

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

Parent presentation

11th 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 3 and 4
- 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 fluency + conceptual understanding**
- Key facts are learnt to **automaticity**

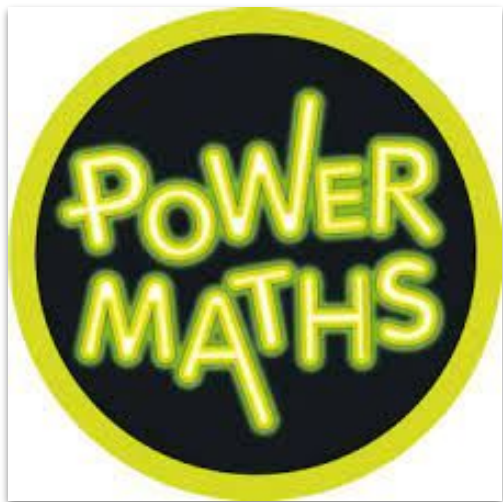
What mastery looks like across the school

- 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 3 or 4 child?

- Starting point: **confidence and mental fluency with whole numbers, counting and place value**
- Now, fluency with additive and multiplicative structures up to four-digit numbers
- Problem solving with fractions
- Reasoning with shapes
- Recall up to 12×12
- Read and spell mathematical vocabulary correctly

What mastery looks like across the school



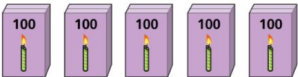
What mastery looks like across the school - current focus

- Number@9
- Quick quizzes
- Times tables practice using chanting, Times Tables Rock Stars tests

Flashback 4

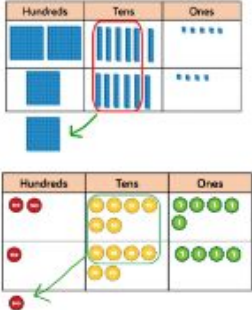
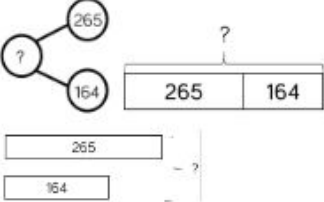
1) $468 = 461 + \square$

2) What is the missing digit?
 $814 > 8_4$

3) How many candles are there?


4) $6 \times \square = 30$

Calculation policy

3	Add with up to 3-digits	Part- whole model Bar model			265 + 164 ----- 429 ↑ 265 + 164 = 429
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What does this look like for your Year 3 or Year 4 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>

What does this look like for your Year 3 or Year 4 child?

How we use the Dienes

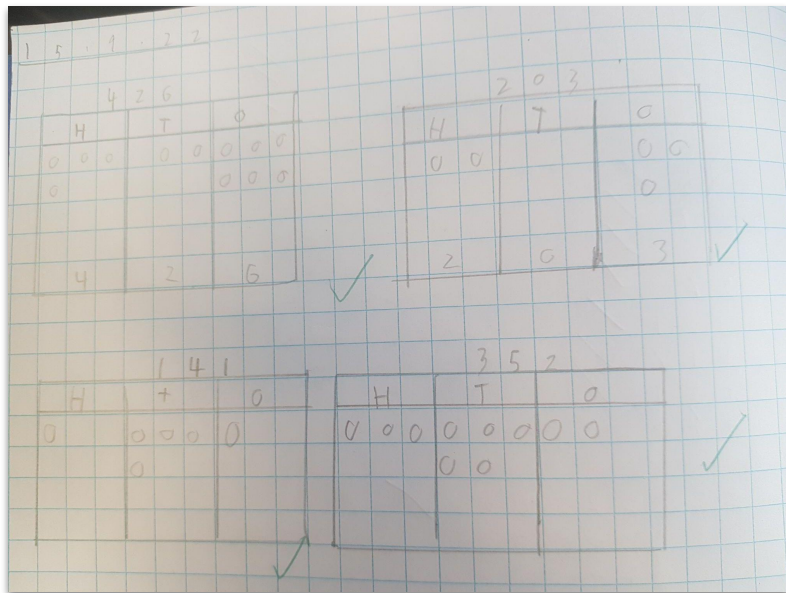
<https://mathsbot.com/manipulatives/blocks>

