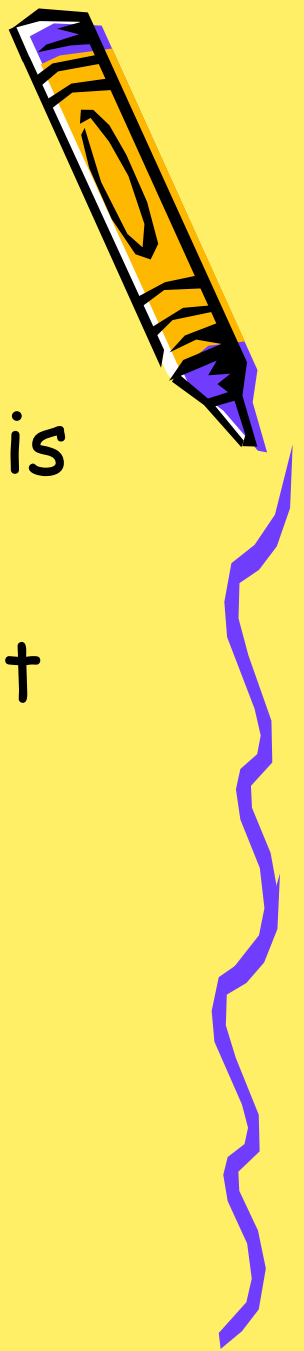


KS2 Mathematics  
Parents Workshop  
- Year 3/4



# Aims of today

- To have an insight into how Maths is taught at St Anne's.
- To take away some ideas to support your children at home.



# Key aims of the new Maths curriculum



- Fluent recall of mental maths facts e.g. times tables, number bonds. Etc.
- To reason mathematically - children need to be able to explain the mathematical concepts with number sense; they must explain how they got the answer and why they are correct.
- Problem solving - applying their skills to real-life contexts.



# Key Differences New Maths Curriculum



- By the age of nine, children are expected to know **times tables up to  $12 \times 12$**  (used to be  $10 \times 10$  by the end of primary school).
- **Simple fractions ( $\frac{1}{4}$  and  $\frac{1}{2}$ )** are taught from KS1, and by the end of primary school, children should be able to convert decimal fractions to simple fractions (e.g.  $0.375 = \frac{3}{8}$ ).



# What do we teach?



- Place Value to 10,000,000 and to thousandths in decimal places
- Rounding any number to 10, 100, 1000, 10,000, 100,000 and decimal numbers to whole numbers, one decimal point, two decimal points
- Roman numerals to 1000
- Negative numbers in context (temperature)
- Multiplication 4/5 digit (whole numbers and decimal numbers) numbers by 2 digit numbers
- Long Division of 4 digit numbers by 2 digit numbers
- Fractions, Decimal and Percentages Equivalence, amounts of
- Addition and subtraction to 10,000,000



# Continued...



- Time/Interpreting Timetables
- Measurement ( mass, length, capacity, temperature, perimeter, area, volume, imperial unit of measure)
- Money- budgeting
- Problem solving-words problems
- Ratio and Proportion-Year 6 only
- Statistics
- Geometry -Shape and space, Angles
- Geometry-Co-ordinates
- Alegbra



# Number and Place Value

By the end of Year 6 children should be able to order, compare, read and write in digits and words numbers to 10,000,000

Count

Year 3-Numbers to 1,000

Year 4-Numbers to 1,000

Year 5-Numbers to 1,000,000

Year 6- Numbers to 10,000,000





# Place Value



- Place value is at the heart of the number system. All digits have a value and a secure understanding of this will enable children to use and understand different calculation methods.





# Roman Numerals

By the end of Year 6 children should be able to read Roman Numerals in the thousands.

Year 4 - Numerals to 100

Year 5/6 - Numerals to 1000

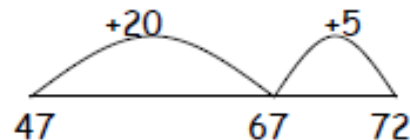


# Calculation Strategies

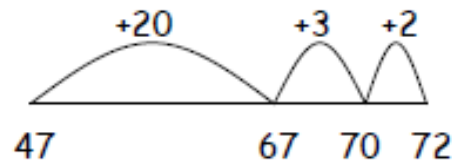


$$47 + 25 =$$

My sunflower is 47cm tall.  
It grows another 25cm. How  
tall is it now?



or



Drawing an empty number line helps children to record the steps they have taken in a calculation (start on 47, +20, then +5). This is much more efficient than counting on in ones.



