Practical activities to support with maths learning at home

KS2 - Parent workshop

Agenda

- An overview of how maths is taught at USI
- CPA approach – what is it?
- Calculation Policy
- Look at some of the strategies we use in school
- Share some of the practical resources which are used in maths lessons
- Share strategies you could use to support your child at home

Our Aim

- Enjoy maths and see its relevance in 'the real world'.

- Have a growth mindset about maths – developing a 'can do'/'have a go' approach.

- Secure knowledge of number facts and a good understanding of the four operations. Use this knowledge to carry out calculations mentally.

- Make use of diagrams and jottings to help record the steps to solving a problem.

- Mathematical thinking and reasoning – being able to choose efficient methods for a range of mathematical problems. They have the skills to problem solve with confidence.
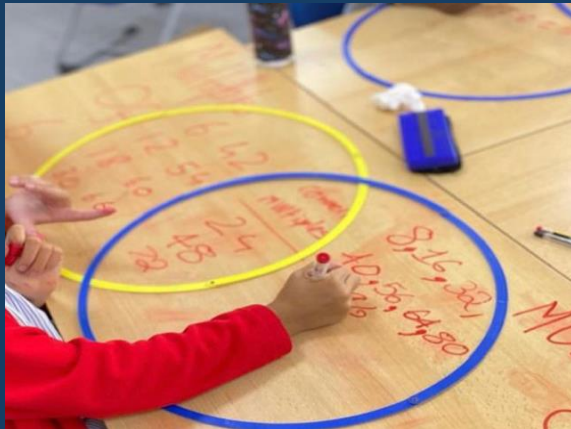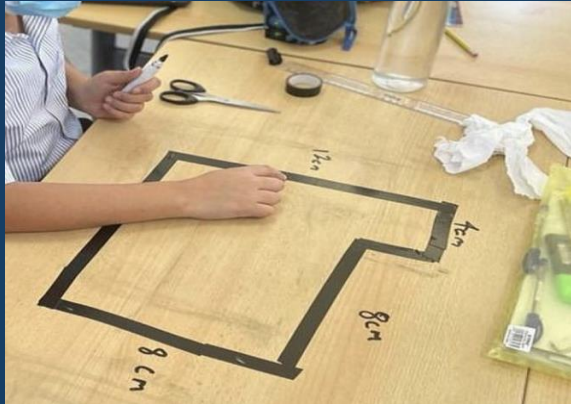
The National Curriculum

Year 3 and 4

- Ensure that pupils become increasingly fluent with whole numbers and the 4 operations, including number facts and the concept of place value.

- Solve a range of problems

- 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.

Year 5 and 6

- Develop the connections that pupils make between multiplication and division with fractions, decimals, percentages and ratio.

- Develop their ability to solve a wider range of problems, including increasingly complex properties of numbers and arithmetic, and problems demanding efficient written and mental methods of calculation.

- By the end of year 6, pupils should be fluent in written methods for all 4 operations, including long multiplication and division, and in working with fractions, decimals and percentages.

White Rose Maths

- The curriculum designed by White Rose Maths is split into schemes of learning for each year group. These schemes of learning break down what children should learn in each week of each term to master and build upon their foundational Maths skills.

- The White Rose Maths curriculum encourages the CPA approach (Concrete, Pictorial, Abstract), teaching children a deeper understanding of Maths problems.

- This approach helps children to visualise, describe and experiment with mathematical concepts, ultimately improving their mathematical fluency.

White Rose Maths - Website

www.whiteroseeducation.com

Free maths home workbooks

Free interactive resources to support at home

*links to the current learning will be on the week ahead document sent by class teachers on Dojo.

Calculation Policy

- The maths work that your child is doing in school may look different to the kind of 'sums' you remember.

- Many parents express concerns about wanting to help at home but don't want to show 'wrong' methods to their children.

- Our Calculation Policy outlines how maths is taught from Year 1 through to Year 6 and the methods taught in each year group.

