

# Maths Coffee Morning

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10th February 2025

## Sully Primary Maths Vision

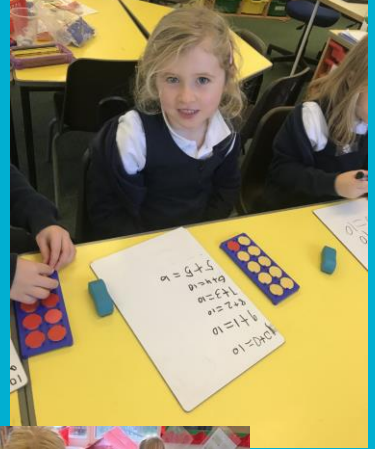
At Sully Primary School, we are inspiring young mathematicians to take notice, make mistakes through their learning and develop a positive attitude towards maths. Pupils are developing confidence in using manipulatives to develop their skills as part of the CPA (concrete, pictorial, abstract) approach. In our school, we encourage our pupils to recognise that Maths isn't just about the destination, but also the journey whereby they discover for themselves which tools and skills they need to get there. Sully Mathematicians challenge themselves to be resilient and agile problem solvers who are empowered to apply mathematical strategies to everyday life. With our guidance, and by providing a fun and engaging environment, our children can discover and understand that Maths is everywhere!



1/23/16: 16 represent a number in different ways.

Write it      Make it      Represent it

16



Reproduce the value of digits up to 1,000,000

Write numbers up to 1,000,000 using number sentences

Partition Numbers to 1,000,000

130,000,000	28,000,000
10,000,000	1,200,000
5,000,000	2,000,000
3,160,008	8,172,204

33,000,005    4,050,000 ✓  
 7,000,000    5,571,000 ✓  
 3,903,715 ✓    6,055,171 ✓

55,000,533    2,500,000 ✓  
 3,500,000    2,600,000 ✓  
 5,355,533    3,000,000 ✓  
 2,178

79,200,000    5,000,000 ✓  
 48,000,000    2,200,000 ✓  
 1,000,000 ✓    5,290,000 ✓

98,200,000    7,000,000 ✓  
 2,500,000 ✓    2,600,000 ✓  
 2,000,000 ✓    2,178

8,274,566

Write numbers up to 1,000,000 using number sentences

1000 = 10 x 100  
 100 = 10 x 10  
 10 = 10 x 1

Smallest      Rose      Biggest

less ←      more →

10      18



**NUMERACY**

COLLABORATIVE CODE-BREAKING

One million = 1,000,000  
 10 million = 10,000,000  
 Half a million = 500,000

ascending ↑  
 descending ↓

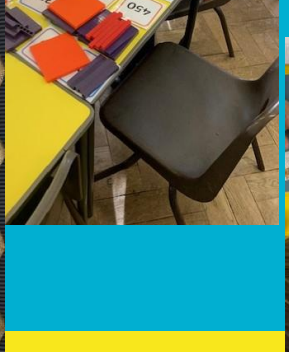
**X**  
 x10      when we x by 10, we move 1 column to the left

**÷**  
 ÷10      when we ÷ by 10, we move 1 column to the right

**x100**  
 when we x by 100, we move 2 columns to the left

**÷100**  
 when we ÷ by 100, we move 2 columns to the right

Factors of      common factors



**Maths**

Equal to      Less than      Greater than

8 = 8      23 < 31      46 > 38

26      20      6

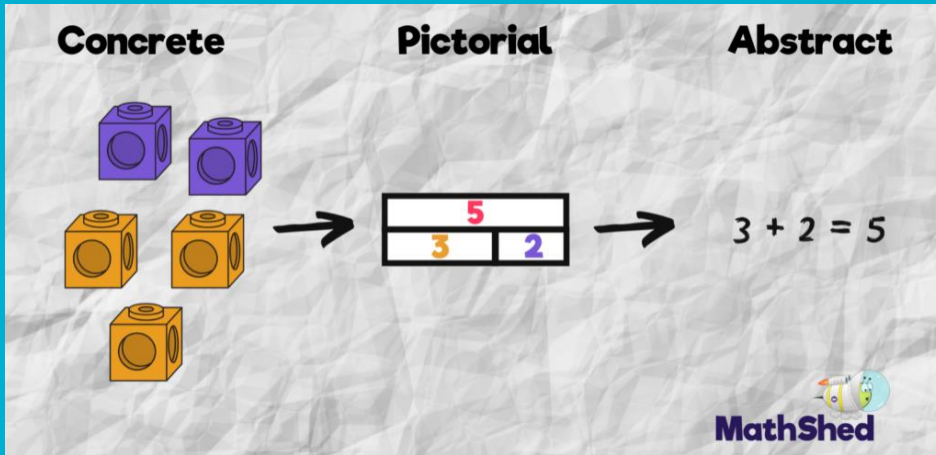
One - 1  
 Two - 2  
 three - 3  
 four - 4  
 five - 5  
 six - 6  
 seven - 7  
 eight - 8  
 nine - 9  
 ten - 10

