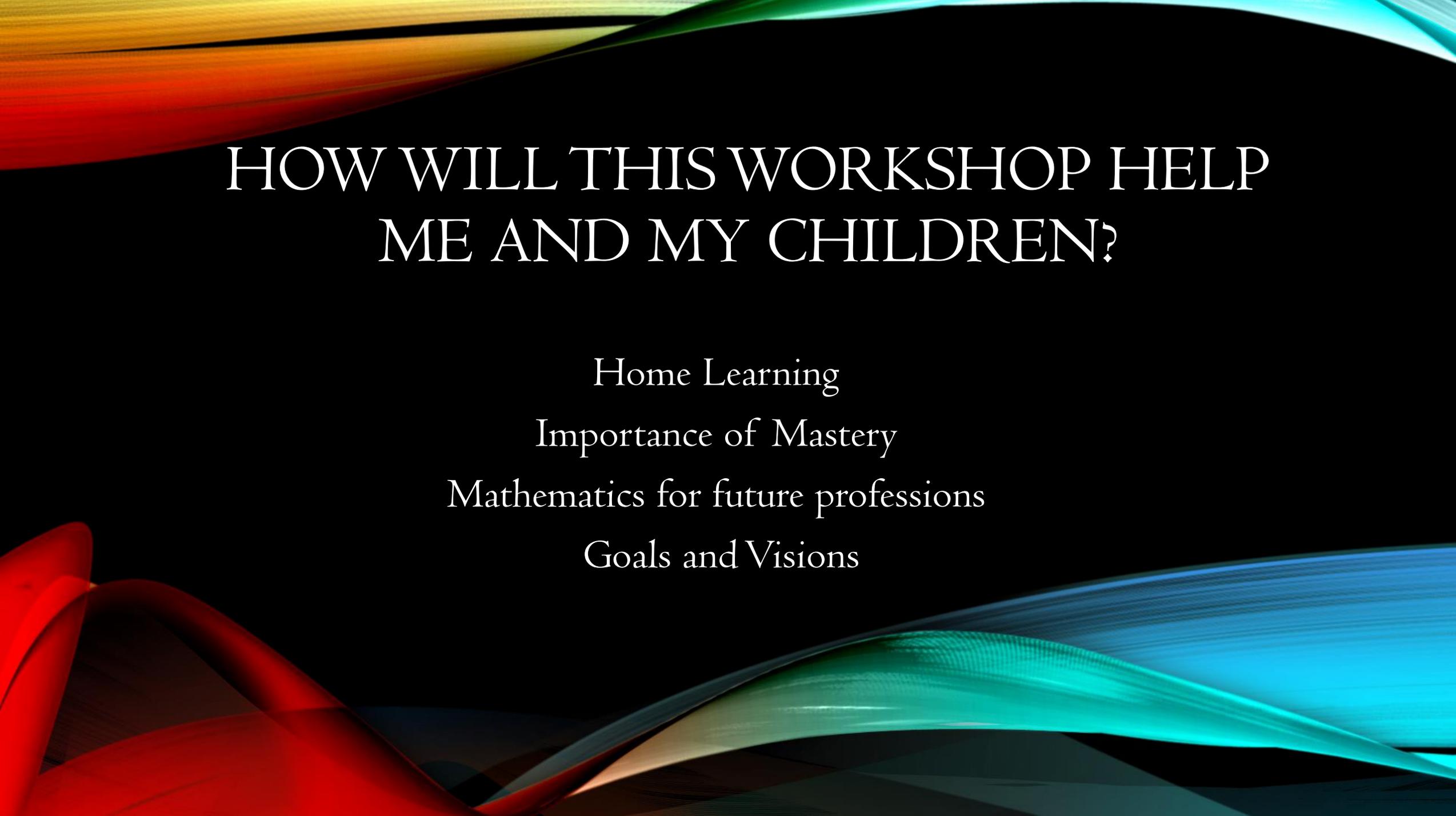


MATHS PARENT WORKSHOP

Tuesday 24th November 2020

"Millions saw the apple fall, but Newton asked why."



