

Practical activities to support with maths learning at home

KS1 - 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



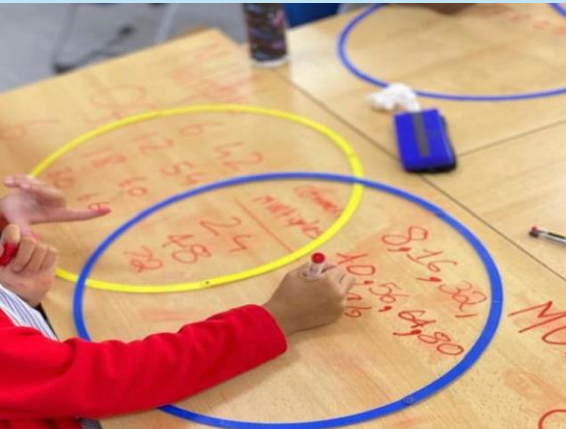
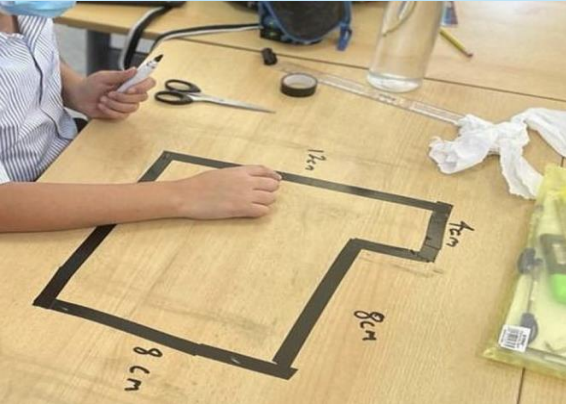
Key stage 1 - Years 1 and 2

- Ensure that pupils develop confidence and mental fluency with whole numbers, counting and place value.
- Recognise, describe, draw, compare and sort different shapes and use the related vocabulary.
- By the end of year 2, pupils should know the number bonds to 20.

Key stage 2 – Years 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.

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 Scheme

The learning taught each year is reviewed at the start of the following year.

For example, we learn number bonds in Year 1 and this is covered again in Year 2, but more in depth.

Why?

This will give the pupils time to work on the learning objective again but at a quicker pace as we will then build upon their current knowledge.



White Rose Maths - Website

www.whiteroseeducation.com

Free maths home workbooks

Free interactive resources to support at home



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1-minute maths

Digital tools

Maths with Michael

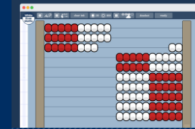
Free digital tools



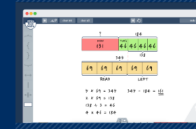
Place value chart



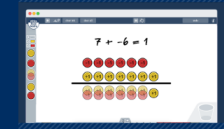
Algebra tiles



Rekenrek



Bar model



Double-sided counters

Get the free workbooks

Year 1

Year 2

Year 3

Year 4

Year 5

Year 6



Autumn Block 1
Place value (within 10)



Autumn Block 2
Addition and subtraction
(within 10)



Autumn Block 3
Shape



Autumn Block 4
Place value (within 20)



Spring Block 1
Addition and subtraction
(within 20)

*links to the current learning will be on the Week Ahead document or homework sent by class teachers on Dojo.

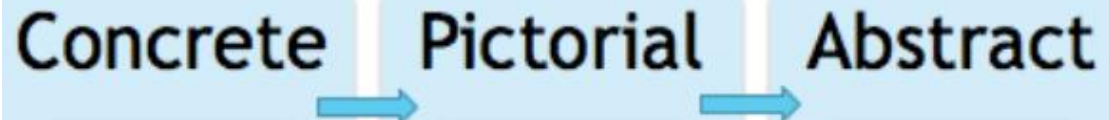


Calculation Policy

- 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.