5 Bonds 40

0 + 10 = 10	70 + 30 = 100
1 + 9 = 10	80 + 20 = 100
2 + 8 = 10	90 + 10 = 100
3 + 7 = 10	99 + 1 = 100
4 + 6 = 10	98 + 2 = 100
5 + 5 = 10	97 + 3 = 100
6 + 4 = 10	96 + 4 = 100
7 + 3 = 10	95 + 5 = 100
8 + 2 = 10	94 + 6 = 100
9 + 1 = 10	93 + 7 = 100
10 + 0 = 10	92 + 8 = 100
0 + 10 = 10	91 + 9 = 100
10 + 0 = 10	90 + 10 = 100

# CPA Approach

Concrete - Pictorial - Abstract



## The CPA Approach

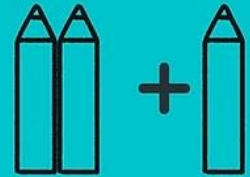


### C for Concrete

Using physical objects to solve a problem

### P for Pictorial

Using drawings to solve math problems



### A for Abstract

Solving math problems using only numbers



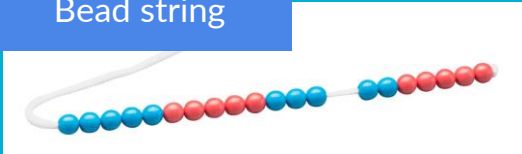


Double sided counters

Numicon



Bead string



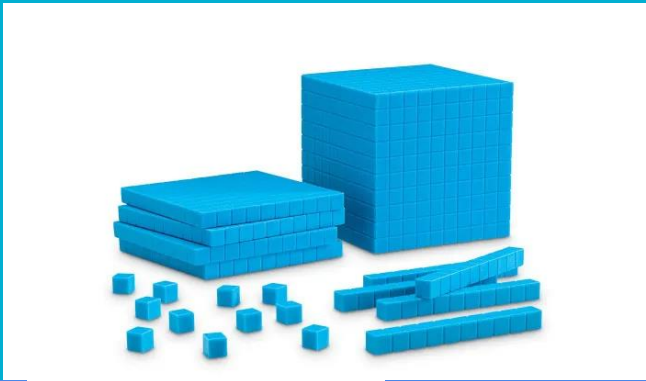
Translucent counters



Place value counters

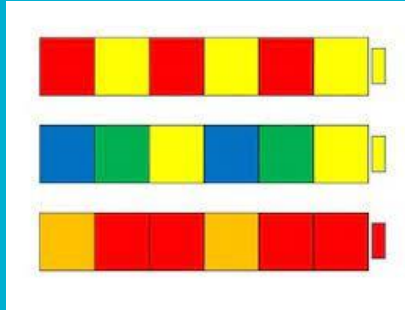


Cubes