HOW WILL THIS WORKSHOP HELP ME AND MY CHILDREN?

Home Learning

Importance of Mastery

Mathematics for future professions

Goals and Visions

Mathematics is vitally important to our **children** and ourselves

“Mathematics is not about numbers, equations, computations, or algorithms: it is about understanding.”

“Mathematics expresses values that reflect the cosmos, including orderliness, balance, harmony, logic, and abstract beauty.”

“Black holes were never observed – they were inferred via mathematics. It’s not always what you see but what you can deduce from logical reasoning – that is maths.”

How do Ofsted want to see the teaching of mathematics in 'successful' schools?



Report summary

Good practice in primary mathematics: evidence from 20 successful schools

Mathematics is all around us; it underpins much of our daily lives and our futures as individuals and collectively. As the Secretary of State for Education said last year:

'... mathematical understanding is critical to our children's future. Our economic future depends on stimulating innovation, developing technological breakthroughs, making connections between scientific disciplines. And none of that is possible without ensuring more and more of our young people are mathematically literate and mathematically confident. Mathematical understanding underpins science and engineering, and it is the foundation of technological and economic progress. As information technology, computer science, modelling and simulation become integral to an ever-increasing group of industries, the importance of maths grows and grows.'

These are all attributes we capture in our teaching at Stockwell Primary.

What is the most important part of a child's mathematical journey?

DISCOVER AND CREATE.
USE NUMBER CONCEPTS AND SKILLS TO EXPLORE.
DEVELOP CONFIDENCE IN THEIR ABILITY TO THINK THINGS THROUGH.
SOLVE MEANINGFUL PROBLEMS.
CREATE CONNECTIONS TO HELP DISCOVER RELATIONSHIPS (E.G. CHARACTERISTICS).

MATH IS AN IMPORTANT **PART** OF LEARNING FOR CHILDREN IN THE EARLY YEARS BECAUSE IT PROVIDES VITAL **LIFE** SKILLS. THEY **WILL** HELP CHILDREN PROBLEM SOLVE, MEASURE AND DEVELOP THEIR OWN SPATIAL AWARENESS, AND TEACH THEM HOW TO USE AND UNDERSTAND SHAPES.

YEAR 1

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6						
	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	Number: Place Value (within 10)				Number: Addition and Subtraction (within 10)					Geometry: Shape	Number: Place Value (within 20)	
Spring	Consolidation	Number: Addition and Subtraction (within 20)			Number: Place Value (within 50)			Measurement: Length and Height		Measurement: Weight and Volume		Consolidation
Summer	Consolidation	Number: Multiplication and Division			Number: Fractions		Geometry: Position and Direction	Number: Place Value (within 100)		Measurement: Money	Measurement: Time	

