

7/21/2023

# Highwood Maths Cycle

Termly Overview

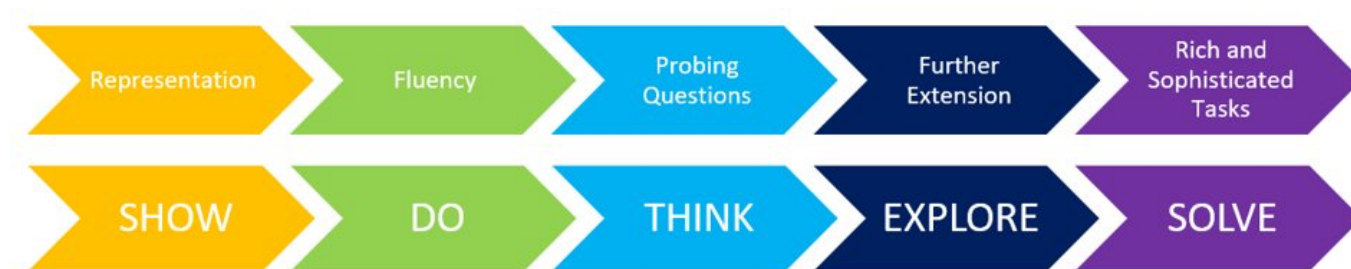
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## Highwood's plan for developing an effective maths cycle

### The Teaching Cycle for Maths:

At Highwood, we follow a mastery flow for all maths lessons:



The process encourages pupils to become fluent in the fundamentals of maths through frequent practice with increasing complexity over time. All children move through the flow at their own pace e.g. some children might be on 'do', while other children could be on explore.

Learning objectives and success criteria are built so the children know what they are going to learn during the lesson, as well as how they're going to achieve the outcome. Throughout all lessons, adults support children using AfL to identify misconceptions and address them throughout the lesson.

During each objective, the main teaching happens during the 'show' part of the lesson. This is where children have the opportunity to move through the concrete, pictorial and abstract concepts, as well as having practical opportunities to explore the learning. Throughout this part of the lesson, teachers also use stem sentences to help develop children's understanding, as well as to help build up reasoning skills so children can reason, explain and justify their learning.

Show is the main input of the lesson. LO is introduced and maths resources are used as much as possible.

Do is where children complete the varied fluency. It is about ONE skill, which is the key part of the lesson

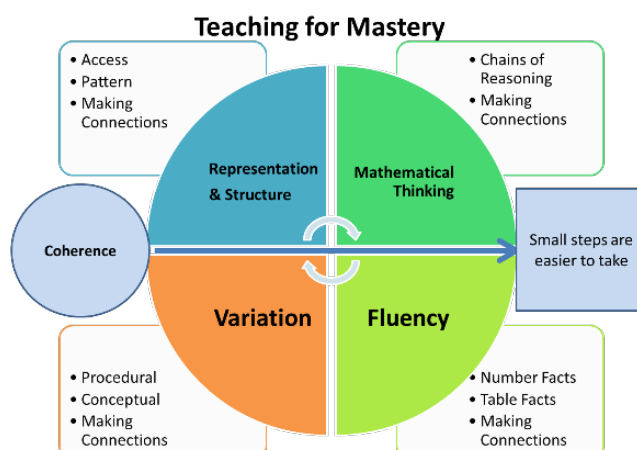
Think is where children are expected to reason, justify or explain. It is about the ONE skill the learning of the lesson is centered around and children are expected to write a written answer.

Explore is where we begin to bring in previous learning into the lesson. There can be multiple objectives.

Solve is where we get children to look at more open ended maths, e.g. investigations. There may be no clear starting point and it will cover multiple objectives.

### Teaching for Mastery Principles:

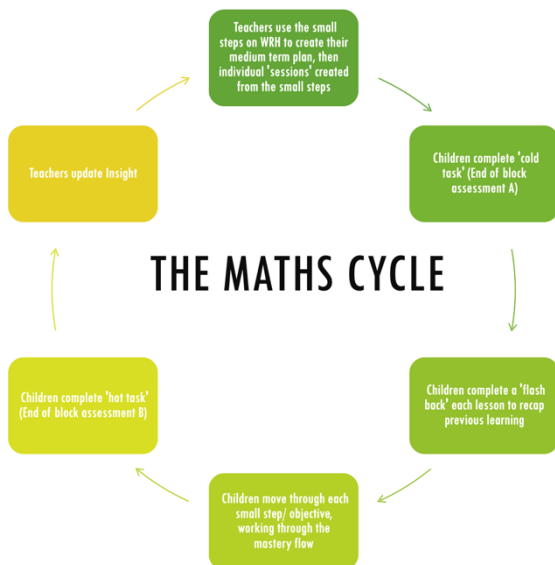
- Teaching for mastery is fundamentally built on the ethos that *all* children are capable of understanding and doing maths, given sufficient time and small enough steps (coherence)
- By building on the 5 Big Ideas for Mastery, pupils can make rich connections between concepts and ideas. Challenge is provided through depth, rather than accelerating onto new content
- It is not just about memorising facts or procedures, but involves knowing 'why' as well as



knowing 'that' and knowing 'how' to use knowledge appropriately, flexibly and creatively to apply it in new and unfamiliar situations.

At Highwood, the principles of mastery are achieved through our maths planning cycle, where we use our mastery flow. At each stage, there is an expectation that children are able to communicate their understanding of the concept before they move on.

### Planning a Unit of Work:



- At Highwood, we use White Rose to plan our maths lessons
- Teachers plan using a medium-term plan (one per unit) to map out learning, small steps taken, stem sentences, Teachers use White Rose planning guides and teacher resources to plan on a daily basis and create strong, detailed lessons that take children through the small steps of learning
- Each lesson a 'flashback' is used to keep previous learning recapped
- At the beginning and end of each unit, a cold and hot task is used to help identify any gaps the children have to help support planning
- Through each objective, the children have the opportunity to move through the mastery flow

### Mental Maths

At Highwood, we have a set mental maths time table to ensure that we have a clear and consistent approach to learning number facts, multiplication facts and mental arithmetic. In KS2, each child has at least 1 session a week to use TTRS/ Sumdog.

- In EYFS and KS1 the mental maths sessions are based around the Mastering Number program, focusing on subitising, recognising number patterns and ensure secure number facts e.g. number bonds. Sessions are 15 minutes a week, 4 times a week
- In LKS2 there is a large focus on multiplication facts, using our new, consistent approach. The multiplication program is based on the 'magic 36' facts that children need to learn in order to know the majority of their multiplication facts. When each fact is learnt is mapped out and the length of time based on each timetable is dependent on how many facts are being learnt
- In USK2 there is a larger focus on mental arithmetic. This involves recapping previous objectives, taking mental maths test weekly and focusing on fluency and speed in arithmetic

There is a copy of the mental maths time table and mastering number overview attached to this document at the end.

### Parental Support

- Curriculum maps are sent home termly to let parents know what is being taught each term
- A termly maths newsletter is sent home to help support parents
- Maths booklets are sent out yearly to help support parents with maths at home
- Maths workshops happen in September to help parents understand the expectations of the year
- One SPLAT is maths based