



Alwyn Infant School

Maths Workshop 2022

How to support your child with maths at home.

Why is maths so important?

- ▶ *It is essential to everyday life, critical to science, technology and engineering, and necessary for financial literacy and most forms of employment. A high-quality mathematics education therefore provides a foundation for understanding the world, the ability to reason mathematically, an appreciation of the beauty and power of mathematics, and a sense of enjoyment and curiosity about the subject.'*
- ▶ *(The National Curriculum)*

Areas of maths

- ▶ Number and place value
- ▶ Calculation and mental facts
- ▶ Understanding number
- ▶ Geometry (space, shape and measure)
- ▶ Measure
- ▶ Statistics - starts in Y2
- ▶ Using and applying - runs through all of the above maths sections

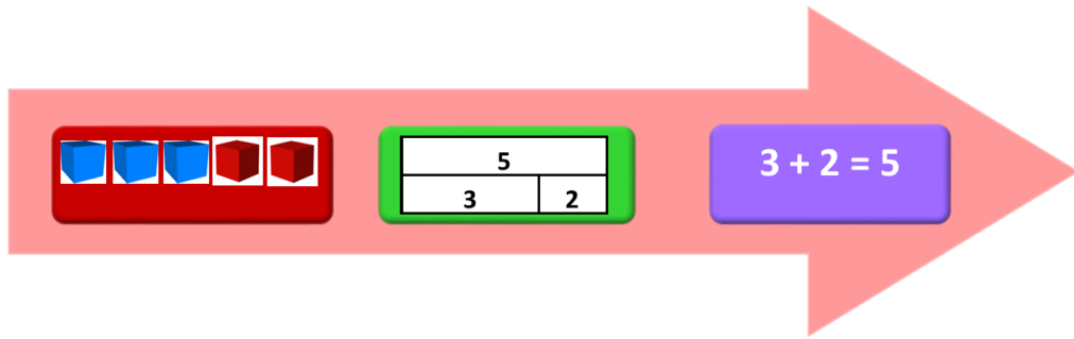
Today, we'll focus on areas that will help you to understand how to support your child at home with maths.

CPA - Concrete Pictorial Abstract

Approach to teaching maths

- ▶ Building understanding is very important in maths.
- ▶ Concrete apparatus is vital to help children to make connections to what numbers mean.
- ▶ We use resources to introduce new maths concepts.
- ▶ When children are comfortable using the concrete apparatus, they use pictures (normally of the resources they've used).
- ▶ They then move on to learning how to calculate in an abstract way.
- ▶ It could also be that there is a mixture of using concrete resources alongside pictures or abstract number sentences for example.

CPA approach



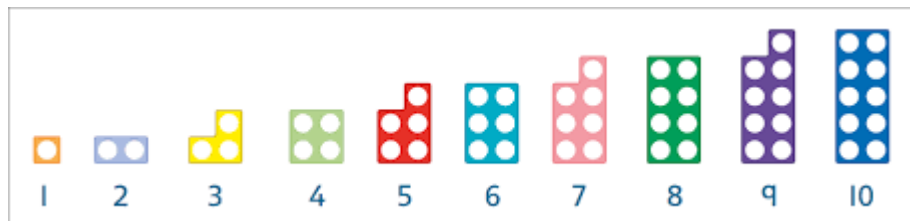
Using concrete resources is encouraged.

In the picture to the right, concrete resources (sheep counters) are used on a picture model (part-whole model).



Maths Resources we use at Alwyn

Numicon



- ▶ Numicon is used here to show pairs/bonds of 10 (how many different ways you can combine 2 numbers to make 10)



- ▶ Numicon is used to show the place value of numbers - the blue 10 piece is showing that the 1 in 13 stands for 1 ten, or the 2 in 20 stands for 2 tens



Maths Resources we use at Alwyn

▶ **Bead strings**

- ▶ These are super for showing what counting means - counting in 1 means moving 1 bead at a time, counting in 2s means moving 2 beads at a time...
- ▶ They are also great for adding and subtracting.