YEAR 3

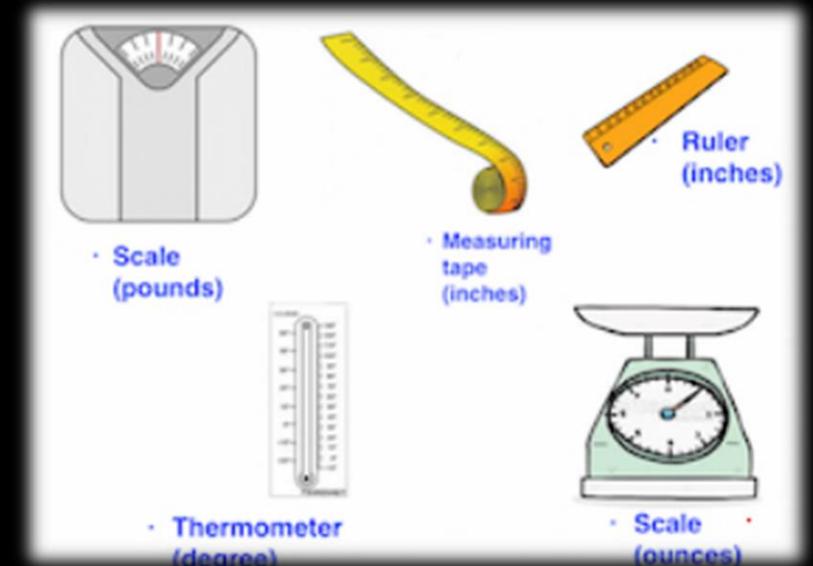
Maths Year 1		Year 2	Year 3	Year 4	Year 5	Year 6							
		Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	Number: Place Value			Number: Addition and Subtraction				Number: Multiplication and Division					
Spring	Number: Multiplication and Division			Measurement: Money	Statistics		Measurement: Length and Perimeter			Number: Fractions		Consolidation	
Summer	Number: Fractions			Measurement: Time			Geometry: Properties of Shape		Measurement: Mass and Capacity			Consolidation	

YEAR 5

Maths		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6						
		Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	Number: Place Value			Number: Addition and Subtraction		Statistics		Number: Multiplication and Division			Measurement: Perimeter and Area		
	Number: Multiplication and Division			Number: Fractions						Number: Decimals and Percentages		Consolidation	
Spring	Consolidation	Number: Decimals			Geometry: Properties of Shape		Geometry: Position and Direction		Measurement: Converting Units		Measurement: Volume		
	Number: Decimals			Geometry: Properties of Shape		Geometry: Position and Direction		Measurement: Converting Units		Measurement: Volume			
Summer	Number: Decimals			Geometry: Properties of Shape		Geometry: Position and Direction		Measurement: Converting Units		Measurement: Volume			
	Number: Decimals			Geometry: Properties of Shape		Geometry: Position and Direction		Measurement: Converting Units		Measurement: Volume			

MEASUREMENT

- This category includes ordering and comparing objects to figure out time, weight, length and graphing. For example, Kyle held up his block tower and said, “this is taller than me.” James looked towards Kyle and pointed towards the block tower. “Me too, it’s taller than me,” he said as he looked up towards the top of the block tower. Kyle and James demonstrated how they could compare how tall the block tower is to each of their heights.



NUMERACY

- It's the ability to use mathematics in everyday life. **Numeracy** involves skills that aren't always taught in the classroom – the ability to use numbers and solve problems in real life. It **means** having the confidence and skill to use numbers and mathematical approaches in all aspects of life
- This category includes saying number words, writing numbers, counting, and recognizing a number of objects. For example, “1, 2, 3, 4, 5, 6, 7, 8, 9, 10,” counted Liam as he pointed towards the cars lined up on the table. “I have more than you,” he said as he pointed towards Melissa’s cars lined up. “1, 2, 3, 4, 5, 6...oh yeah,” she said as she pointed towards her cars lined up next to Liam’s cars. Liam and Melissa demonstrated counting and recognizing the number of cars they each had to compare each other’s quantities.

PATTERN AND SHAPE

- This category includes identifying or creating patterns and shapes. For example, Jeremy and Mira sat on the carpet next to one another in the block area. Jeremy placed a magnetic block together. "I'm making a house," he said as he placed more magnetic blocks together. He took a magnetic block apart and said, "this needs to be over here," and pointed at his magnetic blocks on the floor. Mira looked towards Jeremy's magnetic blocks and pointed down toward her magnetic blocks. "I'm making a pizza," she said. Jeremy and Mira created patterns and shapes with 2D magnetic blocks to build symmetrical structures.

