

# Mastery Learning

Parent Forum

Monday 4<sup>th</sup> March 2019

# What is mastery?

- ▶ Revised national curriculum introduced in 2014, levels abolished in 2015
- ▶ Much higher expectations across subjects, particularly English/Maths
- ▶ Focus on all children meeting expectations- leave no man behind!

# What is mastery?

## What does it mean to master something?

- ▶ I know how to do it
- ▶ It becomes automatic and I don't have to think about how to do it - driving a car
- ▶ I'm really good at doing it
- ▶ I can show someone else how to do it

## Mastery learning is...

- ▶ Instead of piling boxes one on top of the other trying to get higher and higher to the next level
- ▶ **Mastery and depth** is about opening the box and exploring what's inside - evidencing learning in a range of contexts
- ▶ A mastery approach provides opportunities for all students to develop a deep, long-term, secure and adaptable understanding of a subject

# Mastery in Maths

# What is *Mastery* in Maths?

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

Dr. Helen Drury, Director of Mathematics *Mastery*

# Mastery in Maths

- Mastering maths means acquiring a deep, long-term, secure and adaptable understanding of the subject.
- The ability to build on something that has already been mastered.
- The ability to reason about a concept and make connections

# 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.
- ▶ We believe that everyone can get better at maths...when they put in the effort and work at it.
- ▶ If children hear 'I can't do maths' from parents, teachers, friends they begin to believe it isn't important.

# The 2014 curriculum

The mastery approach is focussed on...

- ▶ **Fluency:** the ability to recall and apply knowledge rapidly and accurately.
- ▶ **Reasoning:** explain their mathematical thinking
- ▶ **Problem solving:** apply their knowledge to solve problems in varied contexts. Growth mindset!

Encourages **depth** before new content

“Pupils who grasp concepts rapidly should be challenged through being offered rich and sophisticated problems before any acceleration through new content.”

“Those who are not sufficiently fluent should consolidate their understanding, including through additional practice, before moving on.”

## Fluency

- Complete the grid:

|      | $\times 100$ | $\div 1000$ | $\times 10$ |
|------|--------------|-------------|-------------|
| 365  |              |             |             |
| 2669 |              |             |             |
| 12   |              |             |             |

- Fill in the boxes:

$$\boxed{\phantom{00}} \times 100 = 38$$

$$56 \boxed{\phantom{00}} = 5.6$$

$$0.8 \times 1000 = \boxed{\phantom{000}}$$

- Some facts have been cut up. Work with a partner to put them back together.  
e.g.  $74 \div 10 = 7.4$

100

31

3100

$\div 1000$

$\times 100$

$\div 100$

$= 0.031$

31

$= 1$

## Reasoning

- True or false?**  
When you multiply whole and decimal numbers by 10, 100 or 1000, you just add noughts on to the end.

- If  $5 \times 4 = 20$

Explain why these facts are true without working them out:

$$0.5 \times 4 = 2$$

$$200 \div 4 = 50$$

$$0.4 \times 0.5 = 0.2$$

## Problem Solving

- Put these calculations in order from smallest to biggest:

$$100 \times 540$$

$$5.4 \times 1000$$

$$5400 \div 10$$

$$5400 \div 1000$$

$$540 \div 10$$

- Using a number from column A, an operation from B and a number from C, how many ways can you find to make 70? (There are more than 4 ways!)

| A    | B | C    |
|------|---|------|
| 7    | X | 1    |
| 70   |   | 10   |
| 700  | ÷ | 100  |
| 7000 |   | 1000 |

# How do we teach for mastery?

- ▶ High expectations for every child
- ▶ Spend a longer time on topics
- ▶ Prioritise key topics – number and place value first
- ▶ Focus on relationships and patterns
- ▶ Small steps
- ▶ Questioning that develop reasoning and making connections

Teachers promote reasoning during maths lessons, through carefully chosen questions.

For example:

*\_\_\_\_\_ thinks that \_\_\_\_\_. Do you agree? Explain your answer.*

*Is it always true, sometimes true, never true that \_\_\_\_\_?*

*Can you spot the mistake? Explain why they are wrong.*

Use digits 1-9.

You can only use each digit once.

How close to 100 can you make the total?

$$\square + \square + \square$$

### Describing strategies

Explain how to find the sum.

Use resources or pictures to show someone else your method.

Find 3 different strategies.

### Evaluating strategies

$$6 + 5 + 4 = 10 + 5$$

$$10 + 5 = 15$$

$$6 + 5 + 4 = 5 + 5 + 5$$

$$5 + 5 + 5 = 15$$

Which do you prefer why?

$$6 + 5 + 4$$

### Being creative

Write a number story for  $6 + 5 + 4$

and another

Reflect on the problems, what's similar?