CPA approach

Concrete → Pictorial → Abstract

C

- Concrete = maths concept is modelled with concrete materials

P

- Pictorial = maths concept is modelled with picture examples

A

- Abstract = maths concept is modelled with numbers and symbols.

4+5=9

Concrete   Pictorial   Abstract

3 + 2 = 5
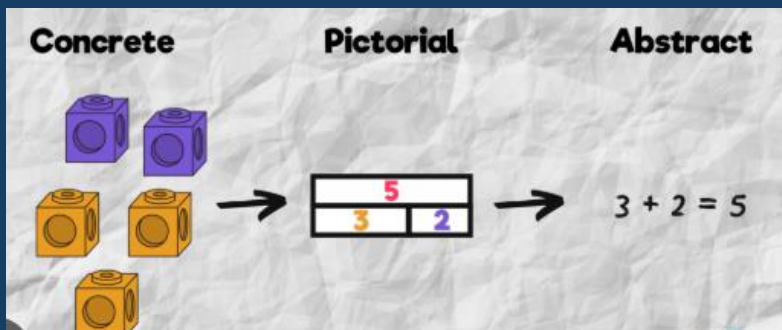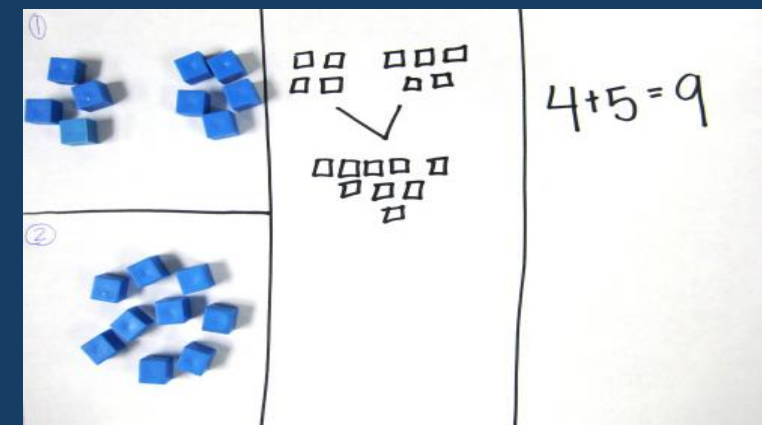
I hear and I forget. I see and I remember. I do and I understand.

Parent Task

How would you answer this question?

104,328 + 61,731

You can use column method, but we also teach using different strategies.

This help with understanding what they are learning.

- Teaching for understanding and not just short cuts

- Providing children with a range of strategies
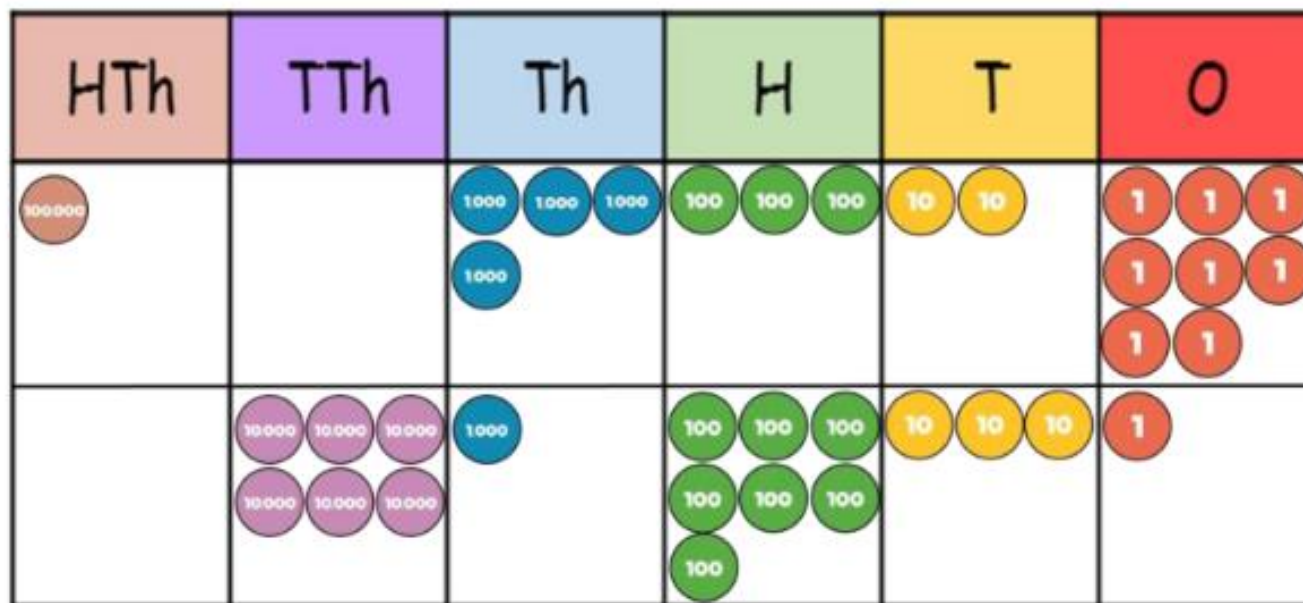
Parent Task