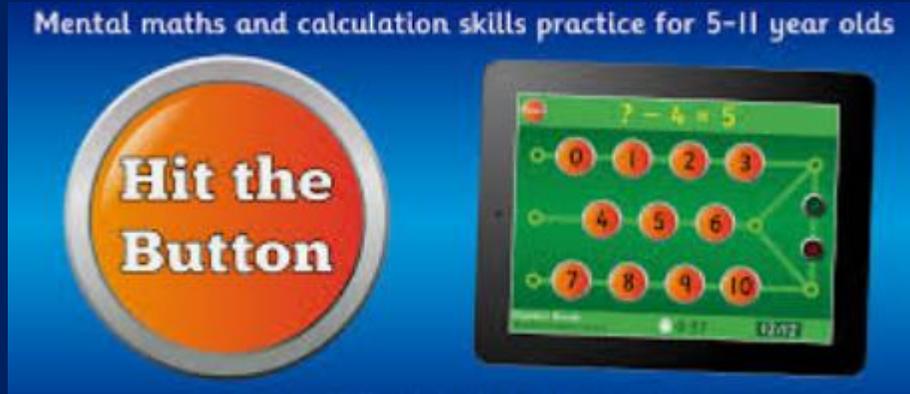
CLASSIFICATION

Classification means putting objects into groups (classes) based on some property they have. If you are given a group of things, such as triangles or people, you can **classify** them based on some property they have. For example you might **classify** people by eye colour.

This category includes grouping or sorting objects by characteristics. For example, Casey placed a red triangle into the red bowl. She picked up a blue square and placed the blue square into the blue bowl. "The blue triangle goes in the blue bowl," she said.

- Casey was classifying by sorting the blue and red shapes into the corresponding same coloured bowls.

TIMES TABLES



Ks1 – splat or hit the button, counting up in 5s and 2s – number line

Y3/4 – speed test – chanting in order $1 \times 5 = 5$, $2 \times 5 = 10$

Y5/6 – randomisation

VOCABULARY

Mathematical vocabulary is an important part of developing numerate children. This is recognised in the National Curriculum, both in its aims and its emphasis on spoken language.

Aims in learning mathematics (from the National Curriculum)

“Mathematics is an interconnected subject in which pupils need to be able to move fluently between representations of mathematical ideas...Pupils should make rich connections across mathematical ideas to develop fluency.”

Spoken language

(from the National Curriculum)

“The national curriculum for mathematics reflects the importance of spoken language in pupils’ development...The quality and variety of language that pupils hear and speak are key factors in developing their mathematical vocabulary and presenting a mathematical justification, argument or proof.”

Maths dictionaries are also a great way to help children build their mathematical vocabulary and the pictures help children build a conceptual image of what they numbers actually mean in real life.

FLUENCY

Fluency – **Mathematical fluency** is the ability to quickly and accurately recall **mathematical** facts and concepts. It's made up of 4 key parts – accuracy, flexibility and appropriate response, efficiency and number sense.

Fluency saves time

Mathematical fluency saves energy

Math fluency builds confidence and reduces mathematics anxiety

Early mathematical fluency is an indicator of later success

Students who have better fluency in their early education are likely to perform better as they enter secondary school

By getting students to practice fluency, you're strengthening the mind muscles they need to do heavier lifting and for longer.

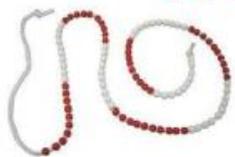
APPLICATION

Show a pictorial e.g. bar model and then break out and come up with ideas for how to use this visual linked to different topics

Group 3 - Application – *Thinking laterally: how do you apply things in multiple ways?*

PRACTICAL RESOURCES

What are concrete resources?



