

How we teach and learn maths at St. Mark's

Parent presentation

4th November 2022

What will be covered this morning

- The essence of teaching for mastery in maths - what it is and why we teach this way
- What mastery looks like across the school
- What mastery looks like for Years 1 and 2
- What you can do to support at home

The essence of teaching for mastery - what and why

- Everyone can do maths
- If you work hard at maths you can succeed
- Whole class interactive teaching
- **Procedural + conceptual fluency** = deep understanding
- Key facts are learnt to **automaticity**

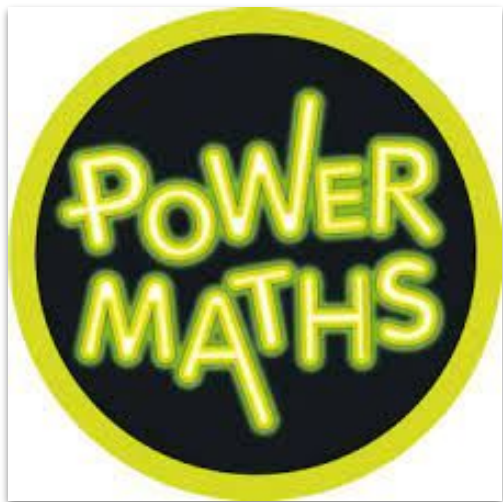
What mastery looks like across the school

- What is fluency?
- Students' ability to "... provide correct answers quickly ... use facts and computation strategies they know to efficiently determine answers that they do not know." (Russell, 2000)
- Three types of fluency: conceptual, procedural and factual

What does this look like for your Year 1 or Year 2 child?

- Develop **confidence and mental fluency with whole numbers**, counting and place value. (15 is made up of 1 ten and 5 ones)
- Recognise, describe, draw, compare and sort different shapes and use the related vocabulary.
- Use a range of measures to describe and compare different quantities such as length, mass, capacity/volume, time and money.
- By the end of year 2, pupils **should know the number bonds to 20** (e.g. $13 + 7 = 20$; $4 + 16 = 20$, etc)
- Read and spell mathematical vocabulary

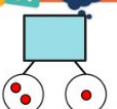
What mastery looks like across the school



What mastery looks like across the school - current focus

- Number@9
- Quick quizzes
- Number facts practice, times tables practice using chanting, songs, Times Tables Rock Stars

Flashback 4 Year 1 | Week 5 | Day 4

1) Draw the whole. 

2) What colour is the 2nd circle? 


3) Draw 4 circles. 

4) What number comes next? 7, 6, 5, 



Let's chant our 3's

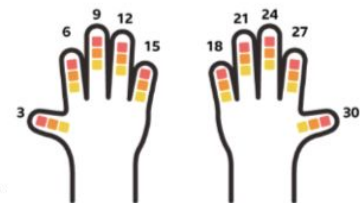
3, 6, 9, 12, 15, 18, 21, 24, 27, 30.

Now, write them down on your whiteboard.

$$1 \times 3 =$$

$$2 \times 3 =$$

$$3 \times 3 =$$



Calculation policy

Year Group	Skill	Representations and Models	Concrete The 'doing' stage	Pictorial The 'seeing' stage	Abstract The 'symbolic' stage
1	Add two 1-digit numbers to 10 (aggregation & augmentation)	Part- whole model Bar model Number shapes	 (support augmentation)	 	$4 + 3 = 7$

What does this look like for your Year 1 or Year 2 child?

How we use the tens frame

<https://www.ictgames.com/mobilePage/tenFrame/index.html>

How we use the part-part-whole or 'cherry' model

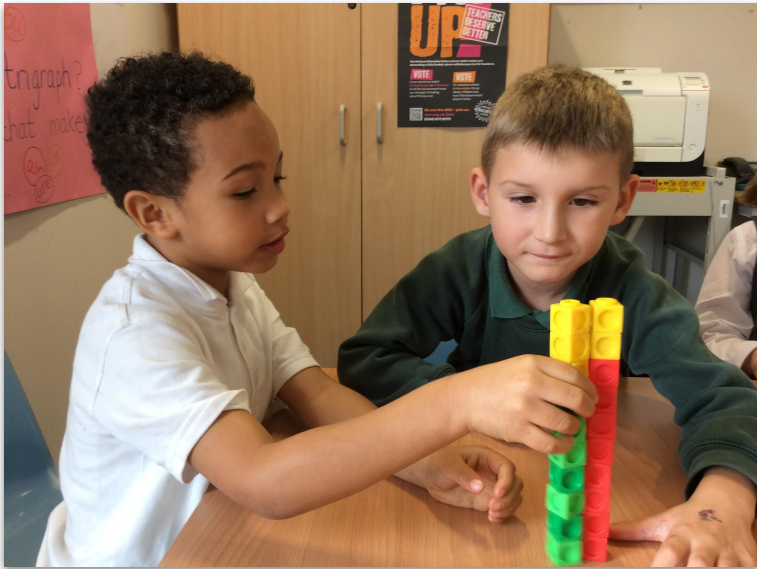
<https://www.ictgames.com/mobilePage/partPartWhole/index.html>

