

Session Plan

Secondary Mastery Big Idea: Fluency

This professional development module is one of a suite of six modules designed to introduce secondary maths trainee teachers to the NCETM's Teaching for Mastery 5 Big Ideas. Each module shares a rationale, key messages and at least one practical strategy suitable for novices to adopt. Together, the modules form an introduction to teaching for mastery for the novice.

Goals	To help trainee teachers (TT) to: <ul style="list-style-type: none"> <input type="checkbox"/> understand the what, why and how of fluency <input type="checkbox"/> consider some practical techniques for building fluency <input type="checkbox"/> practise using these techniques.
Starting points	TT will have seen the teaching for mastery diagram with the 5 Big Ideas in the Introduction module. They may have come across the term 'fluency' and may have formed preconceived ideas of what this means without having met a definition
Materials required	PC & projector Whiteboard or flipchart & pens Group set of mini whiteboards & pens Session handout (optional)
Time	60 minutes
Room layout	Room layout should accommodate TT working in pairs and groups of four.
Suggested approach	<p>Share Teaching for Mastery Framework (S2) and highlight that this session will explore Fluency.</p> <p>Start with a prompt about what we understand by 'fluency' (S3). TT discuss. Helpful to start by considering what we understand by fluency in other areas of learning e.g. speaking a language, playing a musical instrument.</p> <p>Exposing rationale.</p> <p>Share aim(s) of the national curriculum for mathematics (S4)</p>

Key messages

Share the key messages (S5) allowing TT time to read (page 1 of handout). The key messages state that “It encompasses a mixture of efficiency, accuracy and flexibility”. Task TT with discussing what is meant by efficiency, accuracy and flexibility in pairs (S5). Share suggestions from Bay-William & Stokes-Levine and model (S6) and definition from McCourt (S7). Discuss.

Practical application

Strategy 1: Creating opportunities for using an alternative method (30 minutes).

Display S8 (page 2 of handout) and inform TT that this is a sequence of questions being posed to students to retrieve and practise the short division algorithm that they have been taught previously. Ask TT to answer the questions using this algorithm.

Ask TT how this sequence might help build fluency i.e. it creates opportunities for students to select an appropriate strategy. Ask TT to create their own sequences in pairs (there is another example on S9 which can be shown before or after this task depending on whether they need more worked examples). Once TT have completed their examples, ask them to share and feedback in their groups of four.

Discuss the notion of ‘best’ strategy (S10) – might be dependent upon the context, the stage of development of the student, etc. Might change over time.

Strategy 2: Comparison of worked examples

Show TT the set of strategy comparison worked examples (S11-14 and one on page 2 of handout). Each time ask them to answer the questions posed whilst considering how they might help build student fluency. Task them with creating their own in pairs and sharing with their group of four.

Summary

Recap two strategies (S15) before returning to the key messages (S16) to discuss in pairs how the two strategies address these and how they will build student fluency in their teaching. Share thoughts.

Close by encouraging TT to connect with the NCETM and their local Maths Hub (S17-18).

What TT might do next

Practise creating opportunities for students to select an appropriate strategy within their practice tasks and compare strategies using worked examples.