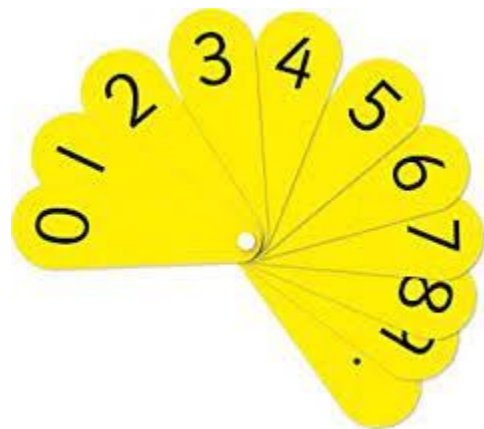
- ▶ $13 + 5$
- ▶ $29 - 14$

▶ **Dienes blocks**

- ▶ We may also call these tens and ones blocks
- ▶ They are used for showing the value of 2-digit numbers, for example the picture below shows 57 with 5 tens and 7 ones.
- ▶ We also use these to add and subtract 2-digit numbers, before moving onto drawing them out

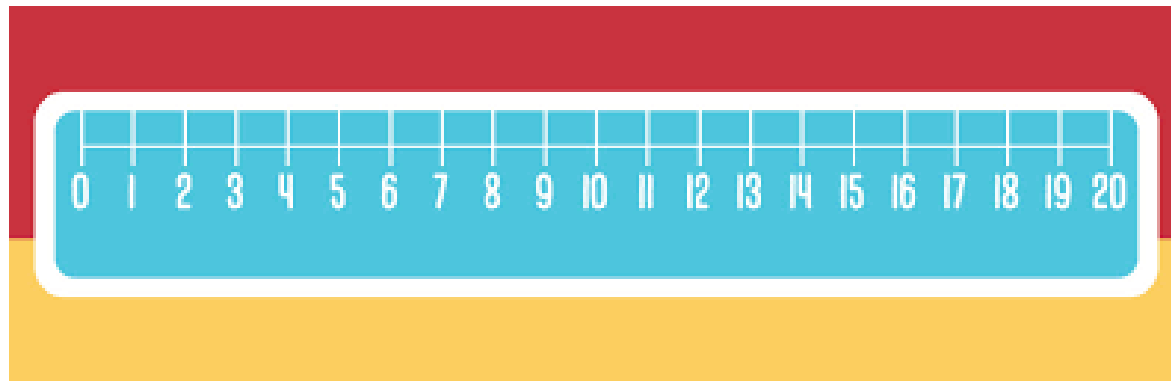


Maths Resources we use at Alwyn



Maths resources we use at Alwyn

Number tracks, number lines, 100 squares

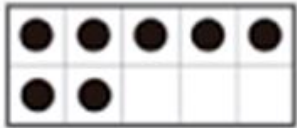
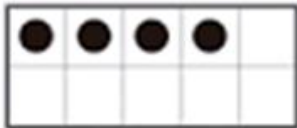


1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

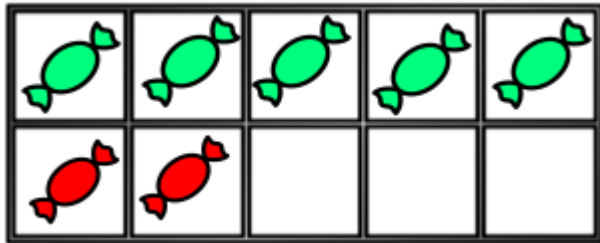
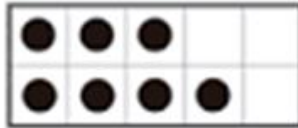
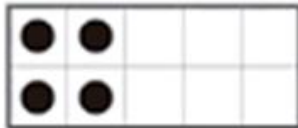
Fives frames and tens Frames