# Partitioning into tens and ones - Year 3



$$\begin{array}{r} 47 \\ + 76 \\ \hline \end{array} = \begin{array}{r} 40 + 7 \\ 70 + 6 \\ \hline 110 + 13 \end{array} = 123$$



# Expanded Column Addition - Year 4



$$487 + 546 =$$

There are 487 boys and 546 girls in a school. How many children are there altogether?

$$\begin{array}{r} 546 \\ + 487 \\ \hline 13 \\ 120 \\ 900 \\ \hline 1033 \end{array}$$

Children will be taught written methods for those calculations they cannot do 'in their heads'.

Expanded methods build on mental methods and make the value of the digits clear to children. The language used is very important

(6+7, 40+80, 500+400, then 900+120+13 - *add this mentally NOT in columns*).





# Compact Column Addition

789 + 642 becomes

$$\begin{array}{r} \phantom{+} 7 \phantom{0} 8 \phantom{0} 9 \\ + 6 \phantom{0} 4 \phantom{0} 2 \\ \hline 1 \phantom{0} 4 \phantom{0} 3 \phantom{0} 1 \\ \hline \phantom{0} 1 \phantom{0} 1 \end{array}$$

Answer: 1431



# Subtraction



## Subtraction – Lower & Upper KS2

Column Method – Decomposition:

$$\begin{array}{r} 1 \\ 676 \\ - 39 \\ \hline 637 \end{array}$$

Borrowing 'ten' not 1

$$\begin{array}{r} 1 \\ 1237 \\ - 84 \\ \hline 1153 \end{array}$$

Children must keep being referred back to place value – it is 3 tens not just 3.



# Multiplication

Grid Method:

$$43 \times 6$$

X	6
40	240
3	18
	258

This method links directly to the mental method of multiplication.

$$124 \times 32$$

X	30	2	
100	3000	200	3200
20	600	40	640
4	150	8	158
			3998



# Multiplication continued..



## Multiplication – (Lower) & Upper KS2

Short Multiplication:

$$43 \times 6$$

$$\begin{array}{r} 43 \\ \times 6 \\ \hline 258 \\ 1 \end{array}$$

This method is the next step on from the expanded method.

Once again children have to be secure with their place value and know they are carrying 'ten' not one.





# Division

## Division – (Lower) & Upper KS2

Expanded Method – Chunking:

$$87 \div 6 =$$

$$\begin{array}{r} 6 \overline{) 87} \\ \underline{60} \phantom{-} \\ 27 \\ \underline{24} \phantom{-} \\ 3 \end{array}$$

$6 \times 10$

$6 \times 4$

This method is based on subtracting multiples of the divisor or 'chunks'.

Initially they subtract several chunks but with practice children will look at the biggest multiples of the divisor that they can subtract.



# Division Continued...



## Division – (Lower KS2) & Upper KS2

Short Division - TU  $\div$  U:

This method is the next step after chunking. It is a more compact method.

$$81 \div 3 =$$

$$\begin{array}{r} 27 \\ 3 \overline{) 81} \end{array}$$

Links to chunking:

$$3 \times 20 = 60$$

$$80 - 60 = 20 \text{ which the '2' represents}$$

$$3 \times 7 = 21$$

No remainder

Answer = 27



# Good practice in Maths



- ▶ All children need to learn maths in a real life context. As well as knowing  $7 \times 7 = 49$ . Children need to be able to do the following:  
There are 7 fields, each field has 7 sheep in them. How many sheep are there in total?
- ▶ Children need to be able to explain how they have calculated or solved a problem.
- ▶ In the new curriculum, written calculations are taught at an earlier age. The mental methods are essential for supporting pupils understanding of these written calculations.



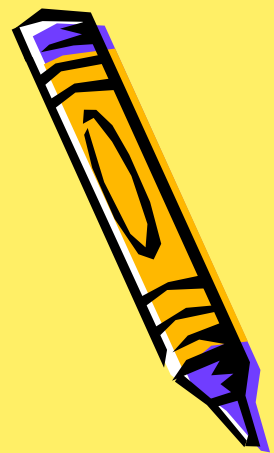


# How you can help at home

- Telling the time.
- The ability to estimate.
- To use maths in a real life context.
- Cooking.
- Shopping
- Practise times tables
- Support with homework using methods we've shown you.



# TTRS



# Addition using PV Counters

- $342 + 179 =$
- $476 + 357 =$
- $527 + 297 =$
- $458 + 367 =$