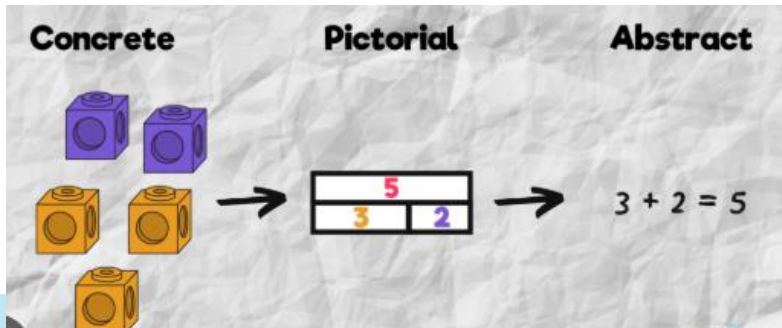
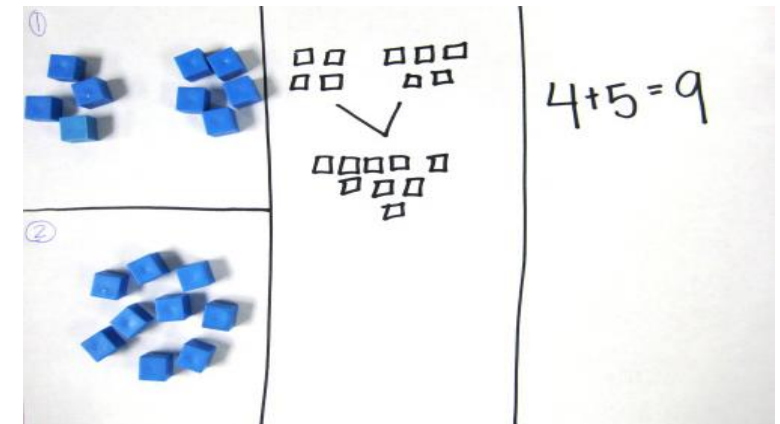
CPA approach



- 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.



I hear and I forget. I see and I remember. I do and I understand.

Parent Task

How would you answer this question?

Describe the number 25.

As adults, our perception of numbers tends to be 'fixed'. With our students, we want to encourage them to think flexibly about numbers and explore numbers in multiple ways.

Parent Task

How would you answer this question?

1) $65 - 28 =$

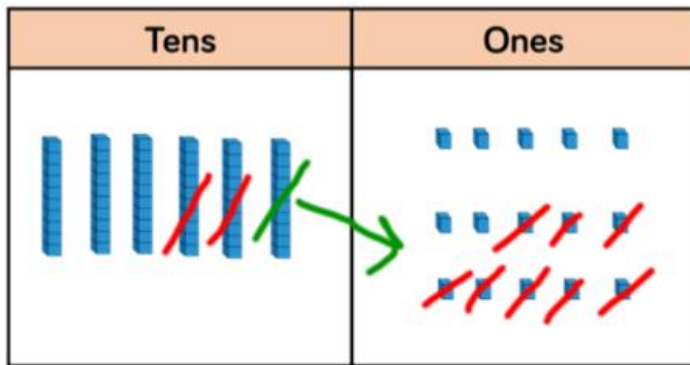
2) $435 - 273 =$

You can use column method, but we don't teach this in the early stages, as we want to show different strategies.

This help with understanding what they are learning.

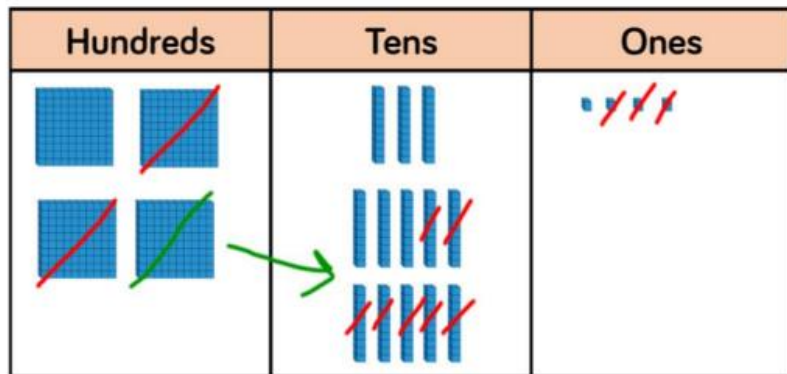
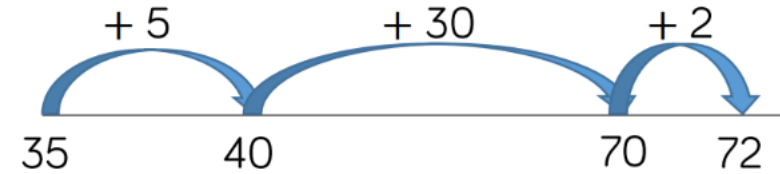


