MATHS

LAUNCH for SUCCESS

WERNETH SCHOOL

Growth Mindsets in Maths

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Maths is loaded with 'cultural baggage' – it is culturally acceptable to dislike numbers

'I'm not a maths person'   'I've never been good at maths'   'We're not mathematicians in our family'
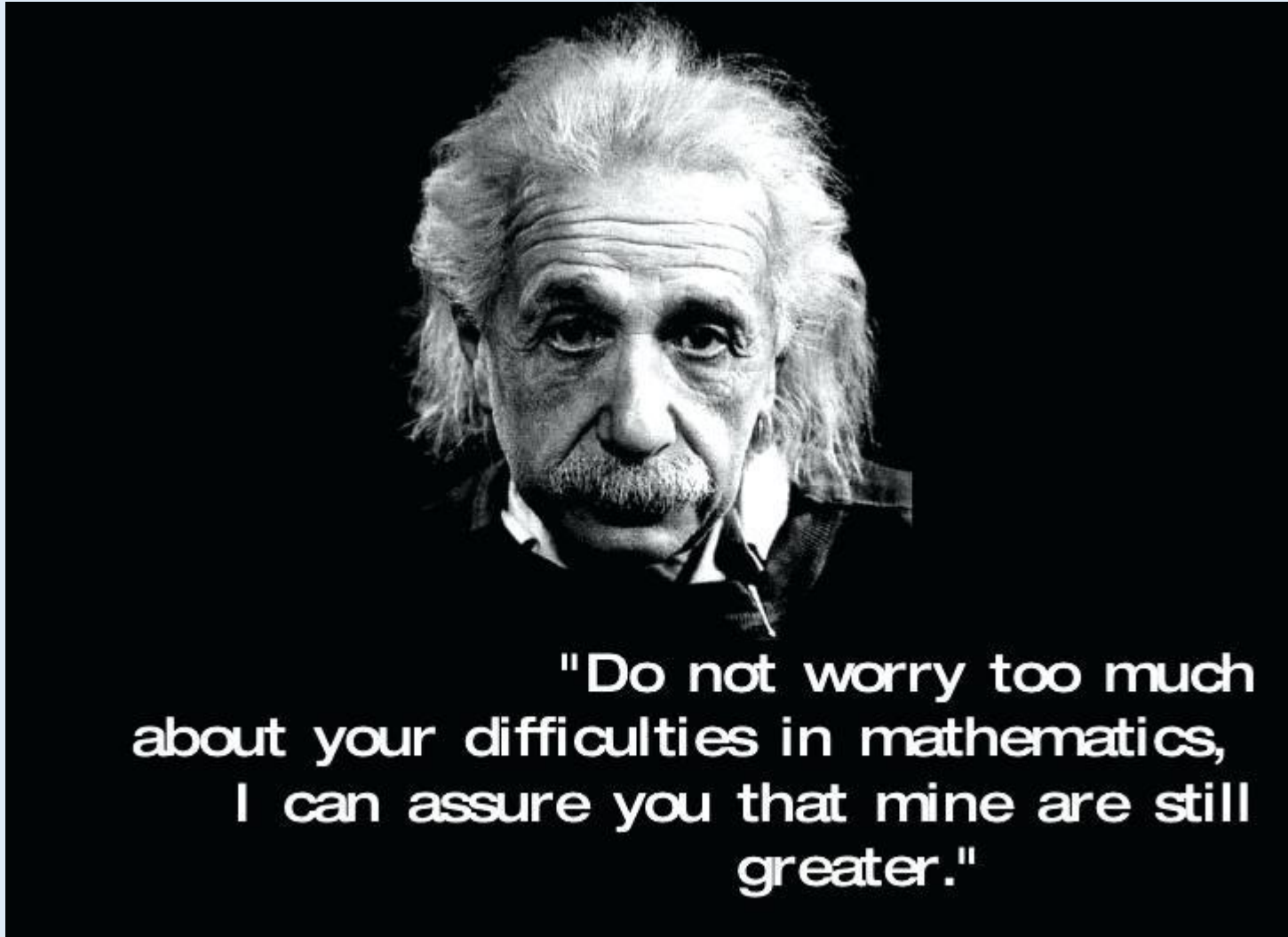
Maths Anxiety!

Negative perceptions of maths usually stem from unhappy experiences of maths at school.
If this was you we are truly sorry, but please try not to pass on these feelings to your child! ☺
We are here to support you and your child.

At Werneth we believe **everyone** can be a good mathematician.

We aim to build resilience, understanding and confidence.

We want all our students to experience the satisfaction and motivation that comes from mastering this beautiful and universal subject.

