Pupils that are struggling to understand a concept, 'stay longer' with the teacher to support them further before they move to independence. Teachers also target pupils in groups to pre-teach, move children on within a lesson or post-teach.

Pupils are encouraged to reflect in purple pen throughout and after lessons. Teachers use an E, P or M during 'in the moment' marking to focus children's reflections.

Children might **explain** their mistakes or thinking, **prove** their understanding through drawings or calculations, and explain their **methods,** trying to think about the most efficient. Children have regular opportunities for self-assessment and are encouraged to reflect on and correct incorrect answers.

At the end of the block, teachers use End of Unit Test A to assess individuals' learning. They also use termly PUMA assessments, regular times table assessment and tracking through Times Table Rock Stars. Pupil progress is tracked through the use of Insight, pupil progress meetings and monitoring from senior leadership as well as teacher support through collaboration in Professional Development meetings, joint planning, observations and feedback.

Identify – Use of assessment	React
Formative Assessment - Assessment during whole class teaching - Assessment of work in books - Reasoning and understanding - Use of Class Dojo in Early Years to record children's development **Summative Assessment** - End of unit assessments - Termly Rising Stars PUMA assessment (KS2) - Times table assessment (Y4 Multiplication Check)	- Provide opportunities in the classroom for all groups of pupils to be challenged, resulting in good progress - Interventions put in place in EYFS to ensure a good level of early development - Targeted guided group work - Additional targeted group work, including pre and post teaching - Use of PUMA assessment analysis to identify to identify whole-class areas of need

We believe implementing the aims in this way will support our vision and develop children that are prepared for the next stage.