Roe Green Infant School

Year 2 Parents Maths Workshop

Wednesday 8th October 2025

MathsBeat

- At the heart of MathsBeat is the desire to make maths more available to more children. Two principles have been used throughout the programme:

1. Mathematical thinking is a natural human ability that all children can do through solving problems. Through learning maths, we can teach children to find the most efficient ways to solve problems.
2. No two classrooms are the same. MathsBeat provides progression with built-in flexibility, and regular formative assessment support, so teachers can choose to spend longer on a task or decide that their children are ready to move on.

- By using the sequences of carefully designed learning tasks, children will develop knowledge, fluency, reasoning and understanding.

Aims of this workshop

- Explain taught mathematics strategies in Year 2
- To familiarise you with taught processes using concrete materials
- How simple objects around your house can have a huge impact on your child's learning.
- How to support your child at home

- MATHS IS EVERYWHERE

Positivity is the key…

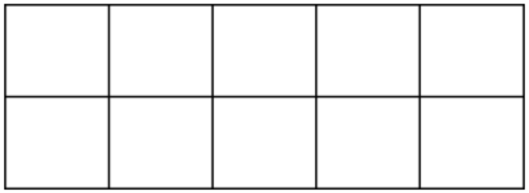
- Children who succeed at maths are usually the ones who enjoy it most, so remember – maths is fun, everyone!

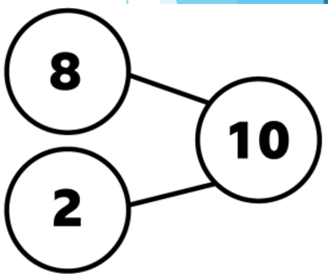
- Something we aim to promote in year two…. Even if that’s not the way you remember it from your own childhood. We all know how easily children pick up on the things we say, so it’s vital that you don’t pass on your dislike or fear of maths by saying things like ‘I was never any good at maths’ or ‘I hated maths at school.’

- We want mathematics to be a positive experience for everyone.

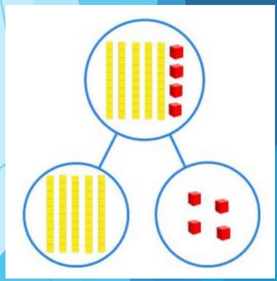
Maths Mastery: fluency, reasoning and problem solving

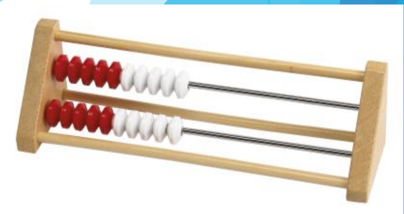
- Fluency:
  - involves knowing key mathematical facts and being able to recall them quickly and accurately.
  - This means being able to apply the same skill and knowledge to multiple contexts and be able to choose the most appropriate method for a particular task.





- We teach the content using a range of concrete resources to deepen the children's understanding by having them represent it in a variety of ways, ensuring that all children have sufficient time to practise what has been taught.
- We move from concrete materials, to pictorial representations to abstract questions. We encourage children to continue to use the resources to solve their problems and help to justify the answers.





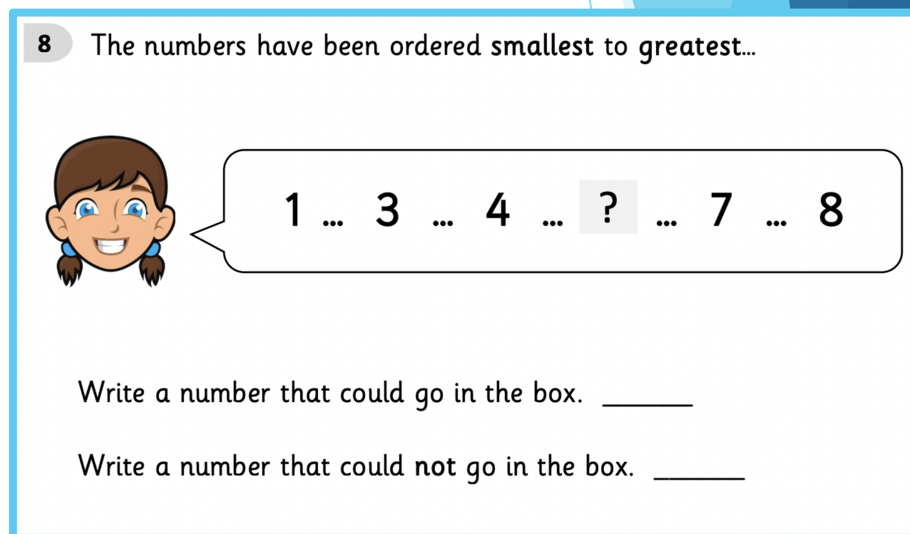
Reasoning:
What is reasoning in maths?

