



Maths Shed's Mastery Approach and What it looks Like at Priestsic...

The teaching slides have been designed to facilitate a discursive, whole-class, teacher-led approach to the teaching and learning of mathematics. Maths Shed have drawn inspiration from a number of places, Shanghai, Singapore, the USA's NCTM, the UK's NCEM, as well as a popular scheme in the UK, White Rose Maths (which Priestsic follow).

Each lesson is intended to be accessible for a mixed-ability class, with differentiation possible through adult or peer support (mixed-ability pairings or groupings) and particularly through the use of mathematical equipment (from Base 10 pieces, to Cuisenaire rods, to place value counters) and scaffolds, such as place value charts or times tables' grids.

The lesson presentations have been designed to allow teachers the choice of printing out the materials or allowing children to work together from an interactive whiteboard so they grow in independence by taking ownership of the presentation of work in their books, responding to or representing tasks that require fine-motor skill practice, as well as being more environmentally-friendly!

Every lesson begins with a Starter activity that will either follow on from the previous lesson's learning or begin to introduce the focus of the particular lesson the class are embarking upon. They often lead with a question that requires some reasoning and that introduces children to the mathematical equipment or pictorial representations (such as bar models or part-whole models) that will be used throughout the lesson at hand. It is up to individual teachers to choose whether these tasks are completed independently, collaboratively, or as a whole class discussion.

The whole-class teaching presentations provide examples of most - if not all - possible mathematical equipment that can be used for each topic, as well as various pictorial structures, allowing for optimal conceptual variation. Ultimately, a mastery approach is intended to allow children to become fluent and fluid in identifying, choosing and applying multiple models, structures and strategies when solving calculations, applying reasoning or solving mathematical problems or investigations. By introducing and revisiting multiple forms of representation and strategies, children are given the best possible opportunity of achieving mastery in mathematics! Equally, in doing so, children are able to engage in metacognition (more mindfully too) as they are enabled to grow in awareness of the thinking about the thinking they need to do to solve calculations or problems when choosing and applying mathematical strategies.

Following the Starter activity, the lessons have Talking Time slides (Teach it) that either lead to discussions to draw out where the children may have encountered the mathematical concept before in real-life (or where to look out for it in future!), offer an opportunity to gauge the children's current capabilities or know-how, and/or model the strategy or impart the knowledge the class require to access and succeed in the first activity (and often the following activities too).

For the majority of lessons, Activities 1, 2 and 3 tend to focus largely on fluency within the topic or method of that particular lesson and its core learning objective. There is also generally a progression through these Activities through using mathematical equipment, to applying that experience to sketches or pictorial representations, through to

applying the knowledge gained or skill taught and learned in an abstract, less-scaffolded form. (Teachers always have the choice of allowing pupils to continue using the equipment or scaffolds enabling them to access the later activities - or extension by asking children to write their own questions or problems similar to those included in each activity.)

The questions and activities in our lessons build in difficulty or complexity as the lesson progresses. We are big believers in confidence being the route to mathematical success for children, so have worked hard to make our lessons micro-differentiated so children have the chance to grow in assurance and self-reliance throughout their learning journey in mathematics, both within, through and across lessons and units of learning.

The lessons have also been designed to allow for staged instruction, with Talking Time slides allowing for a Me-We-You approach (a teacher model question, the class working through a question or problem alongside the class teacher, then example problems for fluency practice before embarking upon each Activity either independently, collaboratively or with adult support, based on teacher decisions regarding differentiation for the children in their class. Similarly, each Activity (and even the Talking Time slides) are split into question and answer slides, allowing for multiple mini-plenaries throughout the lesson to enable teachers to provide continuous formative assessment to be able to react to and address misconceptions and confusion in the moment (as well as an opportunity for live-, self- or peer-marking to reduce teacher workload outside of class time)!

The latter activities, Activity 4, 5, 6 or even 7 (depending on the lesson), generally progress from fluency tasks to tasks requiring reasoning, problem solving or investigation. Again, these tasks can be completed independently, in pairs or groups, with adult support and with or without mathematical equipment, scaffolds, pictorial representations (such as bar models or part-whole models).

Every lesson also ends with an Evaluation question. Some are low-ceiling, high-threshold tasks; others allow the children an opportunity to give a summary of the day's learning; whilst others again encourage the children to prove a rule or disprove a misconception. Regardless, each is designed to allow teachers an insight into each child's progress and attainment within that lesson and across a unit of learning.