- Teaching for understanding and not just short cuts
 - Providing children with a range of strategies



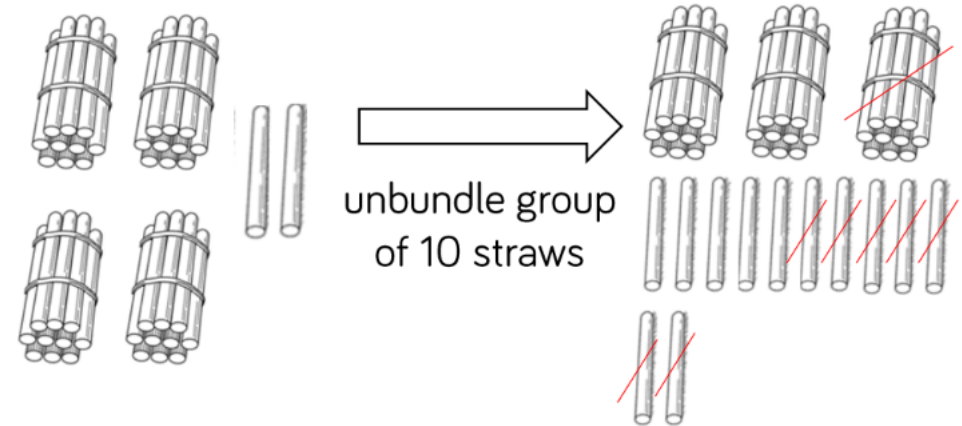
$$\begin{array}{r} 5 \quad 1 \\ 65 \\ - 28 \\ \hline 37 \end{array}$$

$$72 - 35 = 37$$



$$\begin{array}{r} 3 \quad 1 \\ 435 \\ - 273 \\ \hline 262 \end{array}$$

$$42 - 17 = 25$$



Parent Task

How would you answer this question?

1) $38 + 23 =$

2) $265 + 164 =$

You can use column method, but we don't teach this in the early stages, as we want to show different strategies.

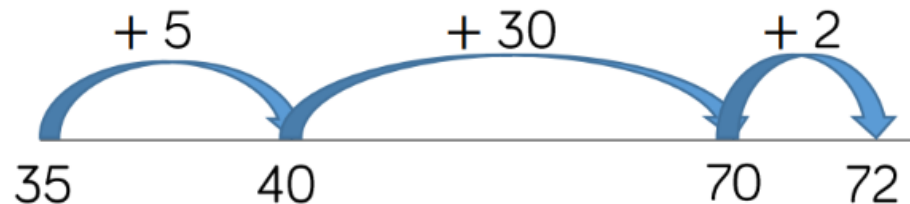
This helps with understanding what they are learning.



Tens	Ones

$$\begin{array}{r} 38 \\ + 23 \\ \hline 61 \\ \hline 1 \end{array}$$

$$35 + 37 = 72$$



Hundreds	Tens	Ones

$$\begin{array}{r} 265 \\ + 164 \\ \hline 429 \\ \hline 1 \end{array}$$

Hundreds	Tens	Ones

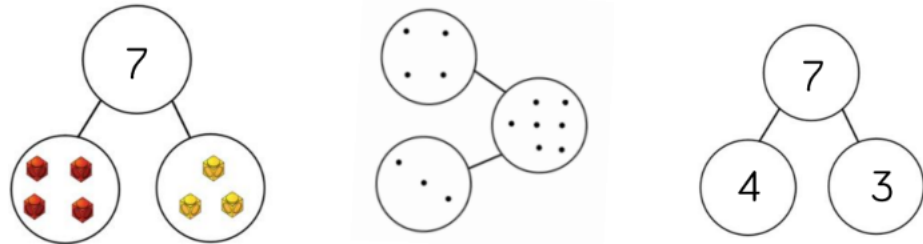
$$\begin{array}{r} 384 \\ + 237 \\ \hline 621 \\ \hline 1 \ 1 \end{array}$$