How would you answer this question?

22 x 31

You can use long multiplication, but we also teach using different strategies.

This help with understanding what they are learning.
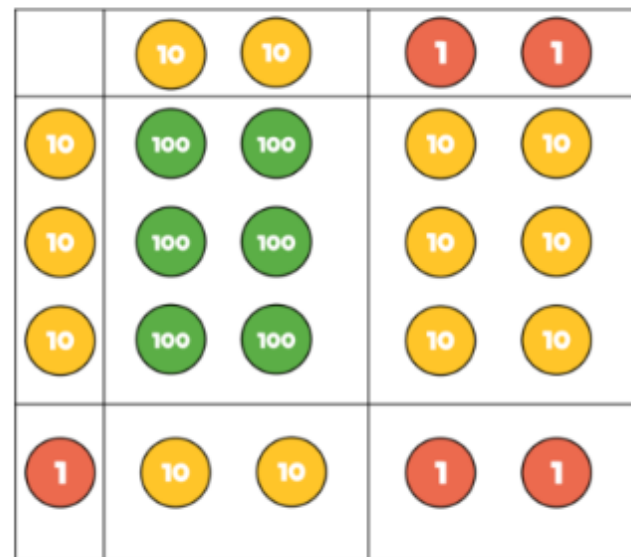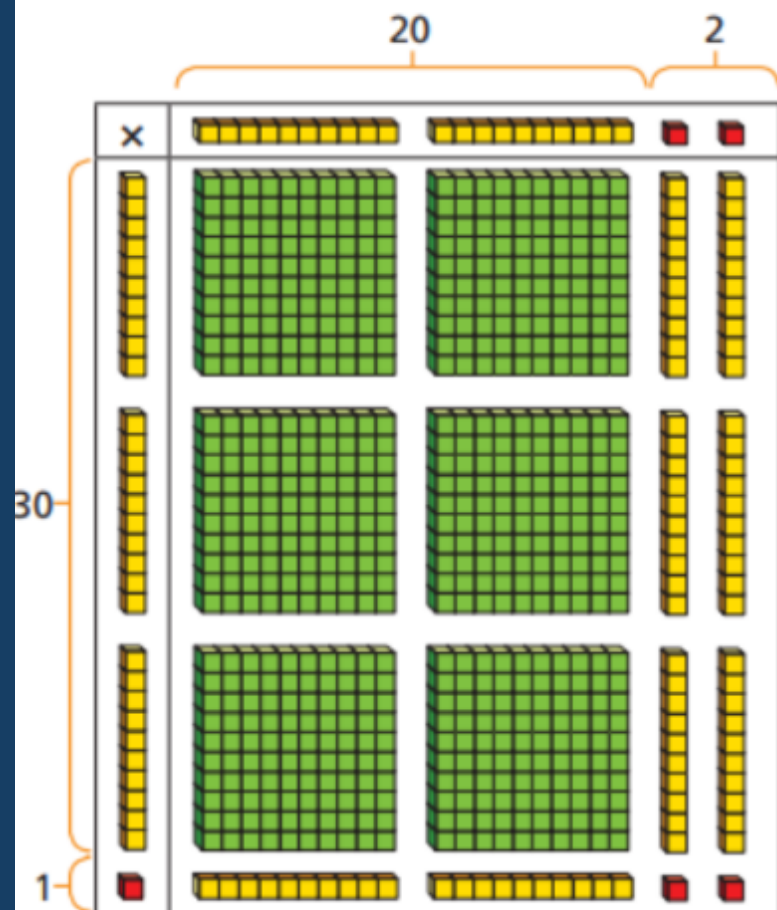
$$22 \times 31 = 682$$