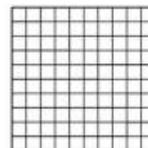
Bead strings



Bar models



Fraction towers



100 grids

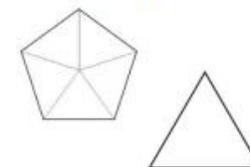


Number lines

Cuisenaire rods



Shapes



Multilink cubes



Dienes blocks



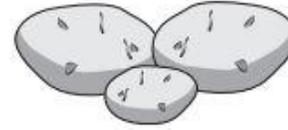
How many different activities can you come up with using just this practical resource? In Break out groups
Where resources could be found if they don't have them

PROBLEM SOLVING

+	→	Plus/ add
-	→	Minus/ take
X	→	Multiply/ times
÷	→	Divide
=	→	Equals
<	→	Less than
>	→	More than
≤	→	Less than/ equals to
≥	→	Greater than/ equals to
%	→	Percentage



16



potatoes
£1.50 per kg



carrots
£1.80 per kg

Jack buys $1\frac{1}{2}$ kg of potatoes and $\frac{1}{2}$ kg of carrots.

How much **change** does he get from **£5**?

Show
your
method

2 marks

To problem solve, fluency and application need to be embedded. Here is a problem on the board. Discuss all the mathematical skills a child would need in order to solve this problem where to find problems – teaching resources

Cross curricular links

At Stockwell, we try to link various areas of the curriculum together. For example, a maths lesson may also attempt to link in with other topics children are learning. This serves to not only allow children to apply their knowledge in different areas but to also see themselves in every part of our diverse curriculum.



Maths question linked –

On the Empire Windrush, there were 1000 passengers. 10% were from Jamaica, $\frac{2}{3}$ from Trinidad and the rest from other islands. Each passenger paid £15 per ticket. The company needed £800 to break even.

Mastery – What do you think it means?

Pick a statement – in the chat type your answer.

1. Being able to calculate a sum accurately.
2. The ability to apply, explain and adapt to problems.

I Can
MASTER
By
EDUCATIONREGINERS.COM
Maths!

-  By explaining it.
-  By drawing it.
-  By showing it in different ways.
-  By teaching it.

Mastery -

“In mathematics, you know you've mastered something when you can apply it to a totally new problem in an unfamiliar situation.”

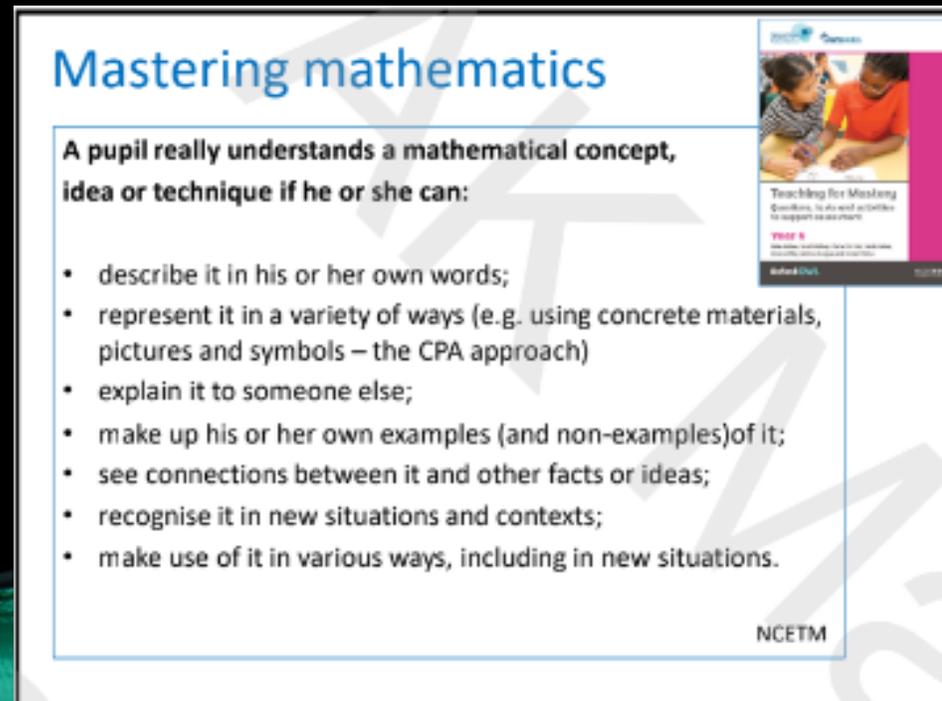
The DfE's view:

The mastery approach to maths focuses on whole-class teaching, developing a deep understanding of maths.

