## Welcome to our Maths Information Evening

The purpose of tonight is to share with you:

- An insight into Maths Mastery
- An opportunity to see and use some of the resources we use with your children
- The progression of multiplication through the school
- Ideas of how to support your children


## Maths Mastery Model

- Believes everyone can do maths and everyone can do well
- pupils acquire a deep, long-term, secure and adaptable understanding of mathematical concepts
- Is not breath but depth
- Pupils explore mathematical ideas rather than told
- Pupils are taught through whole-class interactive teaching, where all pupils work together on the same lesson content at the same time,
- Taught through the 5 big ideas of coherence, structure and representation, mathematical thinking, variation and fluency

Teaching for Mastery


- Coherence - Lessons are broken down into small connected steps that gradually unfold the concept, providing access for all children and leading to a generalisation of the concept and the ability to apply the concept to a range of contexts.
- Variation - procedural where the teacher chooses examples to highlight the desired learning or relationship
Eg 7-3=
$7+3=$
8-4 =
6453-199
$8+2=$
9-5 =

$$
9+1=
$$

$6453+199$

- Conceptual where the same concept is used but within a different representation
- Mathematical thinking - the ability to reason and explain why something happens using mathematical language.

Eg Which number is the odd one out?
7
9
14

- Fluency - Quick and efficient recall of facts and procedures and the flexibility to move between different contexts and representations of mathematics

$$
\text { Eg } 348 \times 19=\quad 14 \times 2.5=
$$

- Representation and structure (Concrete, Pictorial, Abstract)

Concrete - the use of manipulatives to expose the mathematical structure being taught.

Pictorial - can be used as a visual representation of a problem to help with understanding or to prove a solution.

> Eg - use of a number line chart

$$
7-2.45 \quad 30 \% \text { of } 150 \quad 56.3 \times 10
$$

Abstract - number calculations

## Resources Used

- Activity 1 - Tens frames and number lines
- Activity 2 - Dienes
- Activity 3 - Gattegno chart
- Activity 4 - Place Value coins and Place Value charts


Multiplication - Year 3

## Learning journey:

Take one group off and you have 9 groups of 5.

## Equal / unequal groups

Multiplier / Multiplicand No of groups / Number in each group.

## Arrays

Skip-counting
Strategies to work out unknown facts.



## coceo coceco


$10 \times 5=50$
$9 \times 5=50-5=45$

## Learning journey:

 How could we represent this as a bar model? You try...
## Multiplication is commutative

Bar model representations

3, 4, 8 times table facts
Relationship: doubles / halves

Range of 'real life' problems


$24 \div ?=4$
$6 x ?=24$

$$
24 \div ?=6 \quad 4 \times ?=24
$$



## Multiplication - Year 4

Learning Journey

- Multiplying by 10 and 100

$$
\text { e.g } 21 \times 10,32 \times 100
$$

- Learning the remaining tables up to $12 \times 12$
- Multiplying 3 numbers e.g. $5 \times 7 \times 2$
- Factors
- Informal methods to multiply e.g. $16 \times 3,28 \times 5$

Times Tables Rock Stars daily practice in school

## 00:00

## OF 3 MIIUUIES



## Please practise at home too!



## Garage/Gig

Auto or teacher-set questions

Best for practice and
earning coins


## Studio

Questions up to $12 \times 12$
Earn rock speed and
status
Multi Player Games


Arena
Auto or teacher-set questions
Compete against your class mates


Soundcheck
25 questions
6 second limit per
question

The Multiplication Tables Check in June

- Computer based
- 25 questions/ 6 seconds per question
- Best way to prepare is to use TTRS!


## Year 5 - Introducing formal short multiplication method

We begin our unit by exploring area models - similar to arrays.
Prior knowledge: They know their tables to $12 \times 12$
They can multiply a power of 10 . (i.e $20 \times 3,40 \times 5$ etc)

What does the sum
$13 \times 3$

Draw an area model of the calculation:


What is the most efficient way to split this area model?


Our next step ... beginning to look at a formal method...


Let's draw an area model together for this calculation:


What does the sum
mean?
$27 \times 3$

Draw an area model of the calculation:

What is the most efficient way to split this area model?


Let's look at how to do this calculation in a formal method.
$27 \times 3$

$$
=
$$

| $20 \times 3$ | $7 \times 3$ |
| :--- | :--- |



Let's draw an area model together for this calculation:


## Multiplication - Year 6

- Mental strategies - use of factors

$$
\text { Eg } \begin{aligned}
& 32 \times 4= \\
& 32 \times 15= \\
& 232 \times 30
\end{aligned}
$$

- Long multiplication $232 \times 47$


## How to Help

- Times table recall - rock stars
- Number bonds to 10 and 100
- Number facts
- Related facts
- Maths games