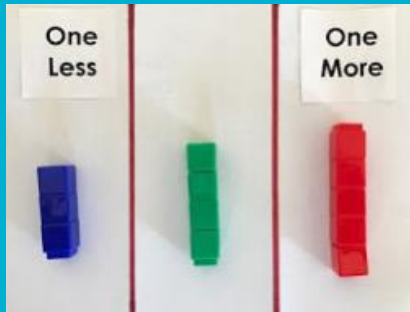


Base 10/Dienes

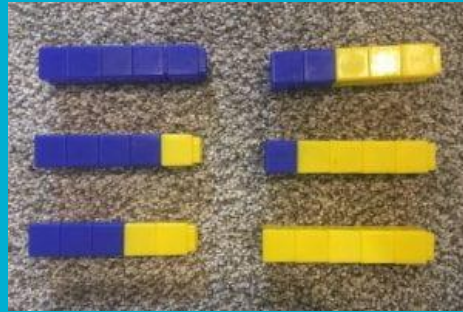
# Unifix cubes



Sequencing patterns



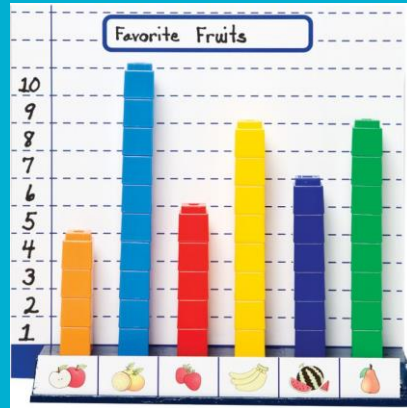
One more/one less



Number bonds



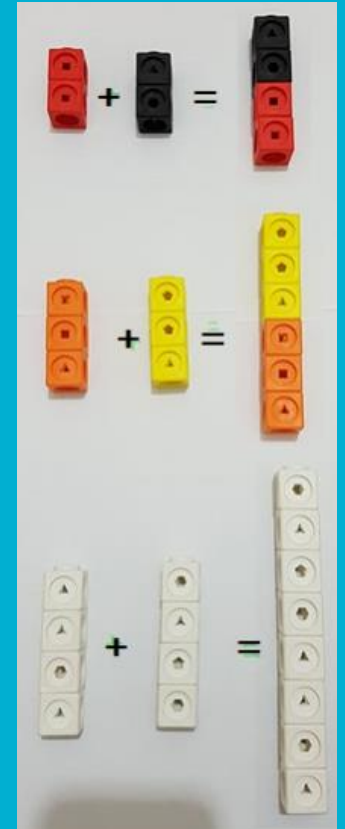
Measurement using non standard units



Bar charts

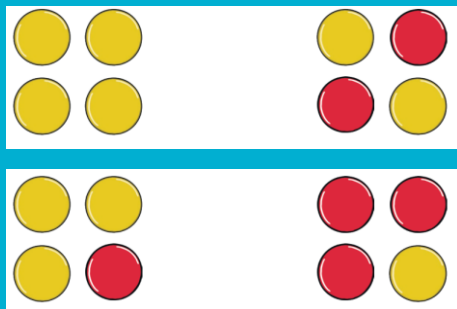


Ratio

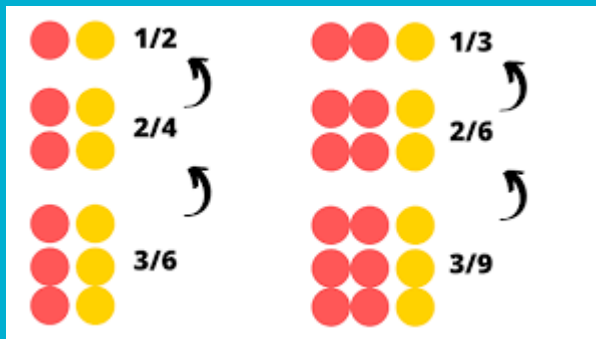


Doubling & halving

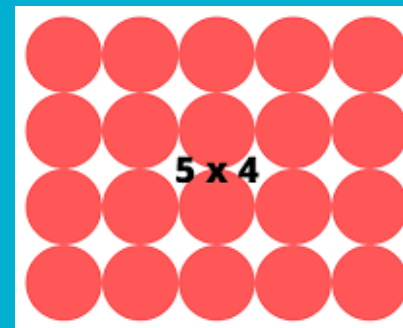
# Two sided counters



Number bonds/Number composition



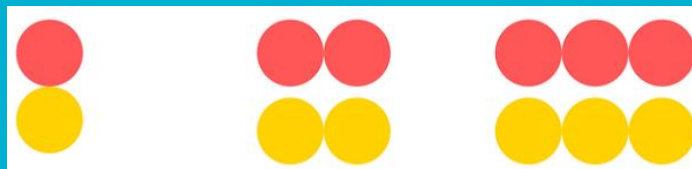
Equivalent fractions



Arrays  
(Multiplication)

TTh	Th	H	T	O	T	H	T
●●	●	●●●●	●●	●	●●●	●●	●●●

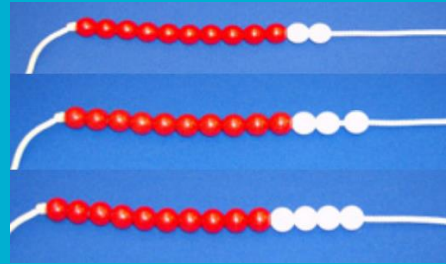
Place value



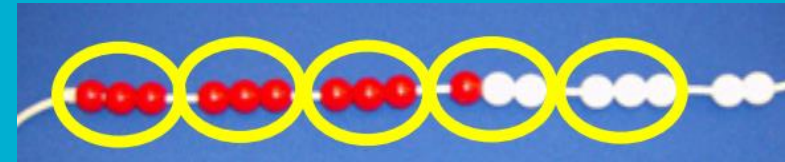
Doubles and halves

# Bead strings

- Counting to 100
- Counting in 10s
- Number bonds to 100
- Ordering numbers to 100