- Reasoning in maths is the process of applying logical thinking to a situation.
- Because we teach a range of strategies, this gives children a solid base and skill level to use the correct problem solving strategy for a given question. They are encouraged to use their mathematical language and methods to describe the solution.
- It is the “how do you know…?” or “why is the answer six and not seven?”
- Mathematical reasoning is the bridge between fluency and problem solving. It allows pupils to use their fluency to accurately carry out the problem solving.

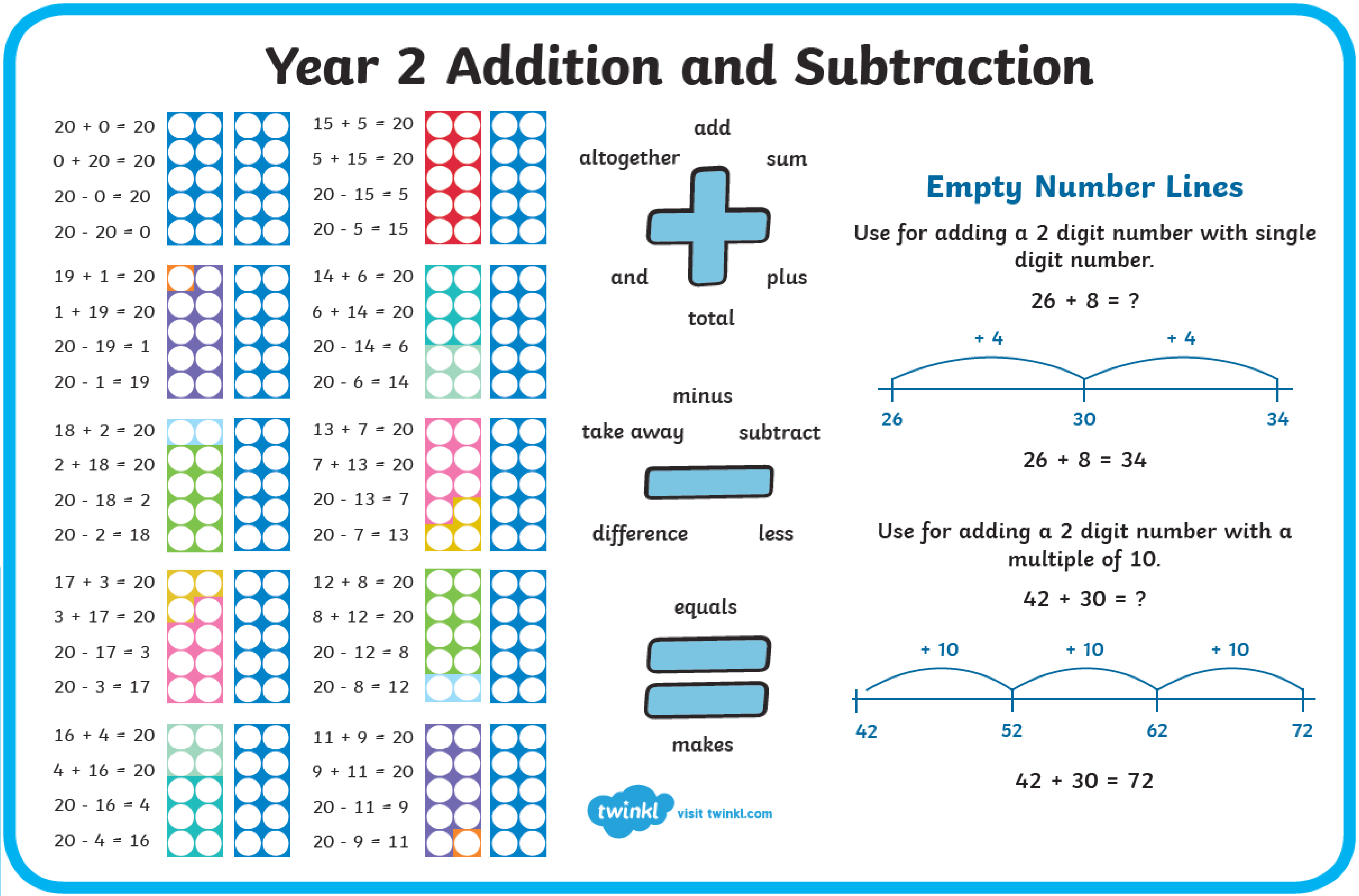
What is problem solving in maths?