How we use the bar model

<https://www.ictgames.com/mobilePage/fireFly/index.html>

Examples of Year 1 learning

Here are some Year 1 children using multilink cubes to make 10.



Examples of Year 1 learning

1 Find three different ways to make 4



$$\boxed{4} + \boxed{0} = 4$$

$$\boxed{1} + \boxed{3} = 4$$

$$\boxed{2} + \boxed{2} = 4$$

2 Find three different ways to make 6

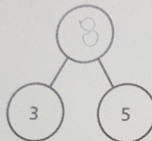
$$\boxed{3} + \boxed{3} = 6$$

$$\boxed{1} + \boxed{5} = 6$$

$$\boxed{4} + \boxed{2} = 6$$

2 Complete the part-whole models and sentences.

a)

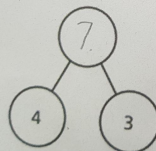


$\boxed{3}$ is a part.

$\boxed{5}$ is a part.

$\boxed{8}$ is the whole.

b)



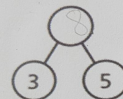
$\boxed{4}$ is a part.

$\boxed{3}$ is a part.

$\boxed{7}$ is the whole.

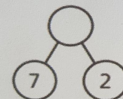
2 Complete the part-whole models and addition sentences.

a)



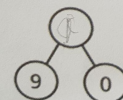
$$3 + 5 = \boxed{8}$$

b)



$$7 + 2 = \boxed{9}$$

c)



$$\boxed{9} + \boxed{0} = \boxed{9}$$

Examples of Year 2 learning

Number bonds to 20

What number bonds to 20 are represented?

$10 + 10 = 20$

$7 + 13 = 20$

$10 + 10 = 20$

$13 + 7 = 20$

Using the ten frames and counters to help you.

Complete the fact family.

a) $15 + 2 = 17$ $17 - 15 = 2$

$17 = 15 + 2$ $2 = 17 - 15$

$2 + 15 = 17$ $15 = 17 - 2$

Write a numeral to complete part whole models.

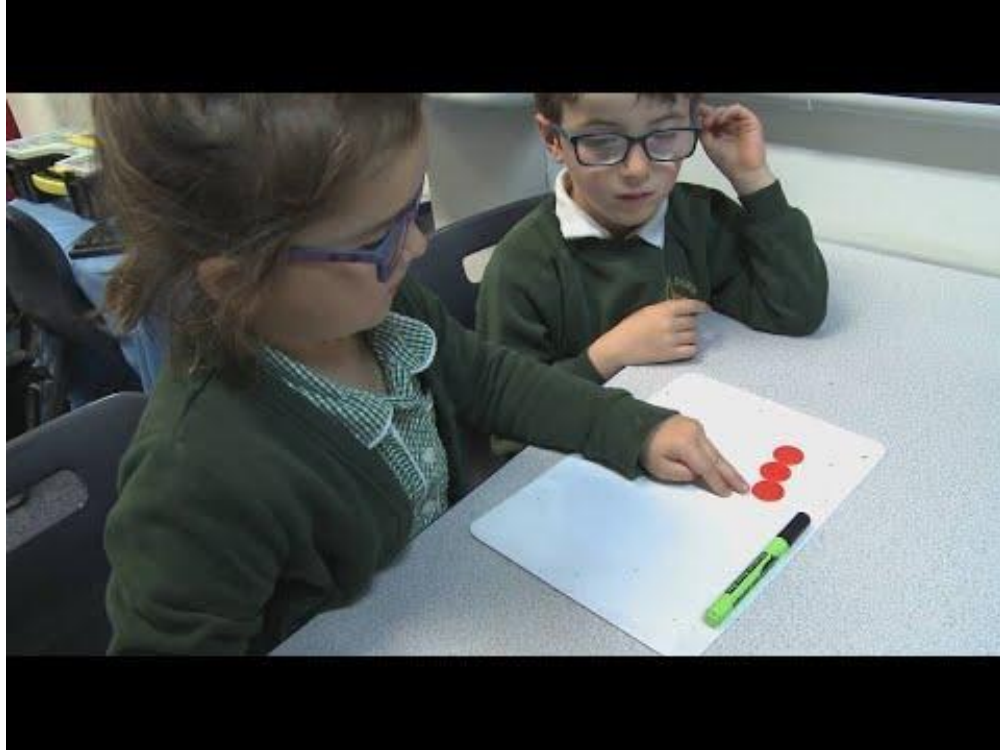
a)