One more, one less



Division with or without remainders



Percentages  
Equivalence of FDP



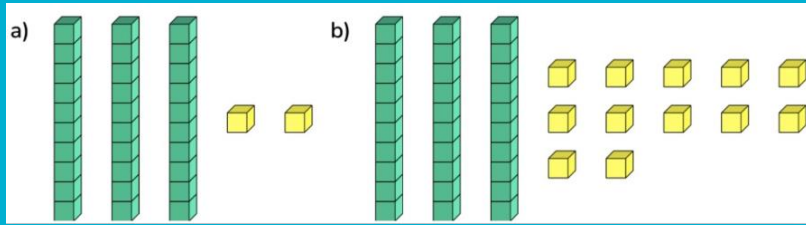
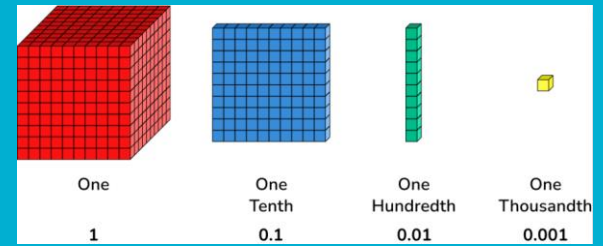
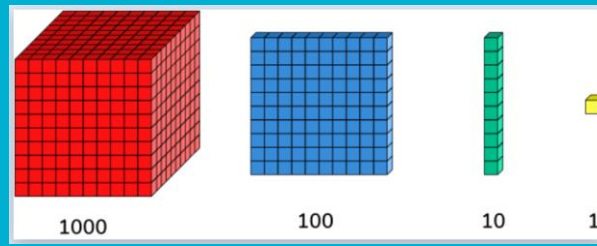
Negative numbers



What's the same, what's different?

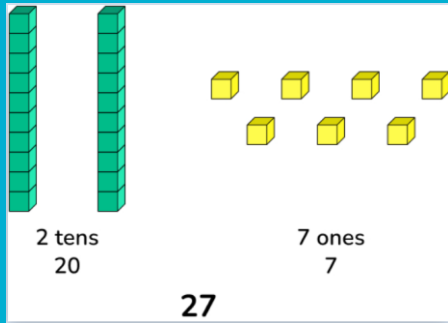


# Base 10/Dienes

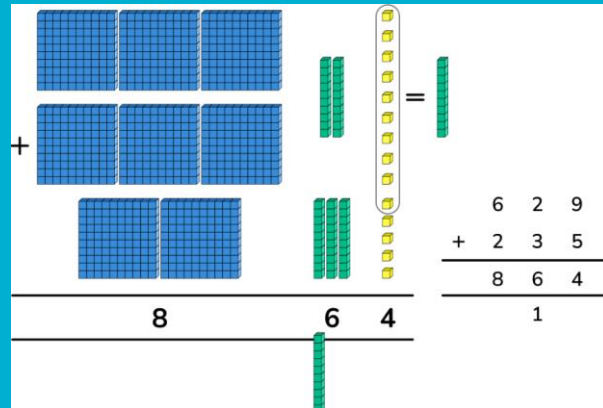


Representing numbers in different ways

Representing place value (integers and decimals)

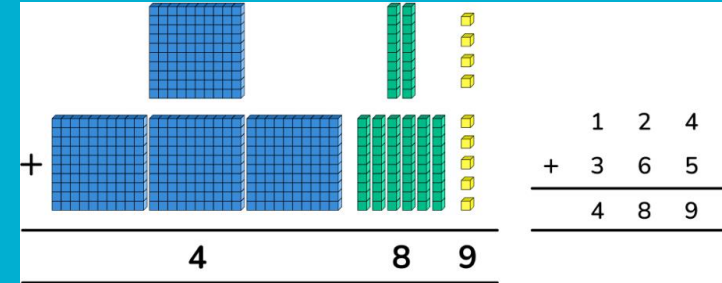


Composition of number



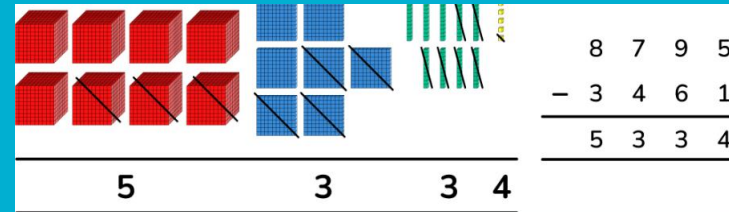
$$\begin{array}{r} 6 \ 2 \ 9 \\ + 2 \ 3 \ 5 \\ \hline 8 \ 6 \ 4 \\ \hline 1 \end{array}$$