Five-wise Patterns



Pair-wise Patterns

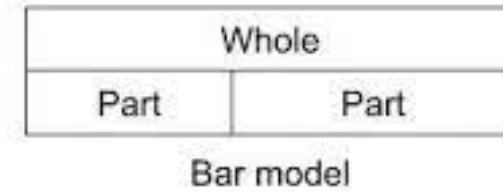
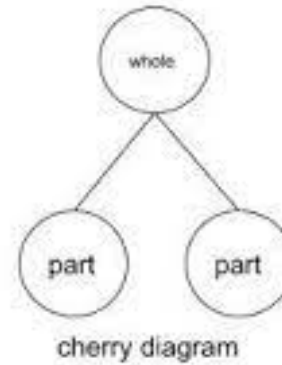


- ▶ These help children to build calculation skills and rely less on counting.
- ▶ Fives frames - 5 spaces for children to place counters onto
- ▶ Tens frames - can be arranged in a five-wise pattern where you fill up the top row of 5 first then fill up the bottom row
- ▶ Tens frames - can be arranged in a pair-wise pattern where you fill up in twos - this links well to Numicon shapes

Part-whole models

Bar models

- The 2 parts add together to make the whole.



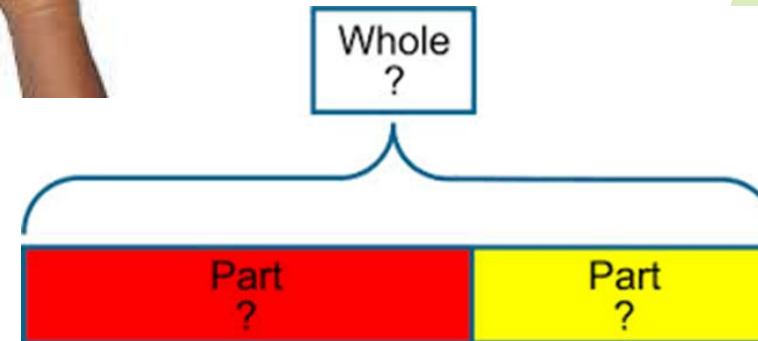
17

4

13

Miles is using this bar model to write a number fact family. Can you help fill out the answers?

$4+13=$
 $17-4=$
 $17-13=$
 $13+4=$



Activities...

12

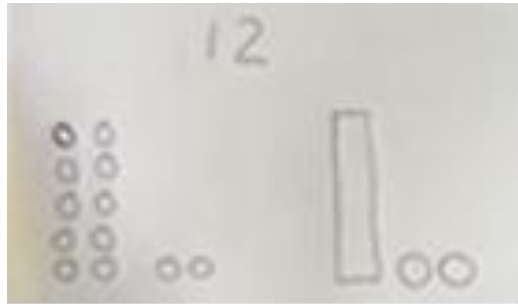
Tens and ones frames to show place value



Activities...