### Investigate

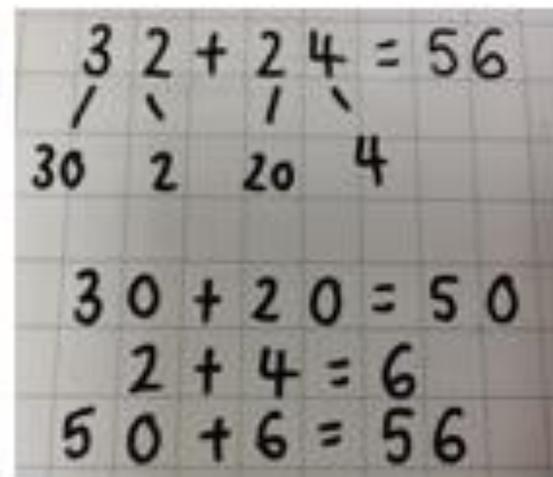
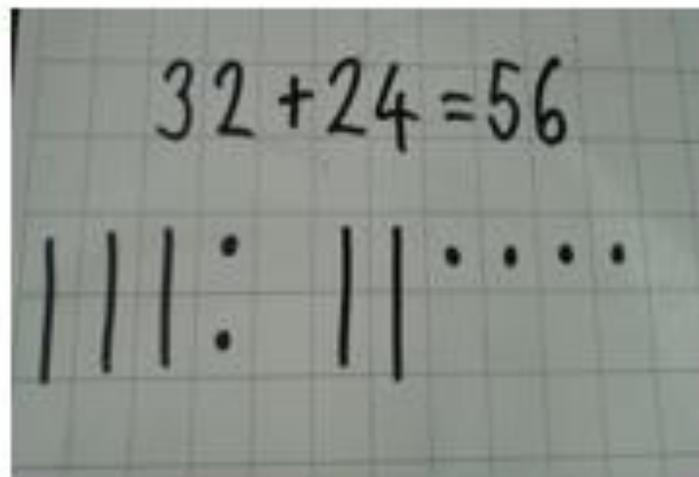
$$\bigcirc + \star + \triangle = 15$$

All numbers are different.

All are one-digit numbers.

What could they be?

# Concrete, Pictorial, Abstract



# How can you help at home?

- Shopping - calculating change and working out which offers give the best value for money. Let children count out the money. Use coins to explore addition, subtraction, multiplication and division.
- Follow a recipe - discuss how you would halve/double the recipe.
- Dice games/board games
- Counting/x tables facts in car etc
- Encourage children to explain and talk about how they have solved a problem.
- Question them - why? What do you notice? What will happen if? Can you see a pattern?

**Positive attitude towards maths!**

# Mastery in English

# What are the aims of the English National Curriculum?

The overarching aim for English in the national curriculum is to promote high standards of language and literacy by equipping pupils with a strong command of the spoken and written word, and to develop their love of literature through widespread reading for enjoyment.

The national curriculum for English aims to ensure that all pupils:

- ▶ read easily, fluently and with good understanding
- ▶ develop the habit of reading widely and often, for both pleasure and information
- ▶ acquire a wide vocabulary, an understanding of grammar and knowledge of linguistic conventions for reading, writing and spoken language
- ▶ appreciate our rich and varied literary heritage
- ▶ write clearly, accurately and coherently, adapting their language and style in and for a range of contexts, purposes and audiences
- ▶ use discussion in order to learn; they should be able to elaborate and explain clearly their understanding and ideas
- ▶ are competent in the arts of speaking and listening, making formal presentations, demonstrating to others and participating in debate.

# Our Core Beliefs

An English curriculum taught through immersion in a high quality text to develop young learners who have fluency and depth of understanding in a range of reading, writing, grammar and punctuation skills.

# Mastery in Writing

## How are we developing children's skills in writing?

- What do they know already?
- What punctuation/grammar will be needed from their year group curriculum to write an effective piece of work
- Share good examples of writing
- Building up the amount children write gradually and incorporating skills learned
- Creating a finished piece of writing where all comes together

# Mastery in Reading

## How are we developing children's skills in reading?

- Working to develop a love of reading
- Using high-quality texts
- Well-planned Guided Reading
- Comprehension

# How can you help at home?

- ▶ Share books together
- ▶ Discuss new and interesting words
- ▶ Help your child to learn their spellings

# Questions

The background features abstract, overlapping geometric shapes in various shades of green, ranging from light lime to dark forest green. These shapes are primarily located on the right side of the slide, creating a modern, layered effect. The rest of the slide is a plain white background.