This **growth mindset** is at the heart of the **mastery approach** to learning mathematics.

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"Do not worry too much about your difficulties in mathematics, I can assure you that mine are still greater."

Mr P. Brighton – Subject Leader for Mathematics

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We said we'd support you so let's start by sharing a method for multiplying

How would you work out the following?

247 x 36 =

(no calculators!)

Multiplication Methods

Long multiplication: 247

                        x   36
                        —————
                        1482

                        7410

                        8892

Multiplication Methods

Grid Method:

x	200	40	7
30	6000	1200	210
6	1200	240	42

```
 6000
 1200
  210
 1200
  240
   42  +
_____
 8892
_____
```

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What is a Mastery Curriculum?
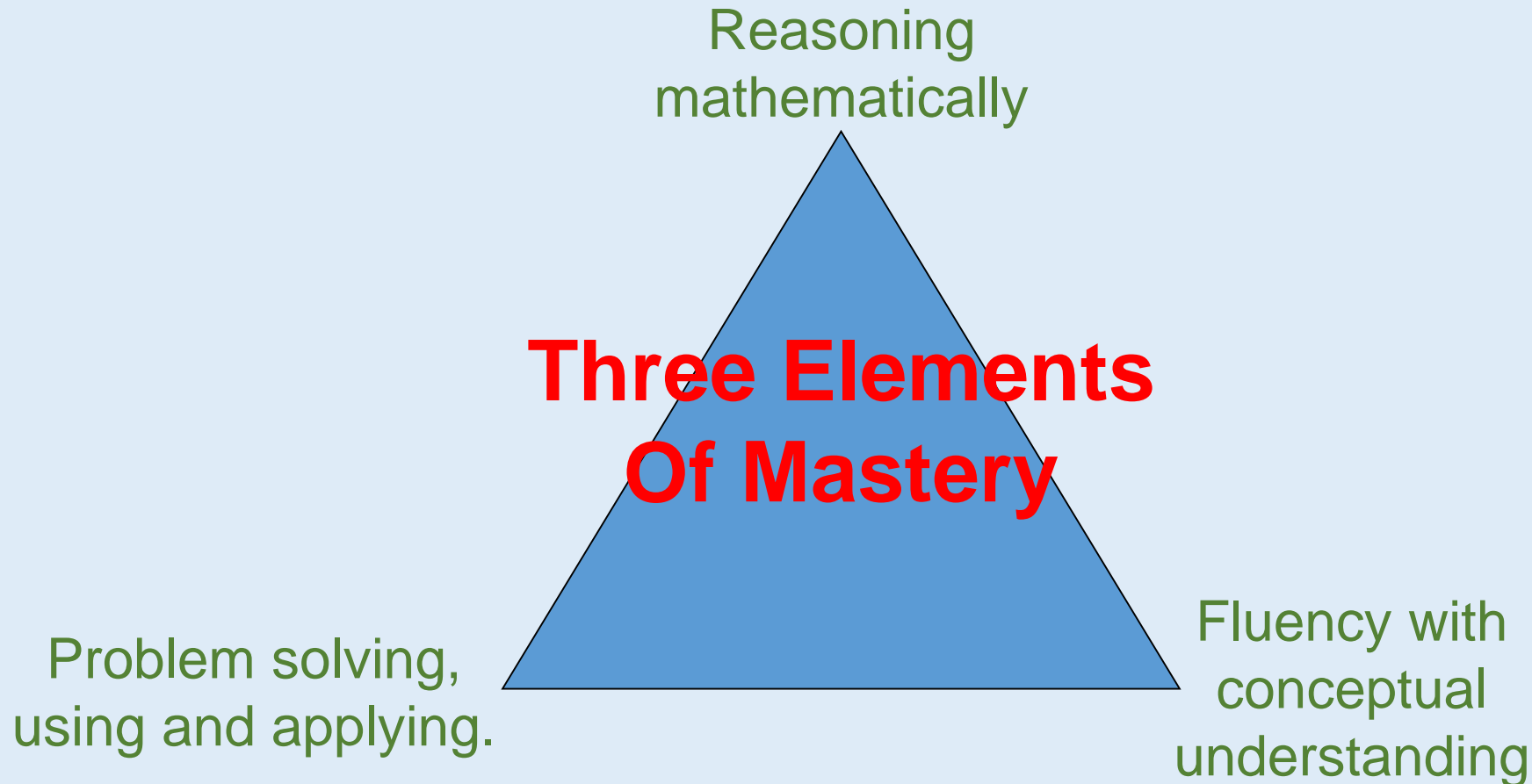**What is a Mastery Approach?**

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Mastery is an approach to teaching maths that aims to gradually build skills, knowledge, confidence and understanding.