Addition (with exchanging)



$$\begin{array}{r} 1 \ 2 \ 4 \\ + 3 \ 6 \ 5 \\ \hline 4 \ 8 \ 9 \\ \hline \end{array}$$

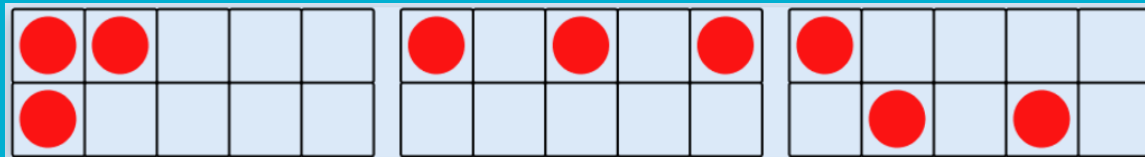
Addition



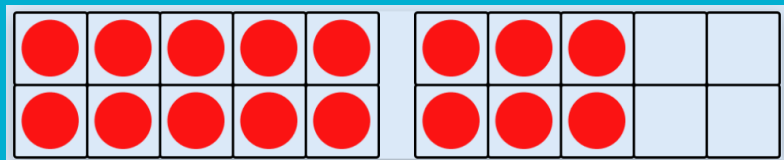
$$\begin{array}{r} 8 \ 7 \ 9 \ 5 \\ - 3 \ 4 \ 6 \ 1 \\ \hline 5 \ 3 \ 3 \ 4 \\ \hline \end{array}$$

