

# Wednesday 1<sup>st</sup> November 2023 Maths Parent Workshop



# Maths No problem

# White Rose Maths

#### New National Curriculum in 2014. Focus on 'mastery,' moving children away from procedural based understanding.

- Interest in high performing countries including Singapore, China and North Korea.
- Ensuring high expectations for all. No child left behind.
- Focus on challenge through rich and sophisticated problem solving activities.

# Mastery based progression approach: Concrete, pictorial and abstract learning.

- Develop children's conceptual understanding of number using:
- Concrete
- Pictorial
- Abstract



#### Example:

# 6 + 3 =

# Concrete – pictorial – abstract

# Bar modelling

#### Concrete - modelling with real objects



Should we add or subtract to find the total number of flowers?

There are 8 flowers in the vase. There are 2 flowers in Hannah's hand. How many flowers are there in total?





#### Example:

Jacqueline had 6 marbles, Jo gave her 5 more. How many marbles are there altogether?

We would represent this problem in a bar model, this helps children to visualise the calculation.

# Maths Learning by end of Year 1

- Count to and across 100, forwards and backwards. Beginning with 0 or 1, or from any given number. Find one more and one less than a number. Read and write numbers to 100 in numerals
- Understand the place value of two digit numbers
- Count in multiples of twos, fives and tens forwards and backwards
- Recognise odd and even numbers
- Represent and use **number bonds** and related subtraction facts within 20
- Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs
- Add and subtract one-digit and two-digit numbers to 20, including zero
- Solve one-step problems that involve addition and subtraction, use concrete objects and pictorial representations, and missing number problems such as 7=\_\_\_\_ 9
- Understand '=' as a balancing sign

Place value is a very important concept for children to understand.

Place value explains what each digit in the number is worth, what is its value.

#### Place Value

We use Dienes to make different numbers and to see the value of each digit. Firstly make the number 4.

tens	ones	

Now add a 10 to make 14.

Challenge: can we make 41? What is the value of the 4?



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- Solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher (grouping and sharing)
- Recognise, find and name a half as one of two equal parts of an object, shape and quantity to 20
- Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity to 20
- Recognise and name common 2D and 3D shapes
- Measure and begin to record the following:
- Recall language related to dates, days of the week, month, years
- Tell time to nearest hour
- Measure mass, height and capacity and compare using language 'heavier/lighter, longer/shorter, full/empty' etc



Let's write a repeated addition sentence.

We can also write a multiplication sentence.

Make an array for the number sentence:

6 x 3 or 6 lots of 3. 3 x 6 or 3 lots of 6

Challenge: write some repeated addition and multiplication sentences for the arrays on your table.

### Maths Learning by end of Year 2

- Count in steps of 2, 3 and 5 from 0 and any other one digit number, forward or backward and in steps of 10 from any number
- Recognise the place value of each digit in a three-digit number (hundreds, tens, ones). Understand 0 as a place holder
- Compare and order numbers from 0 up to 200; use <, > and = signs
- Represent and estimate numbers to 200 using different pictorial representations
- Read and write numbers to 200 in numerals and to 100 in words
- Use place value and number facts to solve problems (e.g. using partitioning to add and subtract mentally, e.g. 23 = 20 +3 and 23 = 10 + 13)





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Hundreds	Tens	Ones 💼
	545 23	

Mentally

23 + 10 =

103 + 10 =

23 + 20 = 120 + 24 =

- Add and subtract numbers mentally including \*A two-digit number and ones \*A two digit number and tens \*Two, two digit numbers \*Three one digit numbers
- Show that addition of two number can be done in any order (commutative) and subtraction of one number from another, cannot
- Recognise and use the inverse relationships between addition and subtraction and use this to check calculations and missing number problems
- Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100
- Solve problems involving missing numbers



Fill in the bar models to solve these addition and subtraction calculations.



There can be some common misconceptions around bar modelling.

#### • Fractions

- Recognise, find, name and write fractions 1/3 ¼ 2/4 and ¾ of a length, shape, set of objects or quantity
- Write simple fractions, e.g. ½ of 6 = 3 and recognise the equivalence of 2/4 and ½
- Order fractions and equivalence using models
- Understand tenths = ten equal parts
- Count up and down in tenths, over 1 whole

#### • <u>Money</u>

• Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change.

To find a fraction of an amount, we firstly divide it by the denominator.

Would you.... share? use your knowledge of multiples? draw groups?

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The numerator tells us how many of these groups we want.



# Maths mastery

Can children apply their knowledge in other contexts. Can they use their subtraction knowledge to work out change? Can they solve two step word problems?



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### Subtraction



5

How many possible inverse calculations are there?

12

Eva writes this calculation: 18 - 5 = 13Which of the following could she use to check her work?

# Maths mastery

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# •THANK YOU!

- Questions?
- Useful links:
- <u>https://www.topmarks.co.uk/maths-games/5-7-years/counting</u>
- <u>https://nrich.maths.org/</u>