

2023

How we teach Maths at Stradbroke



Stephen Nash

Stradbroke Primary School

11/27/2023

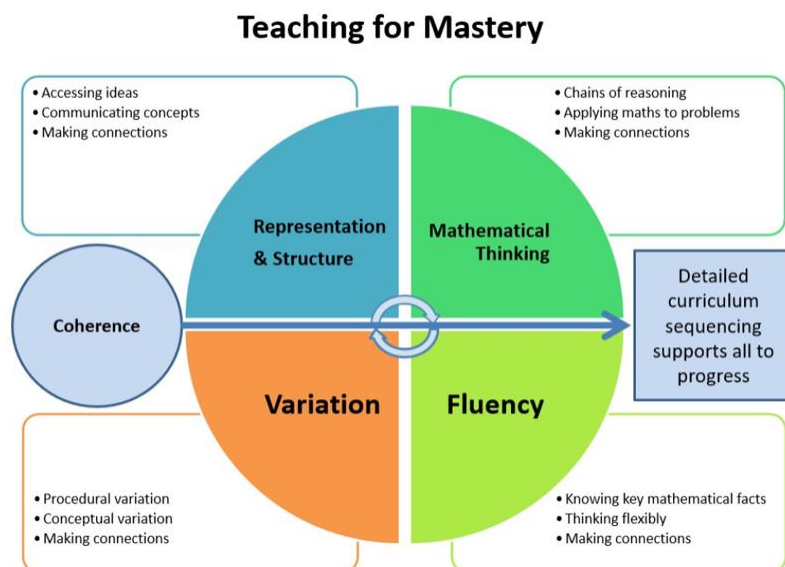
Learning at Stradbroke

At Stradbroke, learning is the process of acquiring the essential knowledge, skills and behaviours required for a secure and extended understanding. Provision is designed to advance understanding, gradually, throughout a key stage. **Lessons** are not an event in themselves. They are part of the process of learning which will carry on over several days or even weeks until a pupil is showing the required level of understanding. Some lessons may involve multiple learning objectives.

Maths at Stradbroke

Maths at Stradbroke is delivered using the framework of the White Rose Maths materials which are aligned with the National Curriculum (Mathematics Programmes of Study for Reception, KS1 and KS2). We are also part of a Maths Mastery Work Group led by specialists from the NCETM (National Centre for Excellence in the Teaching of Mathematics).

Within lessons and across units of learning we plan for opportunities for children to be exposed to the '5 Big Ideas' (key concepts) of Teaching for Mastery:



Coherence

Teaching is designed to enable a coherent learning progression through the curriculum, providing access for all pupils to develop a deep and connected understanding of mathematics that they can apply in a range of contexts.

Representation and Structure



Stradbroke Primary School

Learning for Life!



Teachers carefully select representations of mathematics to expose mathematical structure. The intention is to support pupils in 'seeing' the mathematics, rather than using the representation as a tool to 'do' the mathematics. These representations become mental images that students can use to think about mathematics, supporting them to achieve a deep understanding of mathematical structures and connections.

Mathematical Thinking

Mathematical thinking is central to how pupils learn mathematics and includes looking for patterns and relationships, making connections, conjecturing, reasoning, and generalising. Pupils should actively engage in mathematical thinking in all lessons, communicating their ideas using precise mathematical language.

Fluency

Efficient, accurate recall of key number facts and procedures is essential for fluency, freeing pupils' minds to think deeply about concepts and problems, but fluency demands more than this. It requires pupils to have the flexibility to move between different contexts and representations of mathematics, to recognise relationships and make connections, and to choose appropriate methods and strategies to solve problems.

Variation

The purpose of variation is to draw closer attention to a key feature of a mathematical concept or structure through varying some elements while keeping others constant.

Conceptual variation involves varying how a concept is represented to draw attention to critical features. Often more than one representation is required to look at the concept from different perspectives and gain comprehensive knowledge.

Procedural variation considers how the student will 'proceed' through a learning sequence. Purposeful changes are made in order that pupils' attention is drawn to key features of the mathematics, scaffolding students' thinking to enable them to reason logically and make connections.

Concrete, Pictorial Abstract

Within this framework, we deliver sequences of Maths learning via the CPA approach (often they are taught alongside each other):

- **Concrete** – using physical manipulatives/objects to solve Maths problems
- **Pictorial** – using drawings of representations and structures to solve Maths problems
- **Abstract** – solving Maths problems using ONLY numbers

This approach helps to boost progress; develop a deeper understanding of key skills and plug gaps/address misconceptions. The aim of a mastery approach to Maths is that the child's learning is **deep, long-term, secure** and **adaptable**.

Big Maths



Stradbroke Primary School

Learning for Life!



Across school, from Y1-Y6, there is specific a specific timetabled slot for the teaching of Fluency following the Big Maths scheme. Within these sessions, teachers will recap/teach common misconceptions and children will progress through their tailored Big Maths programme (accessing Click, Safe and Learn It tests relevant to their attainment). Certificates are frequently awarded within weekly assemblies for children who are 'moving up' within their assessments. This regular practice of key fundamental knowledge is then followed up in during daily intervention groups for children at risk of 'falling behind'.

SEND provision in Maths

The needs of our children who have SEND can be met through carefully sequenced and differentiated activities and – for those who may be working significantly below the year group expected standard – through the use of the Birmingham Toolkit materials that break down key mathematical skills into smaller steps which the child will then develop over a number of sessions. This approach is further strengthened through the use of pre-teaching and gap-fill interventions.

Assessment in Maths

Formative assessment – which can also be defined as 'ongoing' or 'daily' – is carried out by teachers throughout every lesson they deliver; whether via questioning, differentiation or verbal/written feedback. This then informs the next steps of the child.

Summative assessment – our Y2 children take part in the end of KS1 SATs, our Y4 children take part in the MTC check and Y6 children take part in the end of KS2 SATs. Summative assessment is also carried out from Y1 to Y6 using End of Term papers (White Rose Maths Resources) which help the teacher to track the child's progress and address individual (or group) misconceptions.

Nursery and Little Teds (2 year olds)

Our very youngest children start learning about number through songs such as '5 Little Ducks', '5 Speckled Frogs' and '12345 Once I Caught a Fish Alive'. They learn nursery rhymes such as 3 Blind Mice and Baa, Baa Black Sheep and read stories such as 'The 3 Little Pigs' and 'Billy Goats Gruff'.

They play games using dice to encourage counting and on a daily basis the registers, calendars and lunchtime requests are used for counting opportunities.

Numbers placed around the environment support children with number recognition. Children use construction materials such as Duplo and blocks to explore shape and space.

As children move through into reception all the above still continues but with the addition of a more structured and adult led provision with children being taught the early stages of addition and subtraction using concrete and visual resources as support.

Maths at Home & Extra Curricular Maths

Maths activities are included in the year group Home Learning Menu and each child has a Times Table Rock Stars account which they can access both in school and at home. TTRS Learner of the Week certificates are awarded in the weekly merit assembly to celebrate effort, accuracy and speed. In KS2, children have the opportunity to take part in a weekly chess club and in Upper Key Stage 2 (years 5 and 6) can represent Stradbroke in inter-school Maths challenge days.