



MA2M+104: Guide to NCETM mastery online resources

Register on the NCETM website to access mastery approaches to maths resources

- Go to the National Centre for Excellence in Teaching Mathematics (NCETM) website, click on the top right 'Login / Register' button and register with the site:
<https://www.ncetm.org.uk/>
- Then, find the mastery development resources by clicking here:
<https://www.ncetm.org.uk/resources/47230>
- Watch this introduction video to get some context on mastery approaches to maths
<https://www.ncetm.org.uk/resources/49034> it is also on *vimeo* at <https://vimeo.com/167245661>

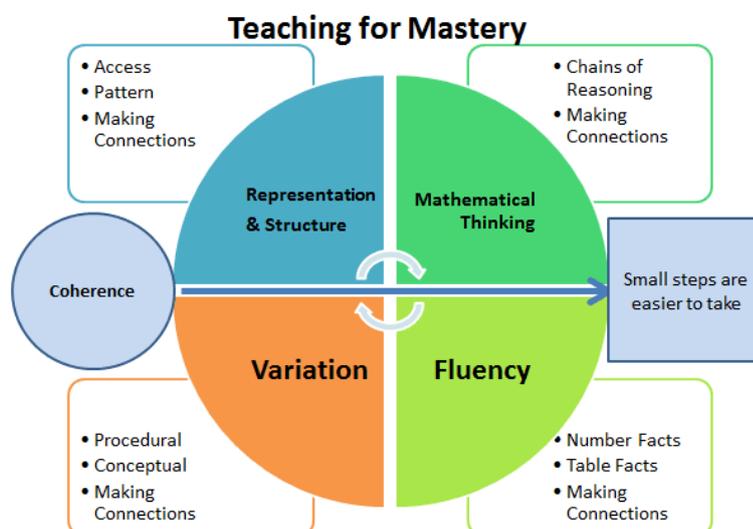
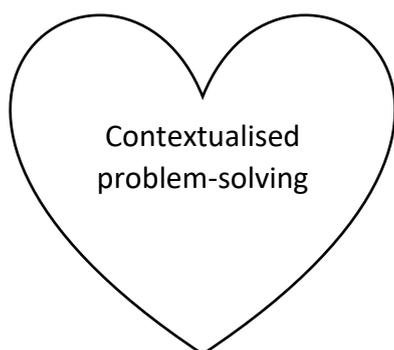
Key NCETM overview resources on mastery approaches to maths:

1. The concise NCETM 'Essence of Mastery' handout is a good starting point and is provided in full on page 2 of this document. It is available for download at:
<https://www.ncetm.org.uk/files/37086535/The+Essence+of+Maths+Teaching+for+Mastery+june+2016.pdf>

2. The **Five Big Ideas** diagram is an overview:

<https://www.ncetm.org.uk/resources/50042>

However, this NCETM diagram might be improved by placing a big red heart right in the middle with 'contextualised problem-solving' written on it.



3. The NCETM 'Mastery Explained' and 'Mastery in Action' <https://www.ncetm.org.uk/resources/47230> videos are a good starting point for seeing classroom practice of mastery approaches.
4. The NCETM booklets 'Teaching for Mastery: Questions, tasks and activities to support assessment' for each Primary year group provide a really useful resource and despite being around 30 pages it is probably worth printing off the booklet for your year group: <https://www.ncetm.org.uk/resources/46689>

The Essence of Maths Teaching for Mastery

- Maths teaching for mastery rejects the idea that a large proportion of people ‘just can’t do maths’.
- All pupils are encouraged by the belief that by working hard at maths they can succeed.
- Pupils are taught through whole-class interactive teaching, where the focus is on **all** pupils working together on the same lesson content at the same time, as happens in Shanghai and several other regions that teach maths successfully. This ensures that all can master concepts before moving to the next part of the curriculum sequence, allowing no pupil to be left behind.
- If a pupil fails to grasp a concept or procedure, this is identified quickly and early intervention ensures the pupil is ready to move forward with the whole class in the next lesson.
- Lesson design identifies the new mathematics that is to be taught, the key points, the difficult points and a carefully sequenced journey through the learning. In a typical lesson pupils sit facing the teacher and the teacher leads back and forth interaction, including questioning, short tasks, explanation, demonstration, and discussion.
- Procedural fluency and conceptual understanding are developed in tandem because each supports the development of the other.
- It is recognised that practice is a vital part of learning, but the practice used is **intelligent practice** that both reinforces pupils’ procedural fluency and develops their conceptual understanding.
- Significant time is spent developing deep knowledge of the key ideas that are needed to underpin future learning. The structure and connections within the mathematics are emphasised, so that pupils develop deep learning that can be sustained.
- Key facts such as multiplication tables and addition facts within 10 are learnt to automaticity to avoid cognitive overload in the working memory and enable pupils to focus on new concepts.