Subtraction

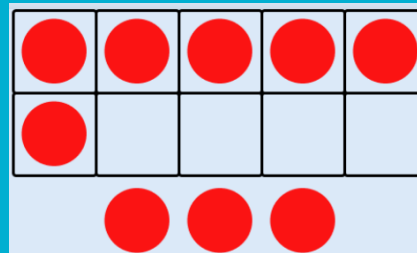
# 10s Frame



Subitising



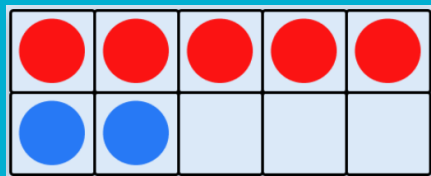
Counting beyond 10



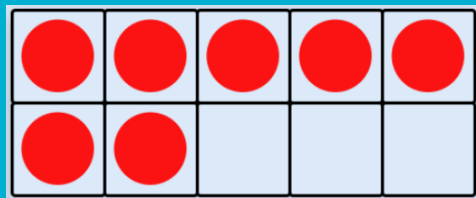
Subtraction



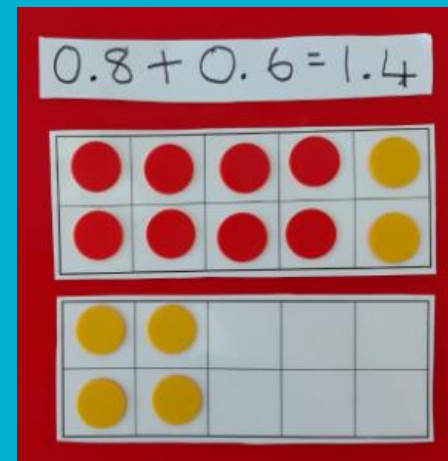
Counting in 10s



Addition/Number bonds

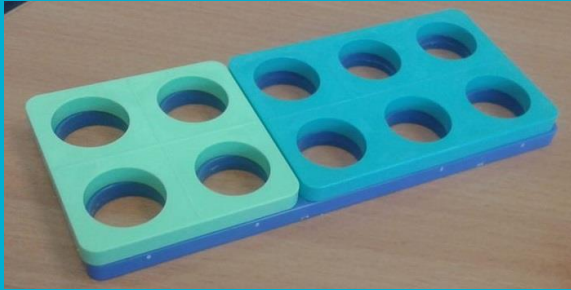


Tenths  
 $7/10$  or  $0.7$



Adding tenths

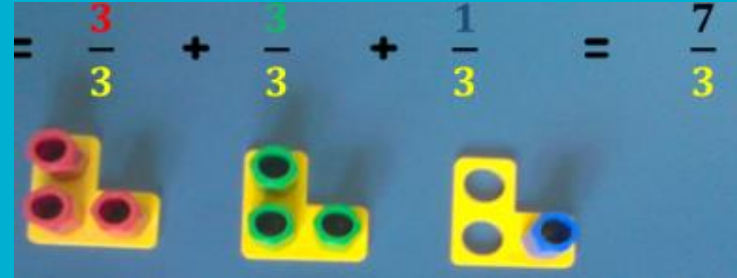
# Numicon



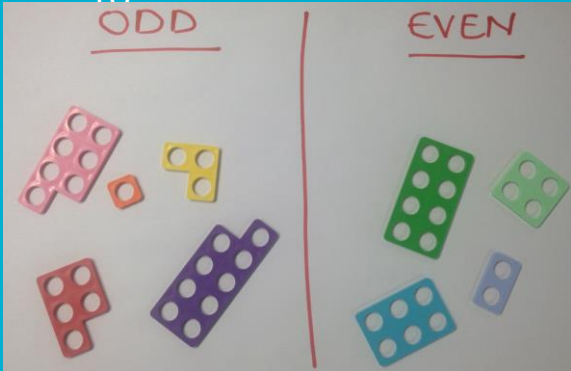
Number bonds within 10



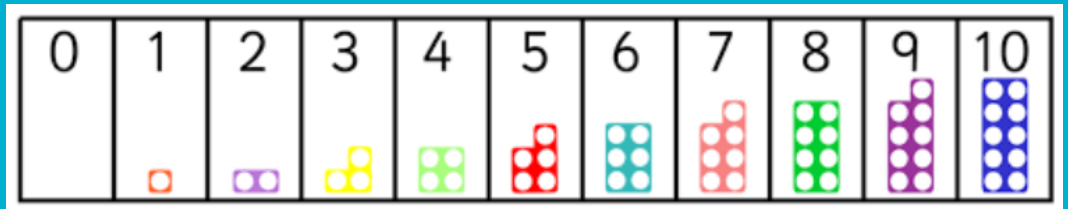
Representing fractions



Adding fractions




Recognising odds and evens





Number line


# Numicon

Factors 2 numbers multiplied to reach another number

1 

2 

3 

6 

6

1	6
2	3
3	2
6	1

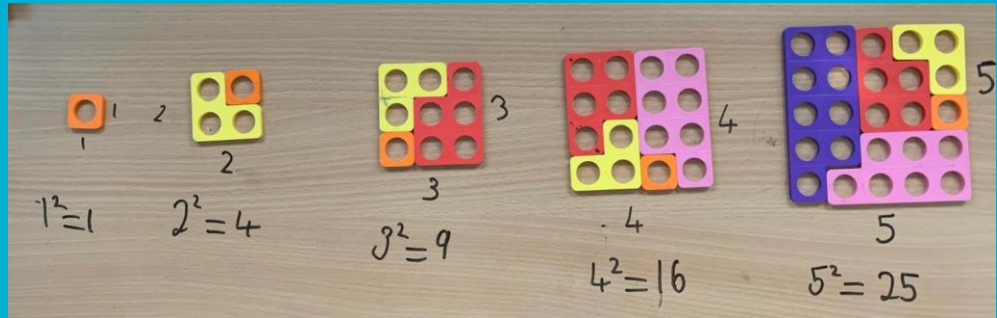
factors of 6 = 1, 2, 3 and 6  
factor pairs = 1 and 6, 2 and 3

Factors

NUMICON

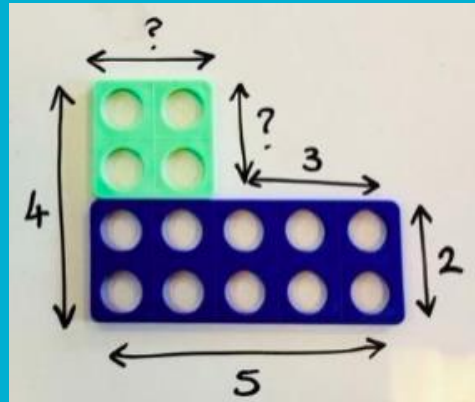


Calculate area



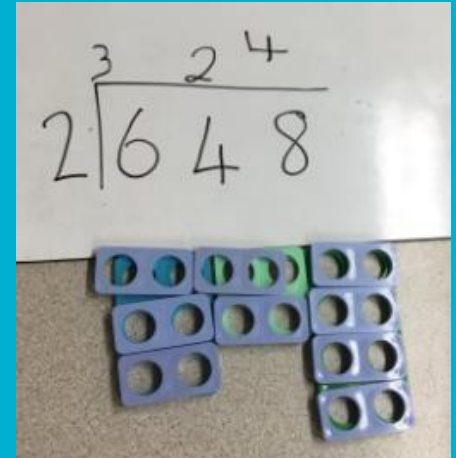
$1^2 = 1$     $2^2 = 4$     $3^2 = 9$     $4^2 = 16$     $5^2 = 25$