- It is a process or series of processes to solve mathematical problems. This follows, logic, reasoning and communication.

- Problem solving in maths is finding a way to apply knowledge and skills you have to answer unfamiliar types of problems.



Mathematical Language



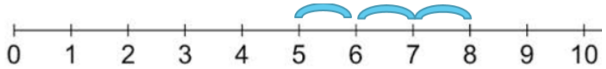
Mathematical language

- Mathematical language is all around children – words and expressions such as “bigger”, “smaller”, “shorter”, “taller”, “greater than”, “less than”, “equal to,” “beside,” “above,” “below,” “heavy,” “light,” “same,” “different.”

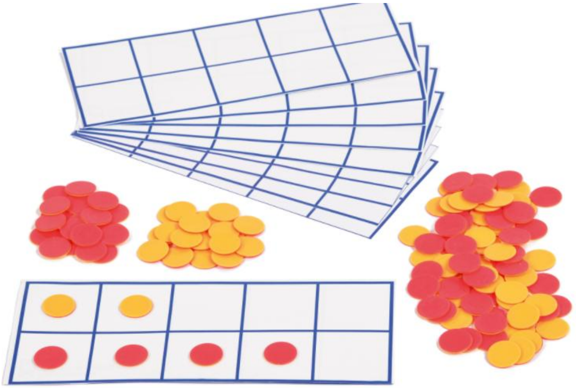
- Using a variety of vocabulary helps children to develop understanding and have a wide range of language and gain more confidence in the process.

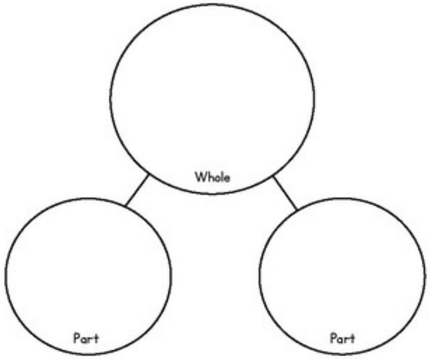
Resources

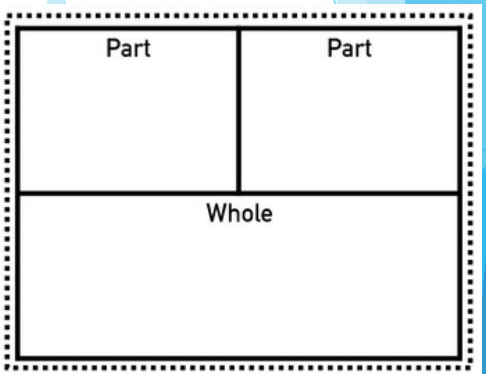
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100



5 + 3 = 8







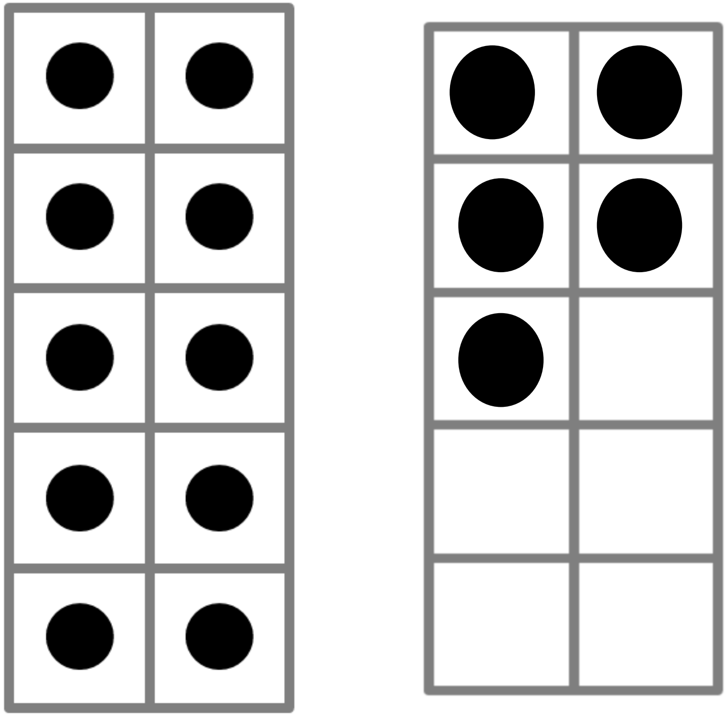
Cubes

- Cubes- making groups of numbers counting out 10… to make a 10 train

This is 15..
One group of 10 and 5 extra ones

Cubes ~ Counters ~ Tens Frames

- Use the tens frame to represent numbers in different ways.