×	20	2
30	600	60
1	20	2

		H	T	O
			2	2
×			3	1
			2	2
		6	6	0
		6	8	2

Skill	Year	Representations and models	
Add with up to 4-digits	4	Part-whole model Bar model	Base 10 Place value counters Column addition
Add with more than 4 digits	5	Part-whole model Bar model	Place value counters Column addition
Add with up to 3 decimal places	5/6	Part-whole model Bar model	Place value counters Column addition

Part Whole Model
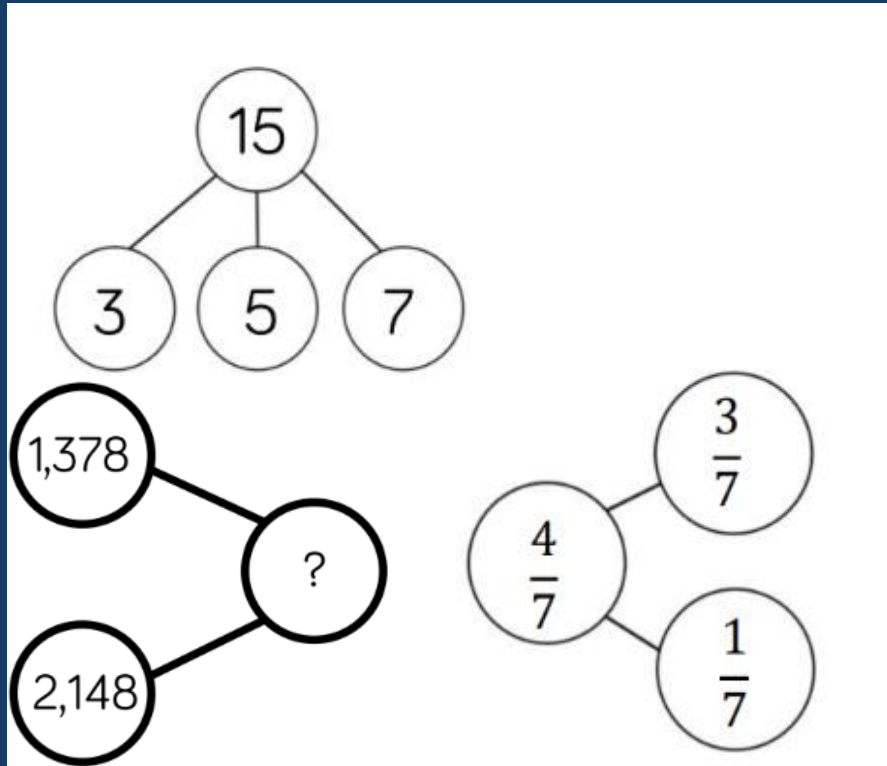
- Helps children with their understanding of partitioning.

- When the parts are complete and the whole is empty, children must add the parts together to find the total.

- When the parts are empty, but you have the whole, children must work out what is needed to reach the total.