Square numbers



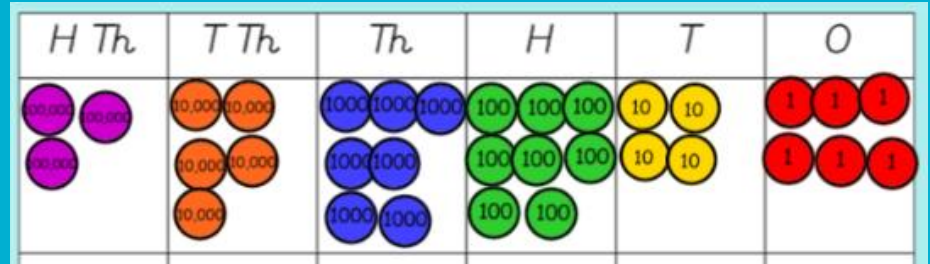
Calculate perimeter

$$\begin{array}{r} 324 \\ 2 \overline{) 648} \end{array}$$

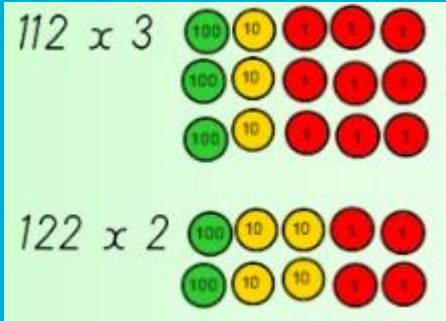


Short division

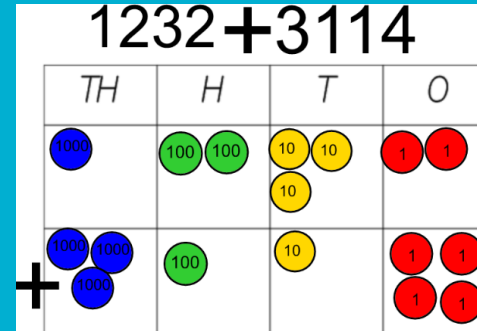
# Place value counters



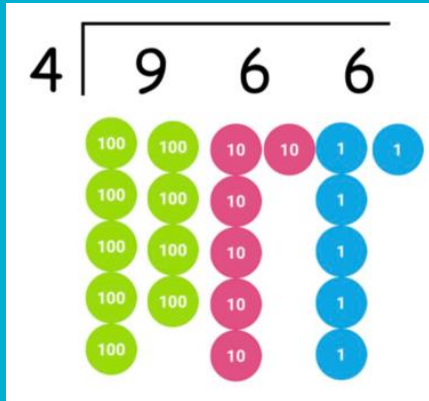
Understanding place value



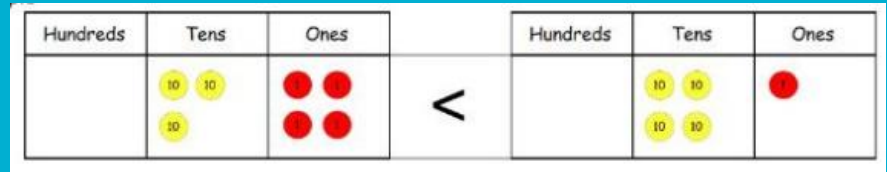
Multiplying by a 1-digit number



Addition



Short division



Comparing numbers using  $<$   $>$   $=$

# Resources at home

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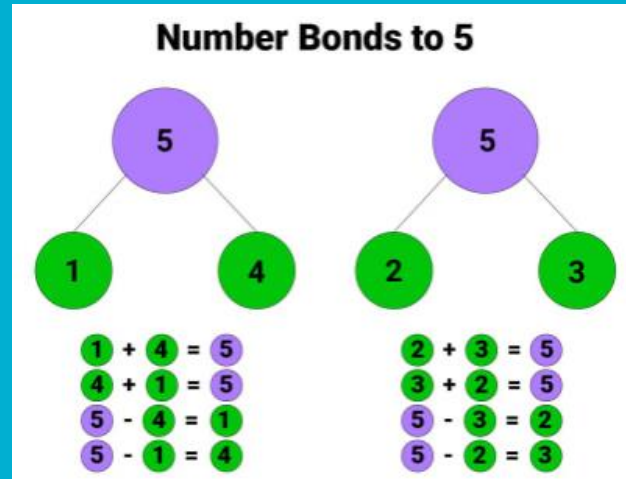
# Mathematical fluency

**Subitising**

$\text{eye} > \text{die} = 5$   
 $\text{eye} > \text{ladybug} = 6$   
 $\text{eye} > \text{coins} = 3$   
 $\text{eye} > \text{buttons} = 4$