This is 15..
One group of 10 and 5 extra ones

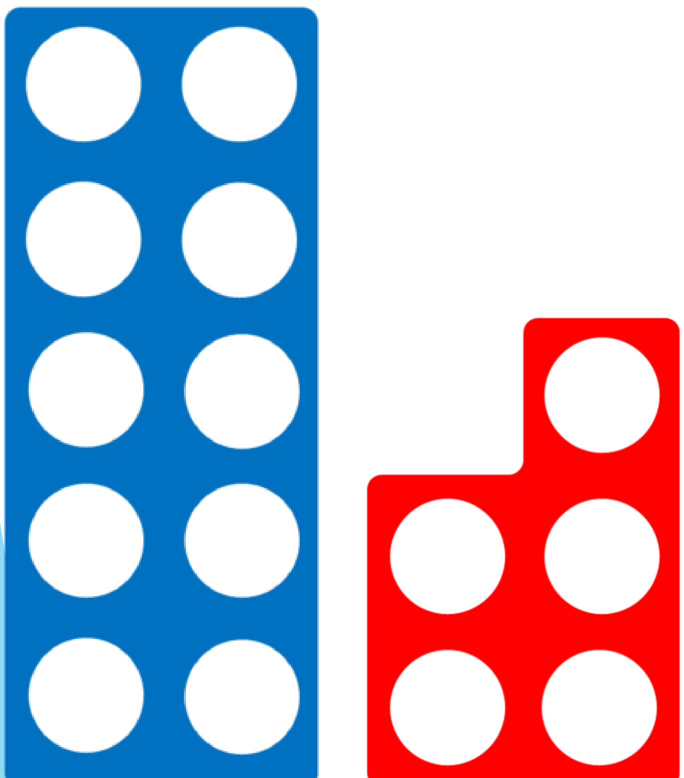
Numicon

- Great for number bonds, representing numbers, addition, subtraction, place value, shape, patterning.
- Multisensory which allows children to deepen their knowledge of fluency, reasoning and problem solving.

Numicon

- Use the tens frame to represent numbers in different ways.

This is 15..
One group of 10 and 5 extra ones



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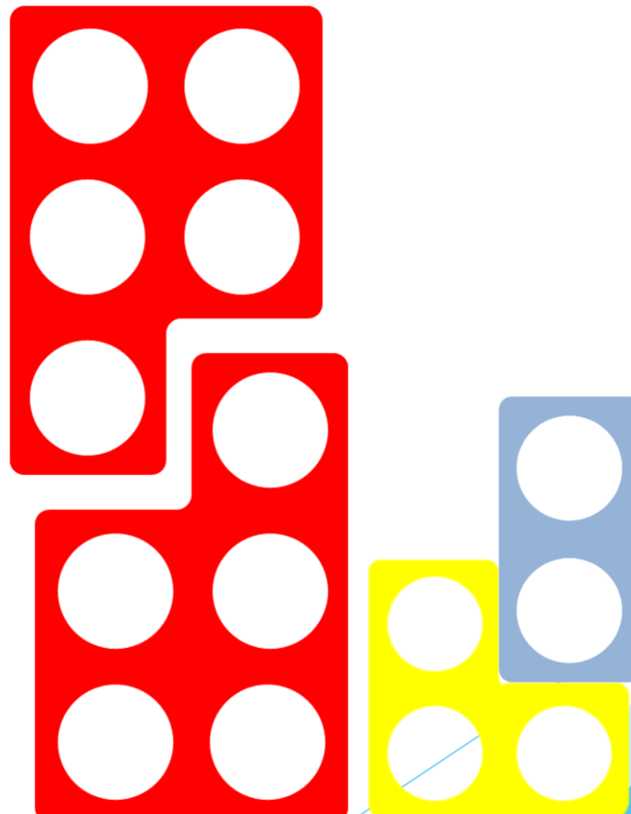
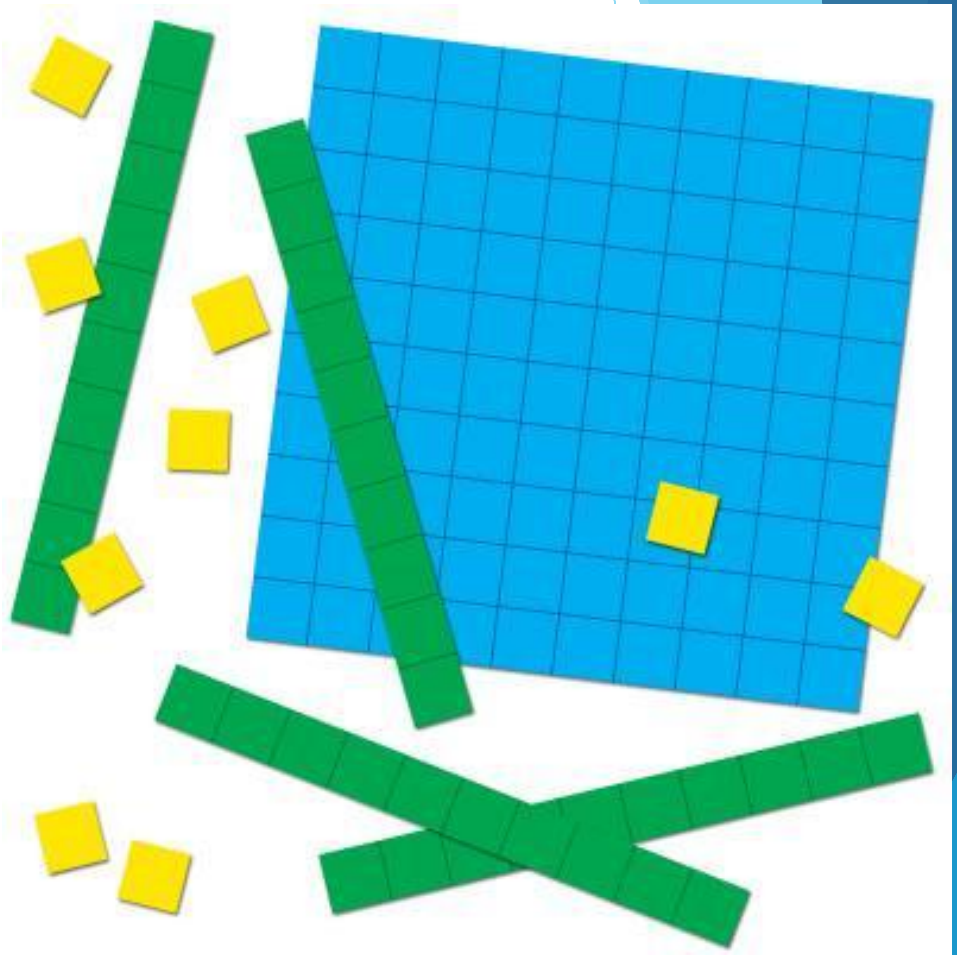


