

Five Ways Primary School Year 4 Parent workshop November 2018

<u>Helping your child improve their</u> <u>maths skills</u>

Maths in the National Curriculum

The principal focus of mathematics teaching in lower key stage 2 is to ensure that pupils become increasingly fluent with whole numbers and the 4 operations, including number facts and the concept of place value. This should ensure that pupils develop efficient written and mental methods and perform calculations accurately with increasingly large whole numbers.

At this stage, pupils should develop their ability to solve a range of problems, including with simple fractions and decimal place value. Teaching should also ensure that pupils draw with increasing accuracy and develop mathematical reasoning so they can analyse shapes and their properties, and confidently describe the relationships between them. It should ensure that they can use measuring instruments with accuracy and make connections between measure and number.

By the end of year 4, pupils should have memorised their multiplication tables up to and including the 12 multiplication table and show precision and fluency in their work.

Pupils should read and spell mathematical vocabulary correctly and confidently, using their growing word-reading knowledge and their knowledge of spelling.

Purpose of the Workshop

 We aim to share ideas and resources that will enable you to support your child at home, developing deeper understanding and confidence in maths.

<u>Mental Maths</u>

- Maths is a subject that constantly builds upon existing skills.
- Maths facts (number bonds to ten, times tables to 12 and so on) and basic mental calculation strategies are the building blocks of later maths.
- Number bonds, including knowledge of related facts then allows children to solve written calculations with larger numbers,
- e.g. 5 + 3 = 8, therefore 50 + 30 = 80
- Recall should be as automatic and rapid as possible.
- Fluency requires repetition.
- Practise at home can help tremendously to boosting children's access to, and enjoyment of, maths.





How can my child practise?

- Online games <u>http://www.fiveways-</u> primary-school.org.uk/
- Card Games
- Dice games
- Board games
- We have provided a handout with lots of ideas.

Practical

Card game - TENS

NUMICON game

• Hit the button

CPA

- As a school we believe that all students, when introduced to a key new concept, should have the opportunity to build competency in this topic by taking this approach.
- **Concrete** students should have the opportunity to use concrete objects and manipulatives to help them understand what they are doing.
- Pictorial students should then build on this concrete approach by using pictorial representations. These representations can then be used to reason and solve problems.
- **Abstract** with the foundations firmly laid, students should be able to move to an abstract approach using numbers and key concepts with confidence.
- A simple example of this model can be seen below.
- <u>CUBES</u>



Addition



Use these four dominoes to make a square that has the same number of dots on each side.





Subtraction



00 Thousands	Hundreds	Tens	Ones
1200	100 100	10 10 10 1 10 1 10 1 10 1 10 1 10 1 10	1(1



Multiplication





Division





We do not aim to simply become fluent in using written methods but also to develop children's confidence to solve problems by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.

Problem Solving

- We encourage children to use visual cues to help them identify the number operation(s) required to solve mathematical problems.
- This can simply be drawing the problem or can be through the use of diagrams and bar models.
- Bar modelling is proven to be a fantastic visual resource, once children are familiar with using it.







There were 2,114 visitors to the museum on Saturday.

650 more people visited the museum on Saturday than on Sunday.



Altogether how many people visited the museum over the two days?

What do you need to do first to solve this problem?

Total Visitors?						
Saturday = 2114	Sunday = 2114 - 650					
?						
2114	1464					

Total Visitors = 2114 + 1464 = 3578

1a. Sarah has represented a number using a bar model. When rounded to the nearest 100, the number rounds to 400.



A is a multiple of 10. What could A be?



 A key skill that demonstrates a deeper understanding is the ability to reason. We explore this through:

- Discussion
- Exploring possibilities
- Proving solutions
- Developing tactics within games

A game to play for two people.



The aim of the game is to get a number as close to 5,000 as possible. Each child rolls a 1-6 die and chooses where to put the number on their grid. Once they have each filled their grid, they add up their totals to see who is the closest.

	?	?	?	?
+	?	?	?	?



Who is right? Which answer is correct? Explain your reasons why. Why is one of the answers wrong? Will is correct as 3,232 - 546 = 2,686

Max is incorrect because he did not exchange the 2 and the 3 and subtracted the bottom numbers from the top.



Support from home is invaluable when teaching children to tell the time.

Essentially, all children should be able to tell the time using an analogue clock to the nearest five minutes by the time they are in Year Four. However, children also need to be able to convert analogue time to digital in order to build up to using the 24 hour clock.

Please tell the time as much as possible and practise using timetables to calculate differences between times. Repetition is key to developing accuracy and confidence.



Measures

- You can help by providing real-life opportunities for children to <u>estimate</u> and <u>measure</u> in a variety of different situations.
- Baking
- Measuring liquids
- Using tape measures.



Money

Many children have little concept of money in today's 'plastic' dominated world.

Simply allowing children to count a spare change pot develops coin awareness and little tricks, e.g counting the largest values first, 'grouping' the ones into tens etc.

Where possible, allow children to pay for items, to approximate if they will have enough for several items, and calculate change.

Once secure, ask children to reason, will it be better value to buy the items in a multipack or as single items? If there is a special offer, how much will I save?



Fractions

- Recognise fractions in real life situations, e.g. when slicing a pizza into eight <u>equal</u> slices, discuss 2 eighths are equal to 1 quarter; 4 eighths are equal to 1 half etc.
- Share a bar of chocolate out equally, e.g. how many chunks are there in half of the bar?
- Would you rather have ³/₄ or 2/3 of a cake? (bar model)





<u>General Principles</u>

- Encourage children to give an answer. If it is not correct, praise the effort and suggest a strategy to improve their answer.
- If children are struggling to identify which number operation is required to solve a problem, focus on vital vocabulary and get them to draw it.
- Children should know that when we make mistakes and correct them, that is where the learning happens.
- Make games as enjoyable as possible.
- Make the most of opportunities, where children can see maths being used in real-life situations, e.g. discuss the shapes they can use used in buildings, use timetables, measure, bake.
- Little and often is better.