Skill	Year	Representations and models	
Add two 1-digit numbers to 10	1	Part-whole model Bar model Number shapes	Ten frames (within 10) Bead strings (10) Number tracks
Add 1 and 2-digit numbers to 20	1	Part-whole model Bar model Number shapes Ten frames (within 20)	Bead strings (20) Number tracks Number lines (labelled) Straws
Add three 1-digit numbers	2	Part-whole model Bar model	Ten frames (within 20) Number shapes
Add 1 and 2-digit numbers to 100	2	Part-whole model Bar model Number lines (labelled)	Number lines (blank) Straws Hundred square
Add two 2-digit numbers	2	Part-whole model Bar model Number lines (blank) Straws	Base 10 Place value counters Column addition
Add with up to 3-digits	3	Part-whole model Bar model	Base 10 Place value counters Column addition

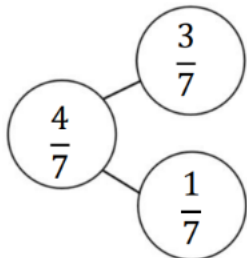
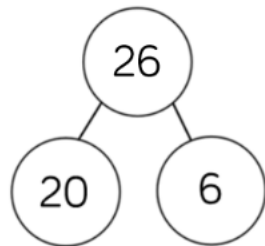
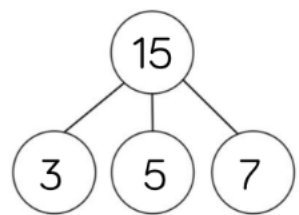


Part Whole Model



$$7 = 4 + 3$$
$$7 = 3 + 4$$

$$7 - 3 = 4$$
$$7 - 4 = 3$$



- 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.

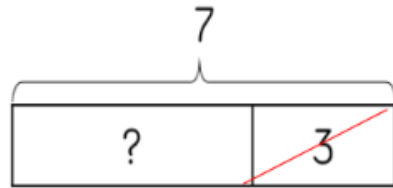
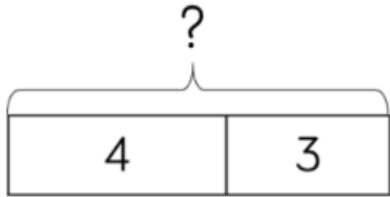


Bar Model

Concrete



Continuous



- 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

Hundreds	Tens	Ones

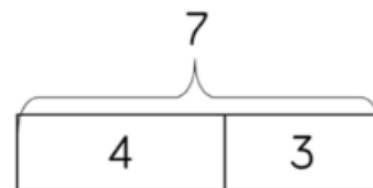
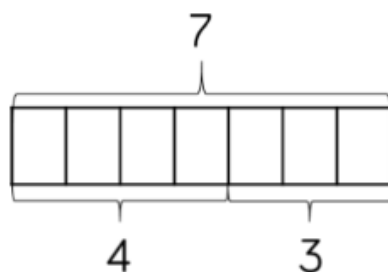
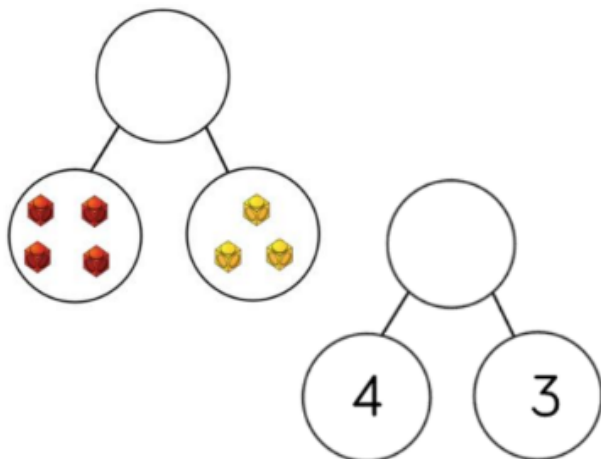
$$\begin{array}{r} 4 \quad 1 \\ 652 \\ - 207 \\ \hline 445 \\ \hline \end{array}$$

- 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.