It's a common misconception that children are simply taught by rote; while there's an element of drilling, the method is also highly interactive. 'All pupils are encouraged by the belief that by working hard at maths, they can succeed,' says the DfE's spokesperson.

A typical maths mastery lesson is led by the teacher, with all of the pupils in the class working together on the same tasks at the same time.

Children use objects and pictures to physically represent mathematical concepts (the concrete > pictorial > abstract approach), alongside numbers and symbols – for example, using Lego bricks to add and subtract numbers. This helps them visualise abstract ideas, and as they become more proficient, they will gradually stop relying on physical props



Mastering mathematics

A pupil really understands a mathematical concept, idea or technique if he or she can:

- describe it in his or her own words;
- represent it in a variety of ways (e.g. using concrete materials, pictures and symbols – the CPA approach)
- explain it to someone else;
- make up his or her own examples (and non-examples) of it;
- see connections between it and other facts or ideas;
- recognise it in new situations and contexts;
- make use of it in various ways, including in new situations.

NCETM

Teaching for Mastery
Questions, to do and activities
to support an answer
YEAR 6
Worked Out

Mastery – what about different abilities?

Will less able children be left behind?

If your child struggles with maths, you might well be concerned that they won't keep up with whole-class teaching. However, the DfE says that the method is suitable for children of most abilities. 'Every step of a lesson is deliberate, purposeful and precise,' the spokesperson says. 'If children are struggling with a concept, more time is spent supporting and building their understanding.' Those who are stronger are also catered for and are able to deepen their understanding of the principles by being given challenging questions, as well as demonstrating to the rest of the class.'

Mastery – The Federation's Core beliefs

We want to ensure that their aspirations for every child's mathematics success become reality

Success in mathematics for every child is possible

Mathematical ability is not innate, and is increased through effort

Mastery – Bolstering Aspirations

Effort-based ability – growth mindset

Intelligence
can grow

Effort leads to
success

When the going
gets tough ... I
get smarter

I only need to
believe in
myself

Success
is the
making
of
targets

When the going
gets tough ... dig in
and persist

Innate ability

Intelligence is
fixed

Ability leads to
success

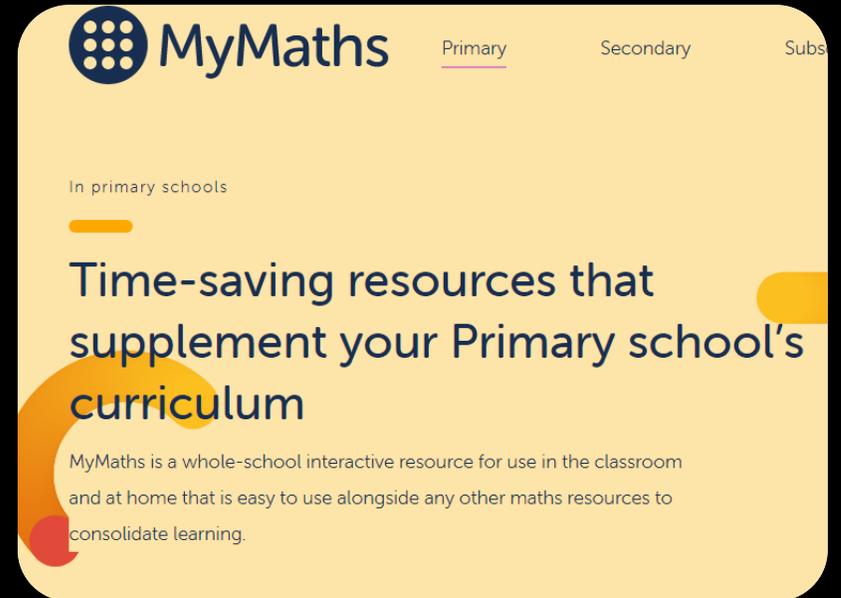
When the going
gets tough ... I
get found out

I need to be
viewed as
able

Success is
doing
better
than
others

When the going
gets tough ... give
up, it's hopeless

Home learning



Home learning

admin

Have you seen our new Secondary support videos? Please help shape their development by letting us know what you think.