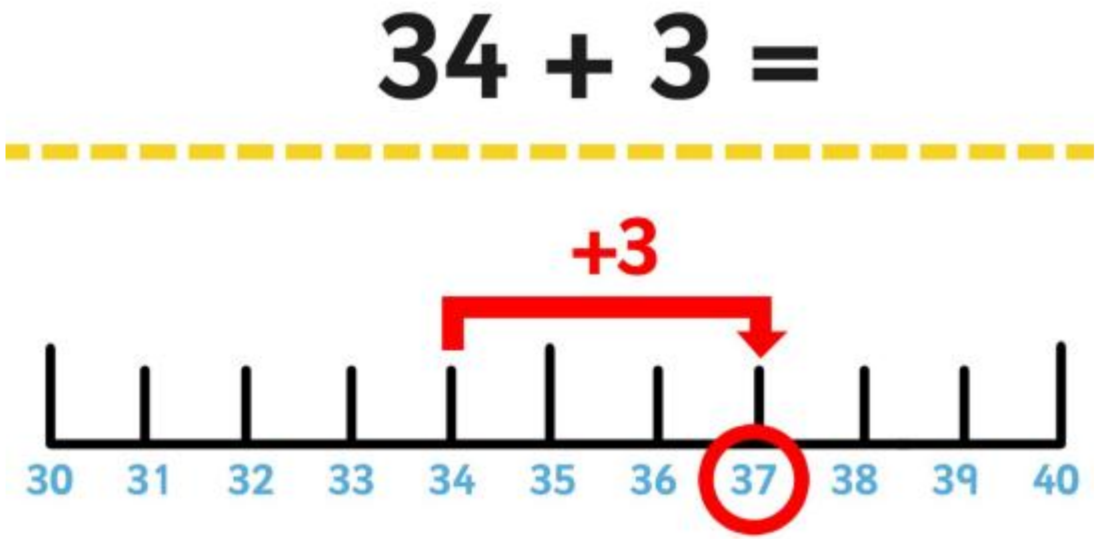
Dienes- Tens and Ones

- Great for building numbers to 100
- Understanding groups of tens and ‘extra ones’