How we use the place value chart

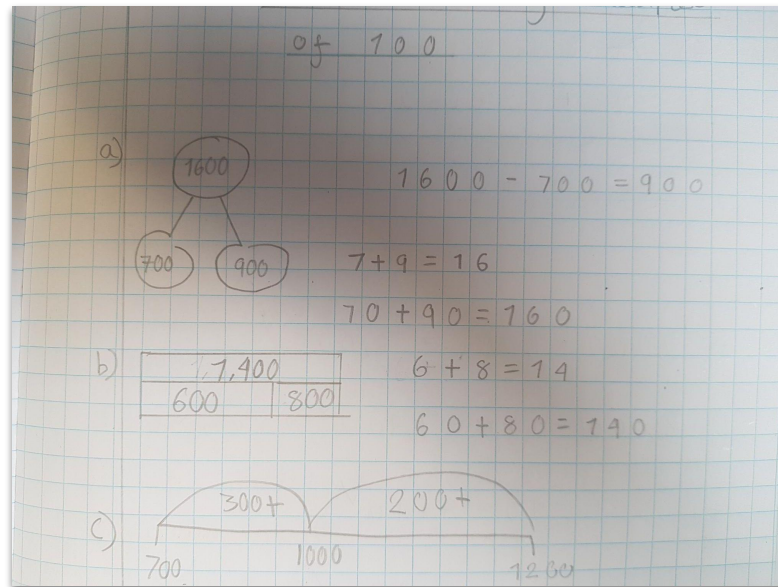
<https://www.topmarks.co.uk/Flash.aspx?f=diennesandcoinsv3>

<https://assets.whiterosemaths.com/fixed/wrm/digital-tools/pv-chart/index.html>

Examples of Year 3 and Year 4 learning



Place value chart



Part-part-whole model, bar model and number line

Mastery teaching in action - Year 3



Key facts that your child must learn to automaticity by the end of Year 4

Reducing
working memory
by having
factual recall.

x	1	2	3	4	5	6	7	8	9	10	11	12
1	1	2	3	4	5	6	7	8	9	10	11	12
2	2	4	6	8	10	12	14	16	18	20	22	24
3	3	6	9	12	15	18	21	24	27	30	33	36
4	4	8	12	16	20	24	28	32	36	40	44	48
5	5	10	15	20	25	30	35	40	45	50	55	60
6	6	12	18	24	30	36	42	48	54	60	66	72
7	7	14	21	28	35	42	49	56	63	70	77	84
8	8	16	24	32	40	48	56	64	72	80	88	96
9	9	18	27	36	45	54	63	72	81	90	99	108
10	10	20	30	40	50	60	70	80	90	100	110	120
11	11	22	33	44	55	66	77	88	99	110	121	132
12	12	24	36	48	60	72	84	96	108	120	132	144

Is your child ready for Year 4?

'Some children are calculating how many legs there are on six spiders.'

Ben:

'I know that six eights are forty-eight'

$$6 \times 8 = 48$$

Akisha:

'Five times eight is forty, so six times eight is forty plus eight.'

$$6 \times 8 = 5 \times 8 + 8$$

$$= 40 + 8$$

$$6 \times 8 = 48$$

Tasha:

$$6 \times 4 = 24$$

$$\text{double } 24 = \text{double } 20 + \text{double } 4$$

$$= 40 + 4$$

$$= 44$$

$$\text{so } 6 \times 8 = 44$$

Elliot:



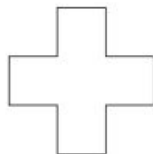
$$6 \times 8 = 56$$

• *'Find how you can divide this shape into:'*

- *'two equal parts'*
- *'four equal parts'*
- *'five equal parts'*
- *'eight equal parts.'*

'You might find more than one way for each.'

• *'What other number of equal parts can you divide it into?'*



Is your child ready for Year 5?

$$20 \times 4 = 80$$

so

$$21 \times 4 = \square$$

$$15 \times 4 = 60$$

so

$$14 \times 4 = \square$$

$$4 \times 18 = 72$$

so

$$4 \times 19 = \square$$

$$4 \times 17 = 68$$

so

$$4 \times 16 = \square$$

$$\blacklozenge \times \star = 8$$

$$\blacklozenge \times \blacklozenge = \star$$

$$\blacklozenge = \square \quad \star = \square$$

'Is the following statement always, sometimes or never true? Explain your answer.'

- A mixed number is greater than one.

Home learning for Years 3 and 4

- Support but don't do it for them.
- If child is spending more than **30** 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

Year 3: 2x, 3x, 4x, 5x, 8x and 10x and related division facts

Year 4: All up to 12 x 12



Thank you



Q&As