Find Student

Help Log out

All Classes > Y3B

<input type="checkbox"/>	Task or activity	Type	Created	Completed	Start	Due	Feedback
<input type="checkbox"/>	Comparing length		20/11/20	1/6	20/11/20	11/12/20	<input type="button" value="Leave feedback"/>
<input type="checkbox"/>	Comparing measures		20/11/20	1/6	20/11/20	11/12/20	<input type="button" value="Leave feedback"/>
<input type="checkbox"/>	Measures		20/11/20	10/23	20/11/20	11/12/20	<input type="button" value="Leave feedback"/>
<input type="checkbox"/>	Units of measure		20/11/20	10/23	20/11/20	11/12/20	<input type="button" value="Leave feedback"/>
<input type="checkbox"/>	Fractions 1 - OW		13/11/20	1/6	13/11/20	27/11/20	<input type="button" value="Leave feedback"/>

MyMaths is a fantastic resource we utilise at Stockwell to set homework and other tasks for children. We are able to address, readdress and introduce new concepts to children; tailor learning for the individual and monitor progress and areas of misconception.

Home learning

Select a task

National Curriculum (Eng) ▾

Year 5 booster ▾

Select a topic ... ▾

- All homeworks (50)
- All worksheets (6)
- All tasks (56)
- Number and place value
- Addition and subtraction
- Multiplication and division
- Fractions
- Measurement
- Geometry

Select dates

From: 24/11/2020 

To: 01/12/2020 

Leave a message

Q1	Q2	%
12 / 16	0 / 12	43
16 / 16	12 / 12	100
14 / 16	6 / 12	71
16 / 16	6 / 12	79

MyMaths allows teachers to set a wide variety of question types, at different levels. We are able to interact with pupils in order to better cater to their need, respond to misconceptions and praise excellent work. It is a very powerful tool which enables us to gather data on our children's learning journey and then adapt our teaching in order to help them achieve their full potential.

Home learning

admin

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Find Student

Help Log out

All Classes > Y3B

<input type="checkbox"/> Task or activity	Type	Created	Completed	Start	Due	Feedback
<input type="checkbox"/> Comparing length		20/11/20	<input type="button" value="1/6"/>	20/11/20	11/12/20	<input type="button" value="Leave feedback"/>
<input type="checkbox"/> Comparing measures		20/11/20	<input type="button" value="1/6"/>	20/11/20	11/12/20	<input type="button" value="Leave feedback"/>
<input type="checkbox"/> Measures		20/11/20	<input type="button" value="10/23"/>	20/11/20	11/12/20	<input type="button" value="Leave feedback"/>
<input type="checkbox"/> Units of measure		20/11/20	<input type="button" value="10/23"/>	20/11/20	11/12/20	<input type="button" value="Leave feedback"/>
<input type="checkbox"/> Fractions 1 - OW		13/11/20	<input type="button" value="1/6"/>	13/11/20	27/11/20	<input type="button" value="Leave feedback"/>

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Home learning

Maths teachers recognise how fundamental times table recall speed is to later success in maths lessons; yet it's not always easy finding engaging ways to do daily practice. TT rock stars (the paper version) has been used in many schools across the UK since 2010 and the feedback is that pupils and teachers love it. I'm confident everyone will enjoy the online version even more! Incorrect answers are always immediately corrected in front of the pupil so that they start to associate the correct answer to every question.



Times Tables Rockstars is an incredible resource we have access to that allows children to master their TTs and in a fun manner!