Teaching for Mastery at St Peter's

St Peter's Church of England Primary School

Many people think that some students can work to high levels and some cannot because of the brains they are born with, but this idea has been resoundingly disproved. Study after study has shown the incredible capacity of brains to grow and change within a remarkably short period of time.

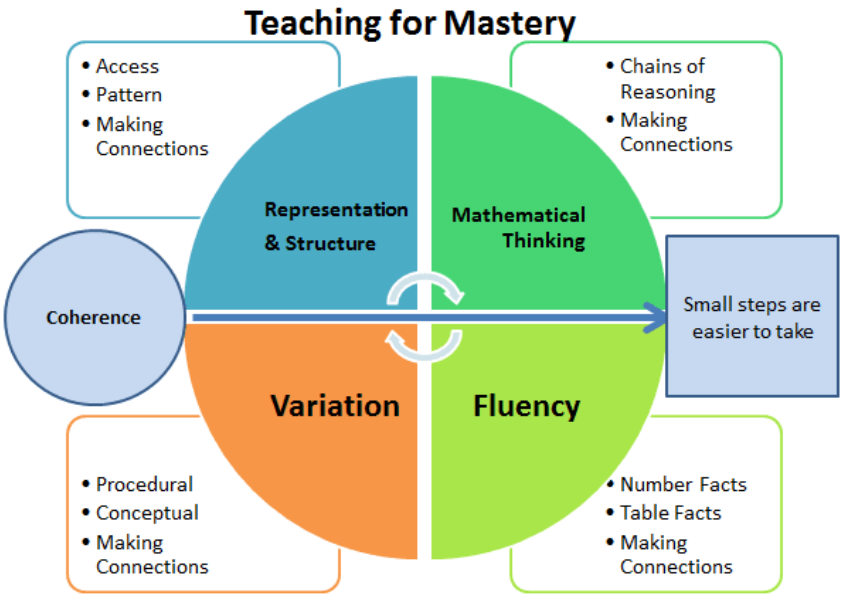
Professor Jo Boaler, Stanford University

At St Peter's, we believe that mathematics is for everyone and that no-one should be allowed to believe that they 'can't do maths'. All pupils are entitled to access the essential set of **rich mathematical concepts and big ideas** that will allow them to flourish and become successful and numerate adults. We understand that learning maths is like building a tower; children must have firm foundations and acquire specific building blocks in a certain order. If any of these blocks of understanding are missing (due to too-rapid acceleration or insufficient depth), then the tower is shaky and can be toppled at any time.

We are therefore proud to have been one of the early adopters of 'Teaching for Mastery' and have invested heavily in staff training, high-quality textbooks and resources as we recognise the transformation in children's learning that this approach can produce. We work with the NCETM (National Centre for the Excellence of Teaching in Mathematics) through our work with the Boolean Hub in Bristol and Miss Napier works as a Primary Maths Specialist with them.

'Mastering mathematics' means children acquiring a **deep, long-term, secure and adaptable understanding** of the subject. At any one point in a pupil's journey through school, achieving mastery is taken to mean acquiring a solid enough understanding of the maths that has been taught to enable him/her move on to more advanced material. We use the phrase 'teaching for mastery' to describe the range of elements of classroom practice and school organisation that combine to give pupils the best chances of mastering mathematics.

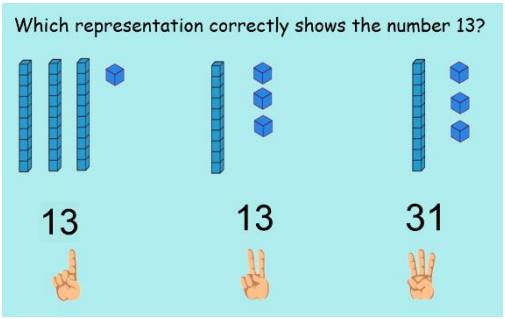
The NCETM have drawn upon research to identify 'Five Big Ideas' which are key to our teaching:



In order to develop these, you will see the following in a typical St Peter's maths lesson:

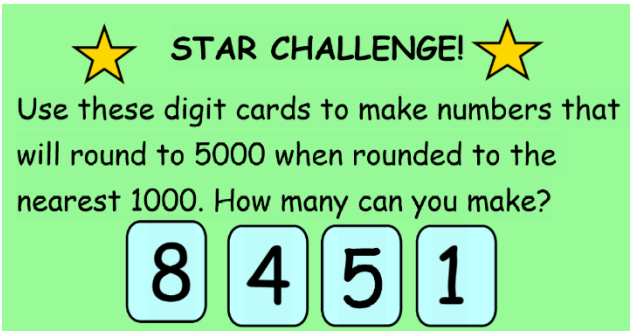
- The vast majority of children work together on the same, tightly-focussed curriculum objective
- Steps within a lesson are carefully planned to incrementally build up children's understanding

- Teacher-led learning ('ping-pong') predominates, with time also given for children to practise in pairs and independently
- Children and staff talk about their maths using clear vocabulary and in full sentences
- Stem sentences are used to expose mathematical generalisations and to aid recall and application
- 'Marvellous mistakes' are happily shared and unpicked by children and staff as we all recognise that this strengthens everyone's conceptual understanding
- A range of manipulatives (equipment such as Dienes, tens frames and Numicon) and pictorial representations (such as the bar model) are used to model the mathematical structure of key concepts for all children (not just for younger pupils or those who are struggling)



- Essential number facts such as number bonds and times tables are practised regularly to enable children to become fluent; knowing number facts frees the mind to think more deeply about the mathematical concept(s) involved
- 'Hinge questions' are carefully planned and are used to immediately assess the class's understanding at a certain point within the lesson
- Children mark their own work to provide immediate feedback that can be acted upon; teachers stamp books with 'Objective met', 'Objective nearly met' or 'Objective not yet met
- Each week, children are given the opportunity to 'retrieve' learning from previous lessons, weeks, terms and years.

How do we challenge children who grasp a concept rapidly?



- The next step is to tackle the 'star questions' which are carefully planned throughout the teacher-led learning. The encourage children to think more deeply about a concept
- Children who have completed the short independent task accurately are extended through a 'star challenge' task which again probes more deeply into the lesson's objective

How do we support children who are struggling to grasp a concept?

- Teachers react rapidly during the lesson using AfL strategies; for example, a teacher may work with a guided group of children who struggled with the hinge question
- Children who have not met the lesson's objective receive immediate intervention to enable them to be ready for the new learning tomorrow; this usually takes place through post-teaching with a TA who will have been in the morning maths lesson
- Children with SEND who are working more than a year below their year group work on individually targeted learning which follows all of the 'Teaching for Mastery' principles