



Mathematics at The Ryde School

Research

National curriculum in England: Mathematics programmes of study

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/335158/PRIMARY_national_curriculum_-_Mathematics_220714.pdf

Statutory framework for the Early Years Foundation Stage

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/974907/EYFS_framework_-_March_2021.pdf

Mathematics guidance: key stages 1 and 2 (covers years 1 to 6) – Including ready-to-progress (RTP) criteria.

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1017683/Maths_guidance_KS_1_and_2.pdf

Supporting research, evidence and argument

<https://www.ncetm.org.uk/teaching-for-mastery/mastery-explained/supporting-research-evidence-and-argument/>

Five big ideas in teaching for mastery

<https://www.ncetm.org.uk/teaching-for-mastery/mastery-explained/five-big-ideas-in-teaching-for-mastery/>

Mathematics

Intent

At The Ryde School, our intent for mathematics is to ensure all children become confident mathematicians and develop resilience when solving mathematical problems. We aim to build on children's knowledge and understanding progressively from Early Years to Year 6 in order for them to become fluent in the fundamentals of mathematics.

We intend our children have access to a high quality mastery curriculum that is both challenging, and that will give them a range of opportunities to explore mathematics in a fun and engaging way. This will enable them to make deeper connections across mathematical concepts and give them a wide range of opportunities to develop their mathematical vocabulary, fluency, reasoning and ability to solve increasingly complex problems.

The intent is for all children to be confident to be able to manipulate numbers and apply in different contexts from gained deeper conceptual understanding from the mastery approach using variation.

The mathematics curriculum consists of the key concepts of:

Concrete: Using physical objects and manipulatives to solve mathematical problems and explain their reasoning.

Pictorial: Using drawings to solve mathematical problems to help them reason their solving of problems.

Abstract: Solving maths problems confidently only using number, once the foundations of concrete and pictorial have been embedded.

Implementation

A maths mastery programme led by the NCETM has been completed by the maths subject leader and another lead teacher, working with, and alongside a maths specialist and lead teachers from other schools. This training enabled us to think deeply about mathematical structures and the mastery approach to teaching mathematics. This training has been, and is continuing to be shared with staff and governors to embed the mastery approach to learning. Our Reception and KS1 teaching staff have also completed the NCETM Mastering number programme which aims to provide solid foundations for all children from Reception to Year 1 and Year 2 in the development of good number sense. Over time, the goal is for children to finish KS1 with calculation fluency, as well as confidence and flexibility with numbers. Key knowledge and comprehension will be stressed in Reception classes, as well as advancement through KS1 to ensure future success.

‘White Rose Maths’ has been chosen as the best resource and scheme of work to supplement our mastery journey alongside other resources, including Nrich and NCETM. The White Rose Maths approach focuses on maths mastery — children are taught to fully grasp topics, not just scrape the surface, so by the time they move on to more advanced lessons they have a deep understanding of foundational concepts.

To support the rationale behind the mastery approach to learning, all classes teach ‘fluency’ sessions. For learning to be retained and reactivated, pupils need opportunities for retrieval and rehearsal. These resources have been designed to allow pupils time to remember, practice and secure, the learning necessary to be successful in mathematics.

Maths is taught across the school and curriculum outside the mathematics lesson. Maths is taught throughout other subjects in the curriculum wherever possible, including science and computing, with explicit links made. For example, in Year 1 Science, they used Venn diagrams to sort materials based on their properties; in Year 5, they created scatter graphs to show if there was a correlation between the length of gestation time and the age of an adult. Outdoor learning is planned for as often as possible in mathematics, including orienteering opportunities as well as exploring maths in our environment. We have also subscribed to Times Tables Rockstars (TTRS), which supports children’s recall of table facts and provides an opportunity for them to practise their knowledge and skills in a fun way, in school and at home. We have regular class competitions as well as whole school challenges, which are designed for all classes to be able to achieve e.g. the class which has played the most that week. As a school, we also take part in the annual World Maths Day, with a theme chosen each year. The most recent theme was ‘Maths is everywhere’, where the children took part

in activities such as drawing a scaled map of the school grounds (Year 6) and finding fractions outside (Year 3).

Impact

As a result of our Maths teaching at The Ryde School you will see:

- Games and investigations being planned weekly to engage children's interest in the subjects as well as to improve recall and enjoyment of mathematics.
- Most children across the school showing an enjoyment of mathematics.
- Children knowing it's okay to make mistakes and use these as learning opportunities.
- Children who are developing the ability to make connections between mathematical topics.
- Children who can choose a strategy which suits problems best.
- Continually improving fluency and recall of number facts.
- Lessons that use a variety of resources to support learning.
- A range of representations of different mathematical concepts.
- Children who can use correct mathematical vocabulary with confidence.
- Regular formative and summative assessments to ensure all children make good progress.
- Pupils who well prepared for the next stage of their education.

To measure the impact of the maths teaching, a number of different strategies are used. Pupil voice is used to gather the children's thoughts about maths and an opportunity to share what they have learnt. Book scrutiny's are carried out each term, in different year groups, with a different focus each time, to check that the range of skills and ethos of mathematics is being evidenced in the work the children are producing. Learning walks are carried termly, in different year groups, to ensure that what is being planned for is what is seen in the classroom. Formative assessment is also carried out termly in all year groups and analysed by the maths lead and SLT. The maths lead then uses this data to create an action plan for each year group so that any interventions that are needed are put into place quickly so children receive the support they need.