Subitising

Number bonds to and within 20 (including doubling and halving)



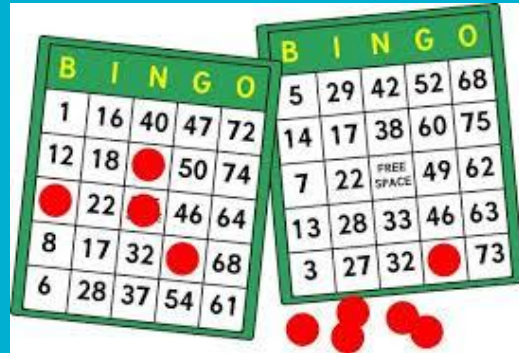
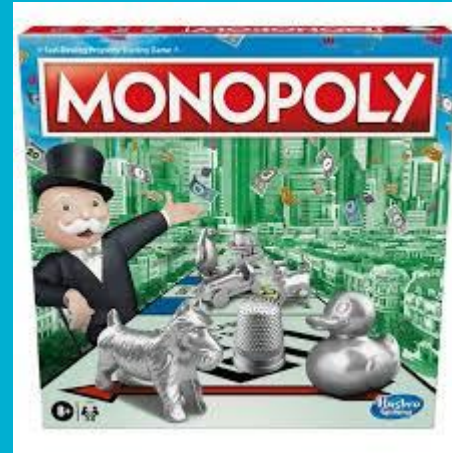
1x	2x	3x	4x	5x
1x1=1	2x1=2	3x1=3	4x1=4	5x1=5
1x2=2	2x2=4	3x2=6	4x2=8	5x2=10
1x3=3	2x3=6	3x3=9	4x3=12	5x3=15
1x4=4	2x4=8	3x4=12	4x4=16	5x4=20
1x5=5	2x5=10	3x5=15	4x5=20	5x5=25
1x6=6	2x6=12	3x6=18	4x6=24	5x6=30
1x7=7	2x7=14	3x7=21	4x7=28	5x7=35
1x8=8	2x8=16	3x8=24	4x8=32	5x8=40
1x9=9	2x9=18	3x9=27	4x9=36	5x9=45
1x10=10	2x10=20	3x10=30	4x10=40	5x10=50

6x	7x	8x	9x	10x
6x1=6	7x1=7	8x1=8	9x1=9	10x1=10
6x2=12	7x2=14	8x2=16	9x2=18	10x2=20
6x3=18	7x3=21	8x3=24	9x3=27	10x3=30
6x4=24	7x4=28	8x4=32	9x4=36	10x4=40
6x5=30	7x5=35	8x5=40	9x5=45	10x5=50
6x6=36	7x6=42	8x6=48	9x6=54	10x6=60
6x7=42	7x7=49	8x7=56	9x7=63	10x7=70
6x8=48	7x8=56	8x8=64	9x8=72	10x8=80
6x9=54	7x9=63	8x9=72	9x9=81	10x9=90
6x10=60	7x10=70	8x10=80	9x10=90	10x10=100

Times tables facts (including division facts)

# Ways to help at home





# Ways to help at home

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## Playing cards



- **Number recognition** - playing a game of snap
- **Number recognition** - matching pairs
- **Addition/Subtracting** - turning over two cards and adding them together/subtracting one from the other
- **Ordering** - picking 5 from a pack and put them in ascending/descending order
- **Multiplication** - pick two at random and multiply them together. You can even make it a competition!

# Ways to help at home

## Chase the rabbit

- The leader chooses a two-digit number of their choice and the players place their finger on that number, on their 100 square. The leader then gives a series of instructions, such as 'add 10', 'subtract 20', 'add 3', 'subtract 2' etc. After each instruction, the players move their finger accordingly. After three to five instructions the Leader asks 'Where's the Rabbit?' and the first player to give the correct answer is the winner. The game is fun and a great way to develop calculation skills.

Hundred Square

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

# Ways to help at home

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- **Twenty questions**
- A game for two or more players, involving one person thinking of a number and the other players have to work out what it is by asking questions that can be answered 'Yes' or 'No'.
- For example, 'Is it a number between 0 and 100?' 'Is it odd?' 'Is the digit sum 3?' 'Is it greater or less than 24?' The players guessing only have 20 questions to work out what it is.

# Useful Websites

<https://www.topmarks.co.uk/learning-to-count/paint-the-squares>

<https://www.topmarks.co.uk/maths-games/hit-the-button>

<https://mathsframe.co.uk/en/resources/resource/318/Tommys-Trek-Times-Tables>

<https://www.bbc.co.uk/bitesize/topics/zb96p4j>



# “I’m so bad at Maths”

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