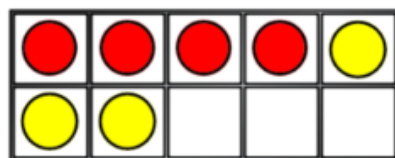
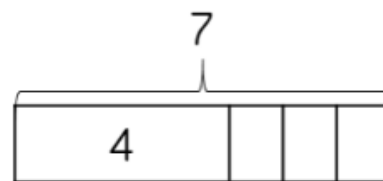


Skill: Add 1-digit numbers within 10

Year: 1



$$4 + 3 = 7$$



When adding numbers to 10, children can explore both aggregation and augmentation.

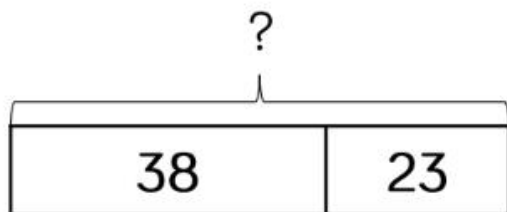
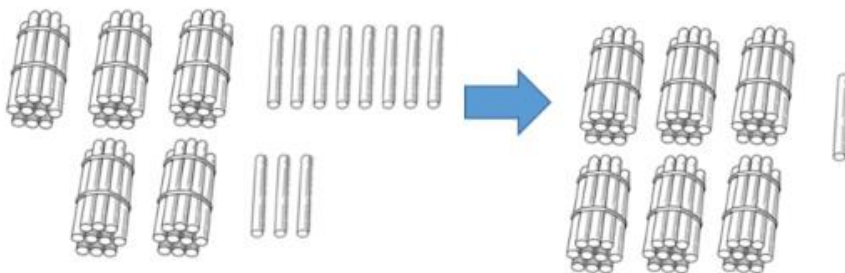
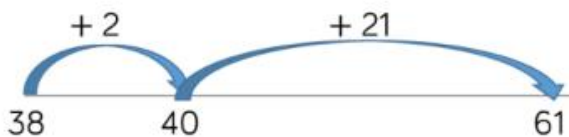
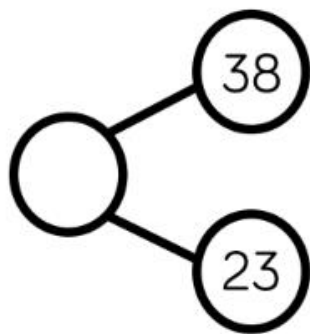
The part-whole model, discrete and continuous bar model, number shapes and ten frame support aggregation.

The combination bar model, ten frame, bead string and number track all support augmentation.



Skill: Add two 2-digit numbers to 100

Year: 2/3



$$38 + 23 = 61$$

Tens	Ones

$$\begin{array}{r} 38 \\ + 23 \\ \hline 61 \\ \hline 1 \end{array}$$

Tens	Ones

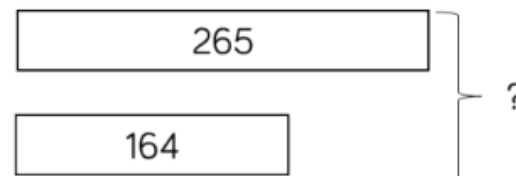
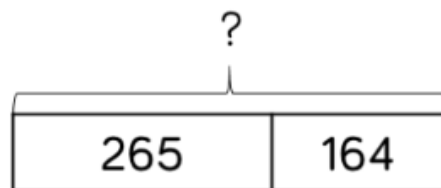
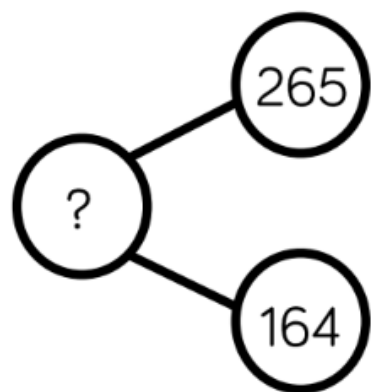
At this stage, encourage children to use the formal column method when calculating alongside straws, base 10 or place value counters. As numbers become larger, straws become less efficient.

