

# HCCS Mathematics

## Our Curriculum Maths

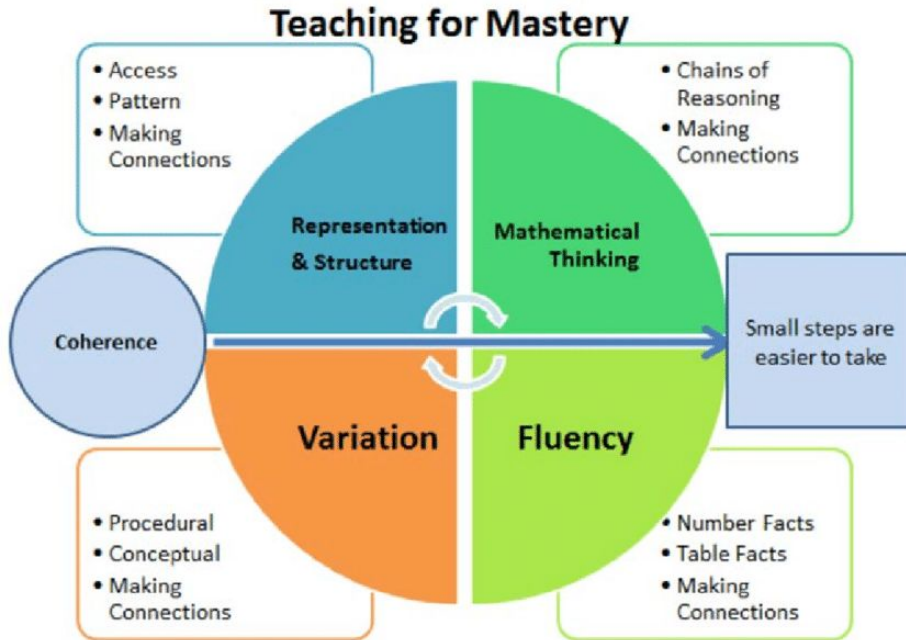
### Intent:

To instill a belief amongst all students, as well as all members of our school community, that Everyone Is a Mathematician and that Everyone is capable of succeeding in mathematics.



We learn together  
We belong to this community  
We are proud of ourselves and each other  
We have consistently high expectations

# Teaching for Mastery



## Underpinning principles

- Mathematics teaching for mastery assumes everyone can learn and enjoy mathematics.
- Mathematical learning behaviours are developed such that pupils focus and engage fully as learners who reason and seek to make connections.
- Teachers continually develop their specialist knowledge for teaching mathematics, working collaboratively to refine and improve their teaching.
- Curriculum design ensures a coherent and detailed sequence of essential content to support sustained progression over time.



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**What we will see in our students:**

*Inquiry-based learning*

*Effective collaborative working*

*Asking questions*

*Resilience*

*Perseverance*

*Deep discussions focused on concepts and maths in context*

*Ambition*

*Less reliance on teacher and more independent focused*

*Motivation*

**Staff Beliefs:**

*All students have potential in Mathematics*

*Accurate assessment and responsive feedback enables student progression*

*Engagement*

*Enthusiasm*

*Students should have high expectations*

*Behaviour does not reflect ability*

*Reflective*

*Growth Mindset*

**Mixed Ability Teaching - Growth Mindset**

*Teaching for Mastery is progressive*

*Students learn through discussion.*

*Maths lessons are consistent within year groups*

*Students have the opportunity to work collaboratively.*



# An exercise we may have been given at school

1)  $5 + -3 =$

2)  $-1 - -1 =$

- Procedural
- Mechanical
- Random order of questions
- Reliant on “rules”

3)  $5 + -7 =$

4)  $5 + -1 =$

5)  $-1 + -8 =$

6)  $2 - 2 =$

7)  $-10 - -2 =$

8)  $-7 + -1 =$

9)  $-3 - 6 =$

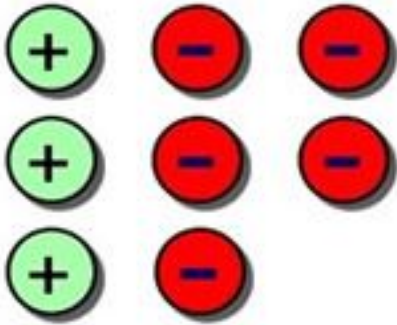
10)  $-5 - 3 =$



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# Use of manipulatives and representations

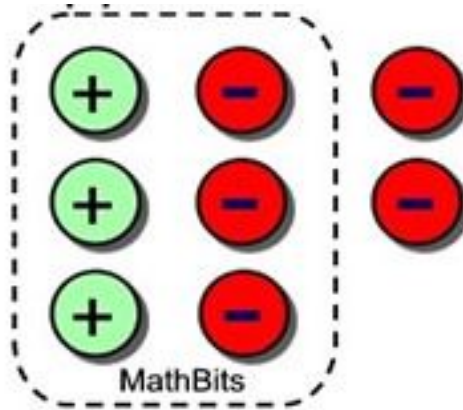
Represent  
the situation



$$3 + (-5)$$

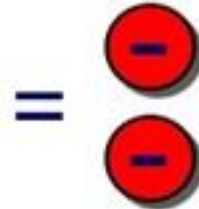
=

Find zero  
pairs



Equal Zero

Answer



=

$$(-2)$$



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# Careful Question Design

$$(-4) + 3$$

$$3 + (-4)$$

$$(-3) + 4$$

$$4 + (-3)$$

$$(-4) + (-3)$$

- *What's the same and what's different?*
- *Were some easier than others?*
- *Are there any patterns?*
- *Is there a rule?*



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# Mixed Attainment Model

*HCCS Mathematics Learning Pathway*

Lower School

Upper School

Year 7

Year 8

Year 9

Year 10

Year 11

**4 Mixed Attainment** Groups  
- X or Y followed by 1, 2, 3 or 4

**1 Intervention** Group  
- X5 or Y5

**3 Higher-Mixed**  
**1 Intermediate**  
**1 Intervention**

**2 Higher**  
**1 Intermediate**  
**1 Foundation**  
**1 Intervention**

**2 Higher-Mixed**  
**1 Intermediate**  
**2 Foundation**

All groups, with the exception of 9X3, will follow the **same scheme of work** with some additional information below:

- Intervention groups will have smaller class sizes and bespoke adaptations to lessons to support whilst still following the main scheme
- Intermediate groups will spend a greater amount of time embedding key declarative knowledge before building up to procedural knowledge, with a greater emphasis on content that features on both Higher and Foundation Tiers (Cross-over content).
- Selected individuals from Higher groups will be given the opportunity to access the GCSE Further Maths curriculum within lessons and during tutor time sessions

# Stretch and Challenge

## How do we support our Higher Attaining students?

Comfortable that if you don't understand you'll get help

Opportunities for 1-1 support when you move on to practising

There's enough help but not too much

I benefit from practising more - the more I do it the easier it is

## How does the mastery approach prepare students for A-Level maths?

It's not frustrating, because everyone can do it enough to mean we move forward

It's good to help other people - because they can bring another way to understand it

Understanding more ways to do things really helps me get it and be able to explain why



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