The mastery approach values long term recall and understanding over short term performance

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Mastery of mathematics means a deep, long-term, secure and adaptable understanding of the subject.

Reasoning mathematically

Three Elements Of Mastery

Problem solving, using and applying.

Fluency with conceptual understanding

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Features of Mastery

- Regular quizzing / questioning / low-stakes assessments

- Misconceptions dealt with **immediately**

- Knowledge and understanding becomes stronger and more flexible as students are challenged to make connections between topics

- Higher attainers within a topic are given more complex problems to deepen their knowledge.

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Year 7 Maths – Scheme of Work

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1
Title	Place value, Addition and Subtraction	Multiplication and Division	Units of Metric Measure	FDP	Further Fractions
Pre Unit A	Number Bonds, doubles (8+8, 9+9 etc.), odd/even, basic numeracy booklet for the start of each lesson for the first half term covering these topics	Times tables, multiplication facts, basic divisibility rules (2,5,10)	Time, money, lengths and units	Represent 10 and 100ths on number lines	equivalent fractions and basic +-x/
Content A	Read and write whole numbers in words and figures, give value of digits	Estimate answers before calculating	scales	Interchange between fractions, decimals and percentages	multiply fractions including with integers and mixed numbers
	Order and compare whole numbers using place value, ascending and descending, including > < signs	Grid method must be taught, but pupils can choose their preferred method once they have been show the grid method	measuring in different units	equivalent fractions	divide fractions including with integers and mixed numbers
	Using given numbers, make the largest/smallest number	multiply integers (1 x 2 digit, 2 x 2 digit, x 3 digits etc.)	drawing in different units	simplify fractions	add and subtract fractions, including mixed numbers
	multiply/divide whole and decimals by powers of 10, use pv table if needed	multiply integers by decimals less than and greater than 1	estimating heights/lengths of objects	mixed and improper fractions	
	Round whole numbers to the nearest 10, 100, 1000	multiply decimals by decimals	using known measurements to estimate other objects (e.g heigh of man to estimate height of house)	compare FDP including mixed numbers and improper fractions	
	Round whole numbers to significant figures	divide integers, including dividing by 2 digit number	convert between units of measure		
	Mark the approximate position of a whole number of a numberline	divide decimals by integers			
		worded problems on multiply and divide			
		Find the area of squares and triangles only			
	Interpret calculator display (e.g. if an calculator displays 42.584 and the question is about money, what does this number represent? What if the question w...				
Learning evaluation A	Numbers Learning Evaluation	Multiplication and division Learning Evaluation	Metric Measures Learning evaluation	FDP Learning Evaluation	Further fractions Learning evaluation
DIRT A	DIRT Resources	DIRT Resources	DIRT Resources	DIRT Resources	DIRT Resources

Each term is roughly split into 2 units (each taking approximately 3 weeks)

Your child will be assessed twice during each unit at key learning points.

These assessments will be used to inform the teaching of the next few lessons.

There will be a formative assessment at the end of each 6 week block.

Progress will be fed back to you via reports at 3 points over the year.

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Year 7 Maths – Scheme of Work

What will they be learning this year?

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Title	Addition and Subtraction	Primes, multiples and factors	Developing geometric Reasoning	Calculating with Fractions	Percentages	Equality and Equivalence
Pre Unit B	Number bonds	times tables	properties of 2D shapes (not angles) and names of basic 3D shapes	equivalent fractions and basic +-x/	FDP Equivalence	Understanding algebraic terminology i.e. 2x = 2 times x
Content B	Understand that addition is commutative	factors multiples	Name edges, vertices, faces etc.	convert mixed numbers and improper fractions	percentage of amount	Understand equality
	Add with and without a concrete representation and place value tables if needed, including with decimals	HCF/LCM from listing	lines of symmetry and rotational symmetry	write one fraction as a fraction of another	percentage change	Use fact families
	Add mentally (e.g. chunking)	primes and basic indices in preparation for prime factor decomposition	Use and understand labelling notation for angles	Add and subtract fractions with same denominator	percentage increase/decrease	Form and solve one step equations
	Understand that subtraction is not commutative	Prime factor decomposition	Draw angles	Add and subtract fractions one deonimantor a multiple of the other	express one quantity as a percentage of another	Understand equivalence of algebraic expressions
	Subtract with and without a concrete representation and place value tables if needed, including with decimals	HCF/LCM from prime factor decomposition	Classify angles	Add and subtract fractions different denominator		Collect like terms
	Subtract mentally	Problem solving	recognise types of triangles	Add and subtract fractions and decimals e.g. 3/4+0.2		
	Compare negative numbers		Calculate and use angle at a straight line, point and vertically opposite			
	Symmetry of subtraction (clip 38 HM)		Calculate missing angles in triangles and quadrilaterals			
	Add and subtract negative numbers					
	Problems with addition and subtraction					
	Find the perimeter of plane shapes					
	Interpret calculator display (e.g. if an calculator displays 42.584 and the question is about money, what does this number represent? What if the question was about length, what does it					
Learning evaluation B	Addition and subtractions Learning Evaluation	Primes, multiples and factors Learning Evaluation	Developing Geometric Reasoning Learning Evaluation	Calculating fractions Learning Evaluation		
DIRT B	DIRT Resources	DIRT Resources	DIRT Resources	DIRT Resources	DIRT Resources	DIRT Resources
Enrichment						
End of unit	End of unit Assessment	End of unit Assessment	End of unit Assessment	End of unit Assessment		