Children can also use a blank number line to count on to find the total. Encourage them to jump to multiples of 10 to become more efficient.



Skill: Add numbers with up to 3 digits

Year: 3



$$265 + 164 = 429$$

Hundreds	Tens	Ones

$$\begin{array}{r} 265 \\ + 164 \\ \hline 429 \\ 1 \end{array}$$

Hundreds	Tens	Ones

Base 10 and place value counters are the most effective manipulatives when adding numbers with up to 3 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.



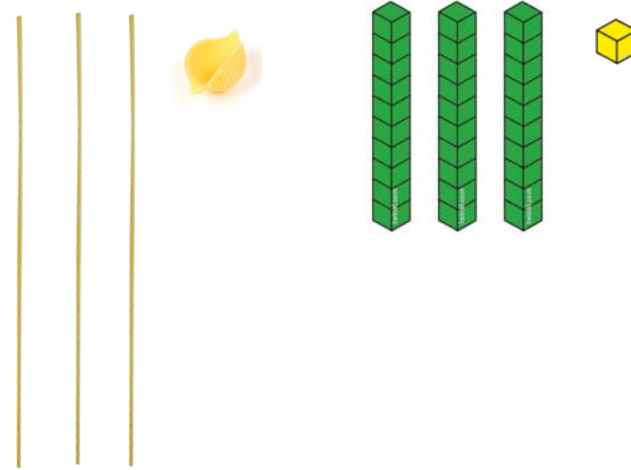
Fluency

- Although we show the pupils a range of ways to find answers, for some elements of maths (arithmetic), quick recall and fluency is also required as this will make completing certain questions easier for them e.g. times tables.
- Year 1 and Year 2 – By the end of Year 2, children are expected to know their 2, 5 and 10 times table with speed.
- By the end of Year 3, children are expected to know the 2, 5, 10, 3, 4 and 8 times tables with speed.



Home resources

- Spaghetti and pasta
- Straws

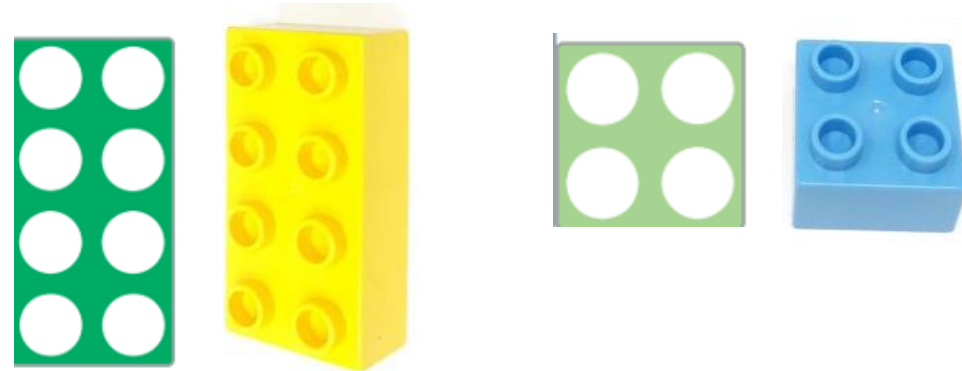


- Counting in 2s



KS1 Maths Workshop
Tuesday 4th 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/apartment numbers, number of steps, cars driving by
- Cooking – doubling/halving quantities, measuring
- Board games and card games
- Problem solving questions
- Guess the number games

1-Minute
Maths – White
Rose Maths
app





Parent Feedback

Maths Workshop