A part-whole model with a top circle containing the number 46. It branches down to two bottom circles. The left bottom circle contains four vertical bars, each with four yellow dots, representing 4 groups of 4, with the numeral 4 written below it. The right bottom circle contains six red dots arranged in two groups of three, with the numeral 6 written below it.

b)

A part-whole model with a top circle containing the number 28. It branches down to two bottom circles. The left bottom circle contains two groups of eight red dots arranged in a 2x4 grid, with the numeral 20 written to its right. The right bottom circle contains two groups of four red dots arranged in a 2x2 grid, with the numeral 8 written to its right.

What does this look like for your Year 1 or Year 2 child?



Key facts that your child must learn to automaticity by the end of Year 2

Reducing
working memory
by having
factual recall.

Adding 1

Bonds to 10

Adding 10

Bridging/compensating

Adding 2

Adding 0

Doubles

Near doubles

Y1 facts

Y2 facts

+	0	1	2	3	4	5	6	7	8	9	10
0	0 + 0	0 + 1	0 + 2	0 + 3	0 + 4	0 + 5	0 + 6	0 + 7	0 + 8	0 + 9	0 + 10
1	1 + 0	1 + 1	1 + 2	1 + 3	1 + 4	1 + 5	1 + 6	1 + 7	1 + 8	1 + 9	1 + 10
2	2 + 0	2 + 1	2 + 2	2 + 3	2 + 4	2 + 5	2 + 6	2 + 7	2 + 8	2 + 9	2 + 10
3	3 + 0	3 + 1	3 + 2	3 + 3	3 + 4	3 + 5	3 + 6	3 + 7	3 + 8	3 + 9	3 + 10
4	4 + 0	4 + 1	4 + 2	4 + 3	4 + 4	4 + 5	4 + 6	4 + 7	4 + 8	4 + 9	4 + 10
5	5 + 0	5 + 1	5 + 2	5 + 3	5 + 4	5 + 5	5 + 6	5 + 7	5 + 8	5 + 9	5 + 10
6	6 + 0	6 + 1	6 + 2	6 + 3	6 + 4	6 + 5	6 + 6	6 + 7	6 + 8	6 + 9	6 + 10
7	7 + 0	7 + 1	7 + 2	7 + 3	7 + 4	7 + 5	7 + 6	7 + 7	7 + 8	7 + 9	7 + 10
8	8 + 0	8 + 1	8 + 2	8 + 3	8 + 4	8 + 5	8 + 6	8 + 7	8 + 8	8 + 9	8 + 10
9	9 + 0	9 + 1	9 + 2	9 + 3	9 + 4	9 + 5	9 + 6	9 + 7	9 + 8	9 + 9	9 + 10
10	10 + 0	10 + 1	10 + 2	10 + 3	10 + 4	10 + 5	10 + 6	10 + 7	10 + 8	10 + 9	10 + 10

Is your child ready for Year 2?

Use the numbers, 6, 7, 8, 9 and 10 to complete the set of expressions. You can use a number more than once.

_ > _ _ < _ _ = _

$$10 + 3 + 4 = _ + 10$$

$$19 = _ + 10 + 6$$

$$11 = 5 + 1 + _$$

Is your child ready for Year 3?

$$68 = _ _ + _ _$$

Complete the equation using the following digits:

2 4 5 3

Can you find another solution?

Find all the different ways to correctly complete this equation. (Clue - there are more than three!)

$$_2 = 4_ + 4_$$

Home learning for Years 1 and 2

- Support but don't do it for them.
- If child is spending more than **20** minutes on their home learning, stop and ask teacher in school.
- **Time** is a skill that especially needs to be practised as much as possible at both school and home.

Home learning for Year 1

There are two play modes in NumBots that serve different purposes.

1. Story Mode for Understanding In Story Mode

2. Challenge Mode



Home learning for Year 2

Focus: 2x, 5x and 10x tables and the related division facts



Thank you



Q&As