Bar Model

KS1 example
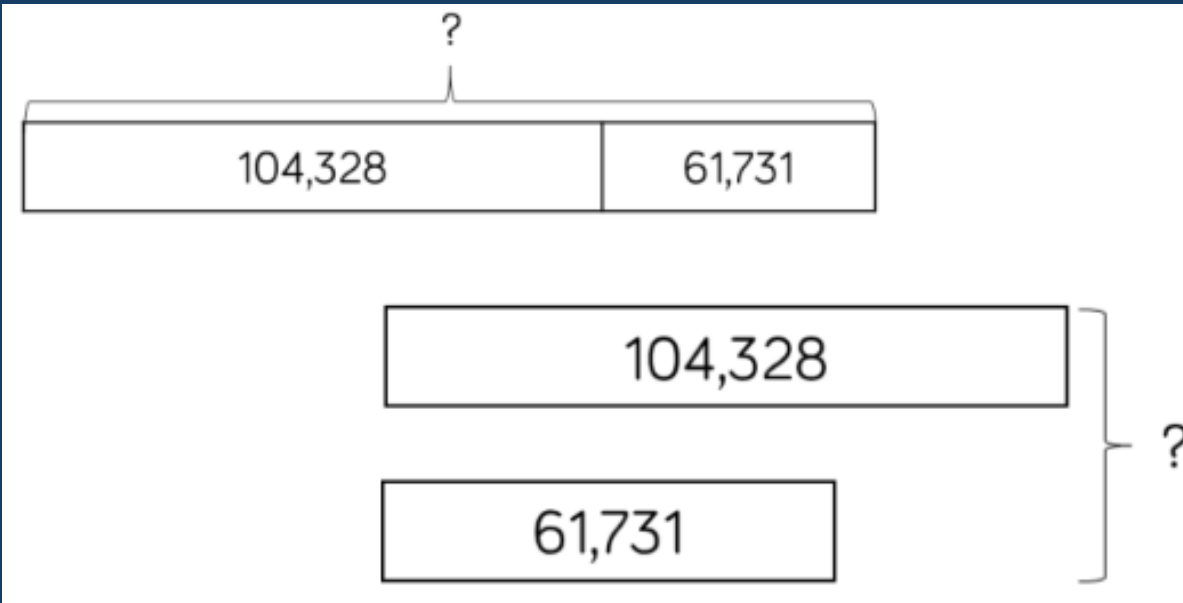
Concrete

- Another type of part-whole model
- Represents calculations to help children unpick the structure
- Concrete- use cubes or counters
- Continuous- each box represents a number

Place Value Mat/ Counters

$$104{,}328 + 61{,}731 = 166{,}059$$

- Children should write out their calculations alongside the counters.

- Children should first be exposed to subtracting without exchanging before moving onto this.

- When there are not enough ones or tens to subtract in a column, children need to exchange from the next column.

Base 10/ Dienes

$$1{,}378 + 2{,}148 = 3{,}526$$

Thousands	Hundreds	Tens	Ones

- Children should write out their calculations alongside the counters.

- Children should first be exposed to subtracting without exchanging before moving onto this.

- When there are not enough ones or tens to subtract in a column, children need to exchange from the next column.

1,378

2,148

?

?

| 2,138 | 1,378 |

| 2,138 |

| 1,378 |

?