Number line

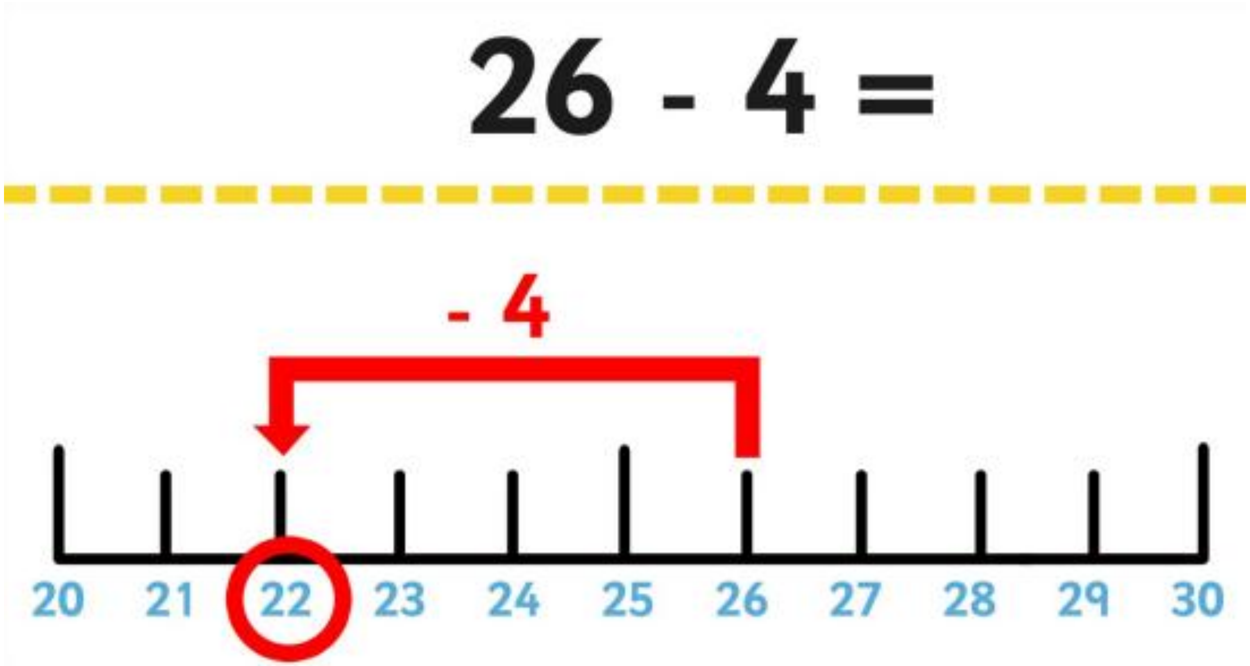
- **How we use it- ADDITION**



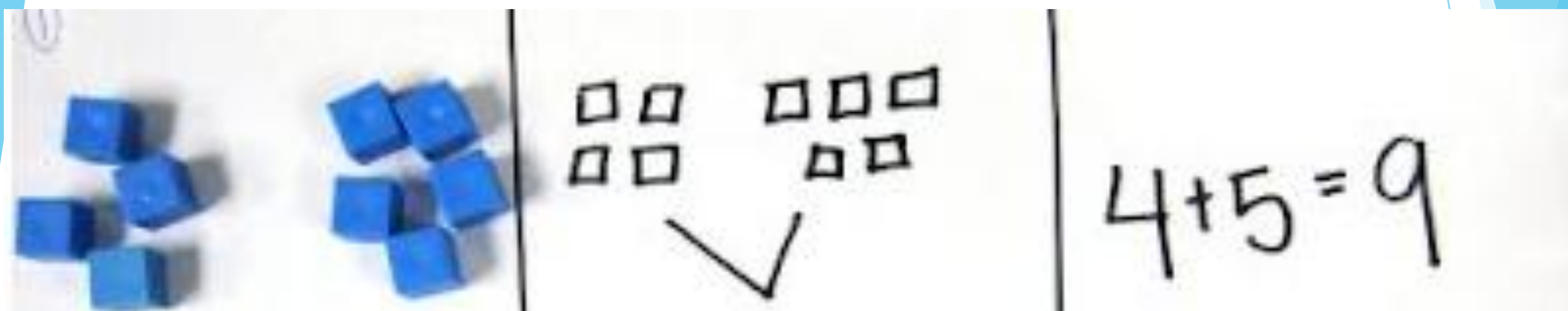
Jump forwards

Number line

- How we use it - SUBTRACTION



Concrete, Pictorial, Abstract



Number and Place Value

Represent Numbers to 100

Notes and Guidance

Children need to be able to represent numbers to 100 using a range of concrete materials, such as bead strings, straws, Base 10 equipment etc.

Children should also be able to state how a number is made up. For example, they can express 42 as 4 tens and 2 ones or as 42 ones.