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Year 7 Maths - Homework

1) Homework is all on Hegarty Maths and is set every Monday and due every Friday

2) Each homework consists of a short video followed by a set of questions

3) Students should aim to achieve 80% on the questions (the video mirrors the questions)

4) If they are stuck, they can message us within Hegarty

Year 7 Maths - Homework

1 - Simple Addition & its Meaning

due 13/9
completed 11/9

Video notes

Big Idea: Addition

• What is 2 more than 3?

$$3 + 2 = 5$$

← easy to imagine with small numbers, our brains know to add them.

• What is 27 more than 35?
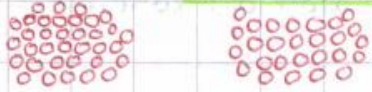
← Our brain finds this hard to see the answer quickly with bigger numbers
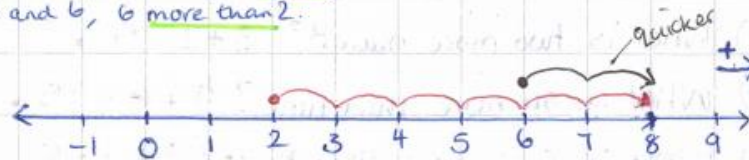
We use addition to work this out

Example 1

$2 + 6$ → $2 + 6 = 8$
→ $6 + 2 = 8$

Addition is **commutative** (it can be done in any order).

In words: 2 add 6, 2 and 6, 2 plus 6, the sum of 2 and 6, 6 more than 2.

Number line

$$-1 \quad 0 \quad 1 \quad 2 \quad 3 \quad 4 \quad 5 \quad 6 \quad 7 \quad 8 \quad 9$$

quicker

Keywords
Addition
Add
Plus
More than
Count on
Sum
Number line
Positive integer.

Example 2: Use symbols to express the following and work out the answers

(i) "2 more than 3" $3 + 2 = 5$

(ii) "3 more than 2" $2 + 3 = 5$ ← **commutative** so same answer

(iii) "eight plus one" $8 + 1 = 9$

(iv) "the sum of two and three" $2 + 3 = 5$

Summary

$1 + 9$ → addition is **commutative** so we can change this to $9 + 1$ which is quicker to work out when counting on

Quiz Notes

(1) What is 5 more than 7? $7 + 5 = 11$ ✗ $7 + 5 = 12$ ✓

(2) What is 5 more than 5? $5 + 5 = 10$ ✓

(3) What is 6 more than 9? $9 + 6 = 14$ ✗ $9 + 6 = 15$ ✓

(4) What is two more than 3? $3 + 2 = 5$ ✓

(5) What is six more than nine? $9 + 6 = 15$ ✓

(6) What is five more than three? $3 + 5 = 8$ ✓

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Ways you can support…

Be involved – ask your child what they're learning and how they're doing.

Let your child's teacher know of any difficulties with homework.

Show My Homework and **Edulink** are both good ways to message teachers.

(If you need logins, get in touch with your child's form tutor)

If you are concerned your child is struggling with a topic (or if they are not being sufficiently challenged), please get in touch.

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Get the 'Basics' Sorted

Times tables matter – this has always been true!

Multiplication underpins so much GCSE maths, it is well worth investing time in making sure your child can recall their times table facts.

The single biggest factor in building enjoyment and success in maths is secure knowledge of multiplication facts.

Test them, encourage them to test themselves, use apps, websites, paper, songs!

Working memory is limited – the better they know their tables the more mental energy they have available to learn the new stuff!

Four rules and **number bonds** are also really helpful.

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Maths Email Addresses

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