12

We'd then move onto drawing out 12

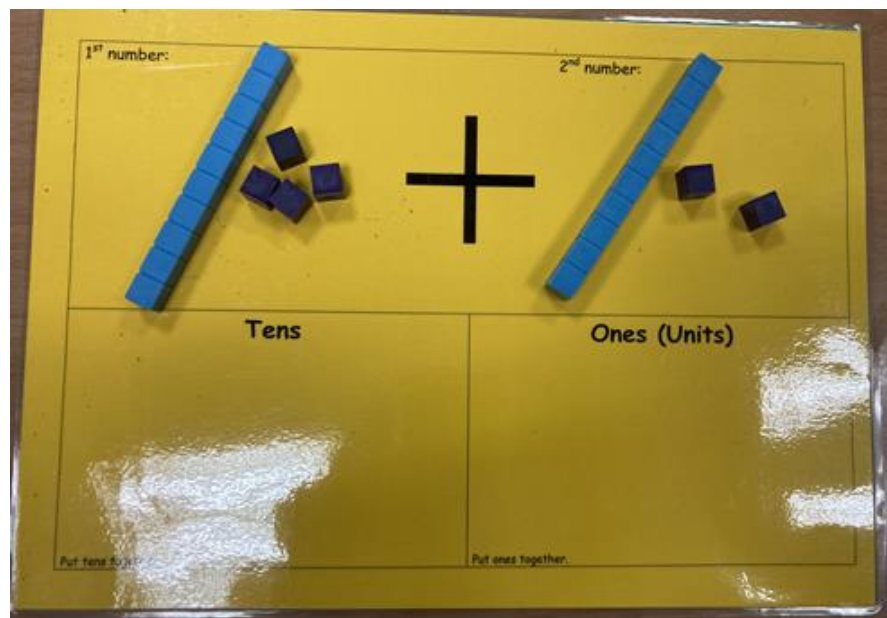


- ▶ Year 1 would draw Numicon shapes as shown in the picture, or dienes blocks mixed with circles.
- ▶ We encourage children to draw circles rather than blocks for ones as they are quicker and easier to draw.
- ▶ When ready, Year 2 children will draw lines and circles.

Activities

Adding frame and dienes

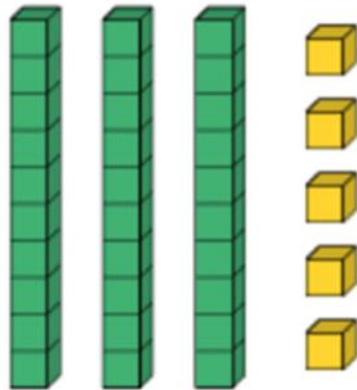
$$14 + 12$$



Activities

Subtraction with dienes and drawing out

$$35 - 13 =$$



- ▶ Let's practise with dienes
- ▶ What would we do?
- ▶ How would we draw this out?
- ▶ Let's look at exchange!

Helping children with *Mental Maths*: Counting

- ▶ Practise counting forwards and backwards:
 - in 1s
 - in 2s
 - in 5s
 - in 10s
- ▶ In Y2, practise counting forwards and backwards in 10s from different starting numbers
- ▶ In Y2, practise counting in 3s
- ▶ Counting on to add!

Helping children with Mental Maths: What are number bonds?

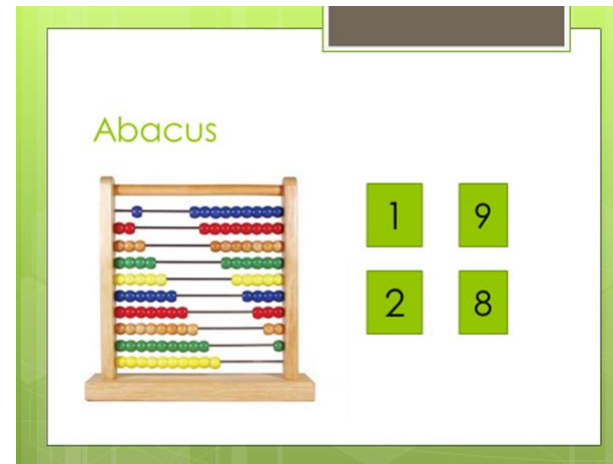
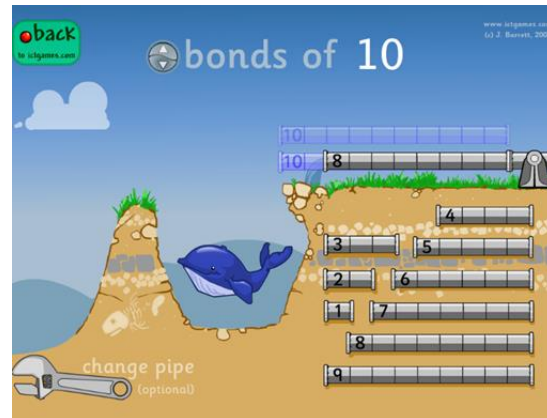
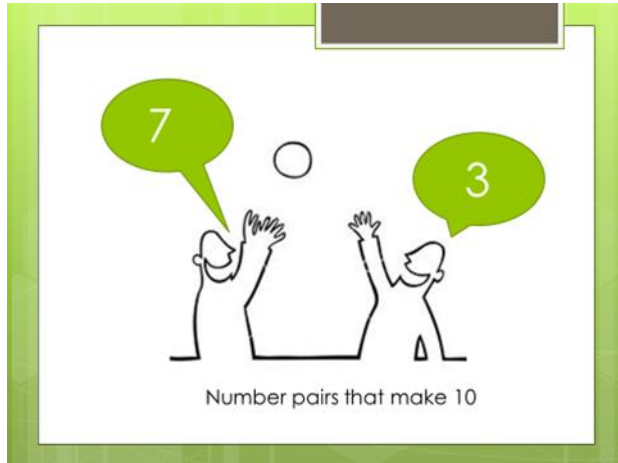
- ▶ Children need to know addition and subtraction facts for all numbers up to 10 by the end of Y2. They then use the bonds of 10 to work out bonds of 20 and of 100 (multiples of 10 - 40 + 60).
- ▶ Example: bonds of 5
- ▶ $0 + 5 = 5$
- ▶ $1 + 4 = 5$
- ▶ $2 + 3 = 5$
- ▶ $3 + 2 = 5$
- ▶ $4 + 1 = 5$
- ▶ $5 + 0 = 5$