Mathematical Talk

How have the beads been grouped? How does this help you count?

Can you show me the tens/ones in the number?

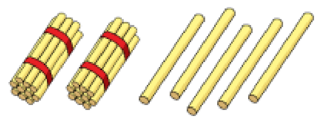
Which resource do you prefer to use for larger numbers? Which is quickest? Which would take a long time?

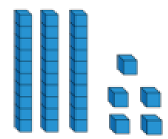
Varied Fluency

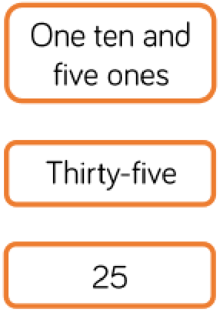
- Here is part of a bead string.

Complete the sentences.
There are _____tens and _____ones.
The number is _____.
Represent 45 on a bead string and complete the same sentence stems.

- Match the number to the correct representation.

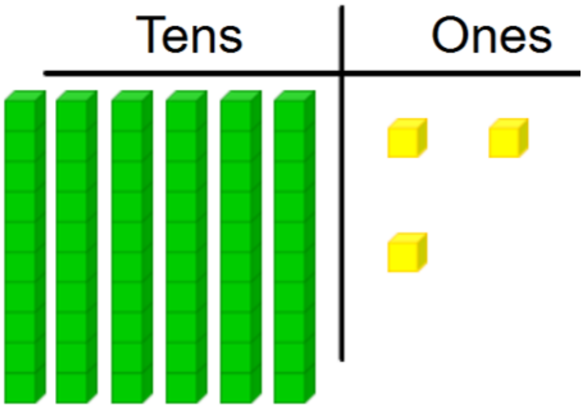


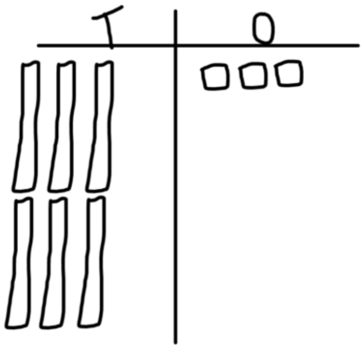




- Represent 67 in **three different** ways.

Concrete, Pictorial, Abstract





6 tens and 3 ones
six tens and 3 ones
sixty-three

Reasoning and Problem Solving

How many two digit numbers can you make using the digit cards?

7	0	2

What is the largest number?
Prove it by using concrete resources.

What is the smallest number?
Prove it by using concrete resources.

Why can't the 0 be used as a tens number?

Addition and Subtraction

Fact Families

Notes and Guidance

Children apply their understanding of known addition and subtraction facts within 20 to identify all related facts.
This will include an understanding of the relationship between addition and subtraction, and knowing the purpose of the equals sign, as well as the addition and subtraction signs.
Showing the link between representations, such as part-whole models and bar models can support and deepen the children's understanding.

Mathematical Talk

What if we took away the red flowers? What are the parts? What is the whole?

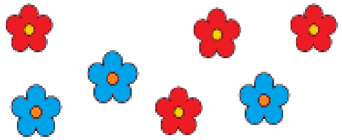
Does it change the answer if we add the blue and red flowers in a different order?

What does each circle represent on the part-whole model?

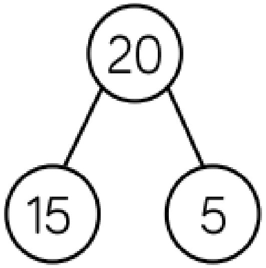
How many different number sentences are there in the fact family?

Varied Fluency

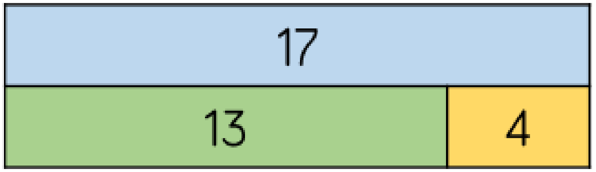
- Using concrete apparatus, can you talk about the relationships between the different flowers?



- One relationship shown by this part-whole model is $15 + 5 = 20$
  Can you write all associated number sentences in the fact family?



- Look at the bar model below.
  Can you write all of the number sentences in the fact family?