	1	3	7	8
+	2	1	4	8
	3	5	2	6

1 1

$$1,378 + 2,148 = 3,526$$

Thousands	Hundreds	Tens	Ones

Thousands	Hundreds	Tens	Ones
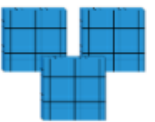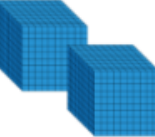
Base 10 and place value counters are the most effective manipulatives when adding numbers with up to 4 digits.
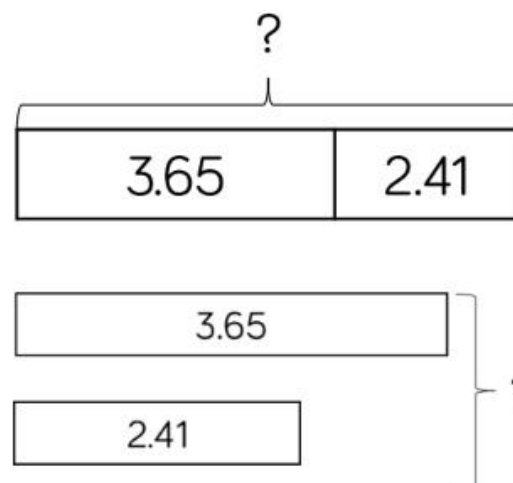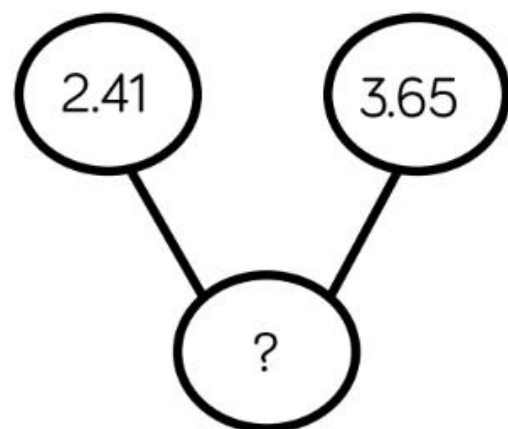
Ensure children write out their calculation alongside any concrete resources so they can see the links to the written column method.

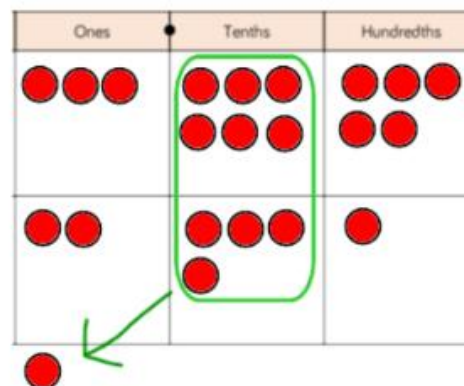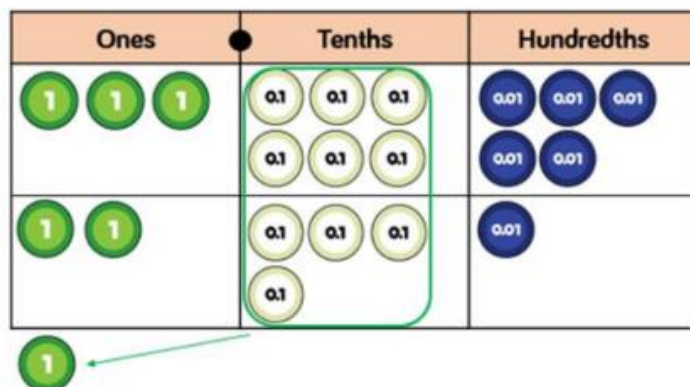Plain counters on a place value grid can also be used to support learning.

Skill: Add with up to 3 decimal places

Year: 5

مدرسة المتحدة الدولية
United School International
The Pearl Island جزيرة اللؤلؤة
an Orbital Education School

2.41   3.65

?

?

| 3.65 | 2.41 |

| 3.65 |

?

| 2.41 |

$$3.65 + 2.41 = 6.06$$

$$\begin{array}{r} 3.65 \\ + 2.41 \\ \hline 6.06 \\ 1 \end{array}$$

Ones	Tenths	Hundredths

Ones	Tenths	Hundredths

Place value counters and plain counters on a place value grid are the most effective manipulatives when adding decimals with 1, 2 and then 3 decimal places.