- ▶ They also need to learn the matching subtraction facts.

Helping children with Mental Maths: Number Bonds - games or an abacus.

Dice games:

- Play board games using 2, rather than 1 dice.
- Or, just roll 2 dice and say the answer.
- Use dominoes – ask your child to find all the dominoes that are showing pairs of 8 for example.



How to help your child learn (recall/remember) number bonds:

Cards games:

- ▶ Memory game - put all cards face down and turn over 2 at a time.
- ▶ Snap - call out snap when you find 2 numbers that add up to the number you are making.



$$4 + 2$$

- ▶ Flash cards - hold up number pairs for your child to answer.
- ▶ Write the answers at the back of the cards and your child could practise them independently.

Helping children with Mental Maths: Times Tables

- ▶ Children in Y2 need to know their 2X, 5X and 10X tables.
- ▶ Help them to look for patterns - 5x tables end in fives or zeros.
- ▶ Make links with counting - holding up 3 fingers to help with 10 X 3
- ▶ Card games - make a set of X table cards, put answer on the back.
- ▶ Write times tables out and put them on your steps for children to see as they walk up



2 TIMES TABLE

$$\begin{aligned}2 \times 0 &= 0 \\2 \times 1 &= 2 \\2 \times 2 &= 4 \\2 \times 3 &= 6 \\2 \times 4 &= 8 \\2 \times 5 &= 10 \\2 \times 6 &= 12 \\2 \times 7 &= 14 \\2 \times 8 &= 16 \\2 \times 9 &= 18 \\2 \times 10 &= 20\end{aligned}$$

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Other fun activities to try at home...

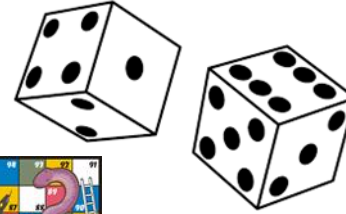
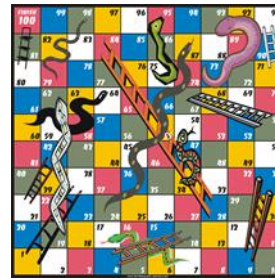
Look at coins - pocket money to pay and get change.



Measure: bake or cook (weighing) & capacity, measure height.



Look out for numbers in the environment.



Play board games and games with dice!
Why? Subitising and helps with understanding number tracks and 100 squares.





Questions

Thank you for coming