Ensure children have experience of adding decimals with a variety of decimal places. This includes putting this into context when adding money and other measures.
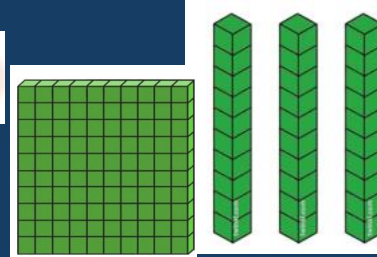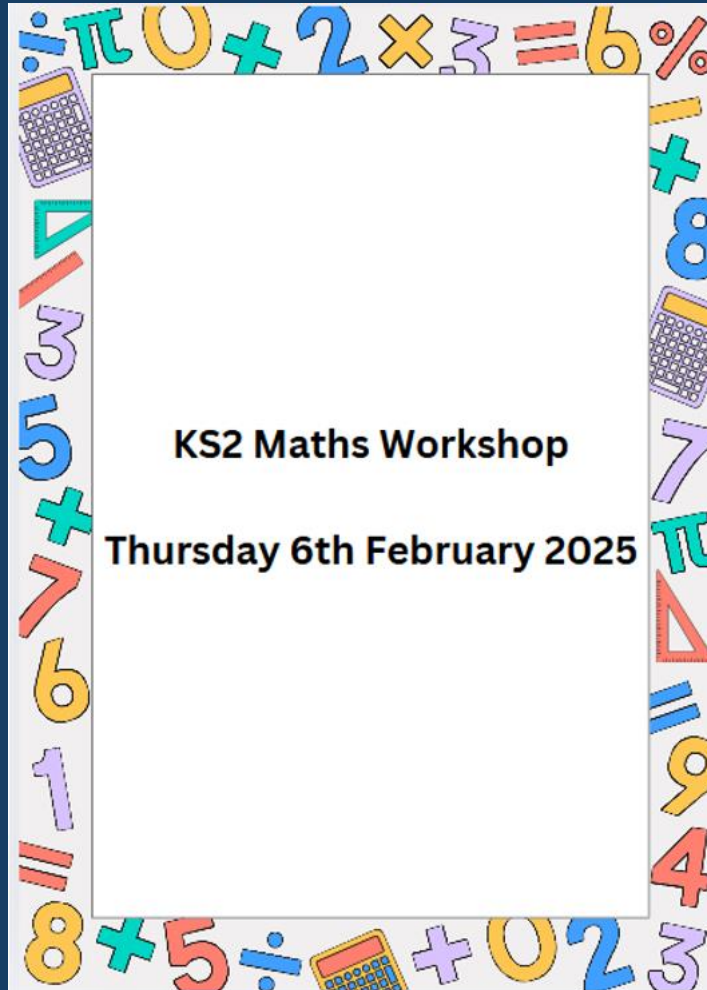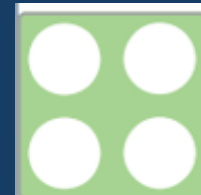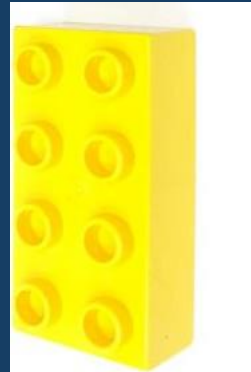
Home resources

- Spaghetti and pasta
- Straws

- Counting in 2s

KS2 Maths Workshop

Thursday 6th February 2025

- Lego instead of numicon
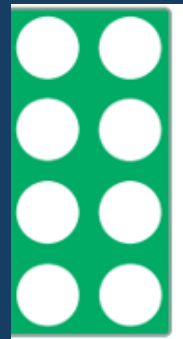
Keep maths fun…

- Sudoku puzzles, logic games etc. are really valuable for helping children with their maths.
- Shopping – find me the cheapest tin of beans, calculate change
- Walking – house numbers, number of steps, cars driving by
- Cooking – doubling/halving quantities, measuring
- Board games and card games
- Problem solving questions
- Guess the number games

Parent Feedback

Maths Workshop