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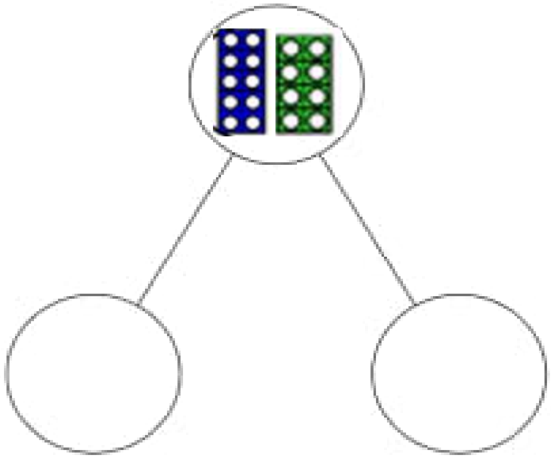
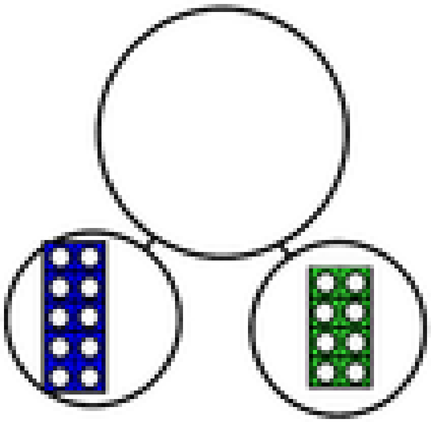
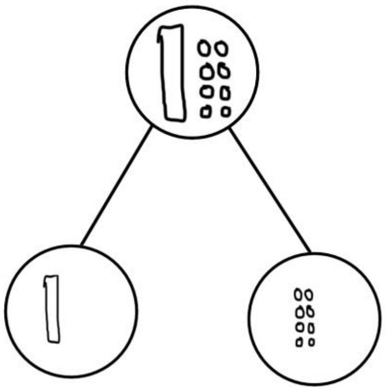






10+8= 18

8+10=18

18-8=10

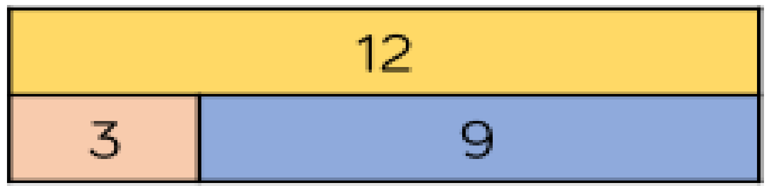
18-10=8

18=10+8

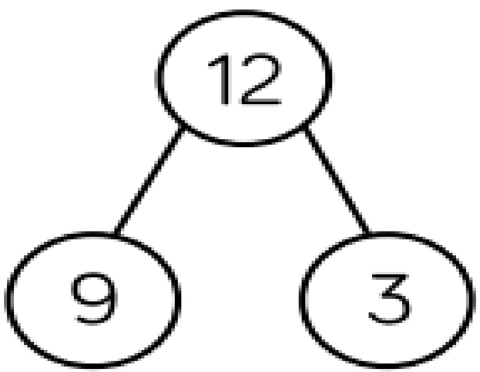
18= 8+10

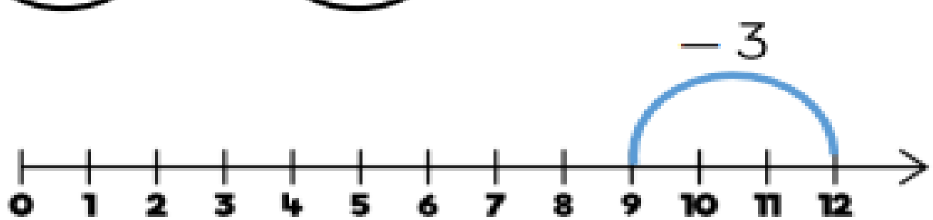
Reasoning and Problem Solving

Which of the representations are equivalent to the bar model?



$$12 = 9 + 3$$





Multiplication and Division

The Multiplication Symbol

Notes and Guidance

Children are introduced to the multiplication symbol for the first time. They should link repeated addition and multiplication together, using stem sentences to support their understanding.
They should also be able to interpret mathematical stories and create their own involving multiplication.
The use of concrete resources and pictorial representations is still vital for understanding.

Mathematical Talk

What does the 3 represent? What does the 6 represent?

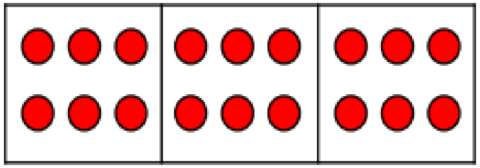
What does 'lots of' mean?

Does $18 = 3 \times 6$ mean the same?

How is $6 + 6 + 6$ the same as 3×6? How is it different?

Varied Fluency

- Complete the sentences to describe the equal groups.



___ + ___ + ___ = 18

___ × ___ = 18

There are ___ equal groups with ___ in each group.
There are three ___.

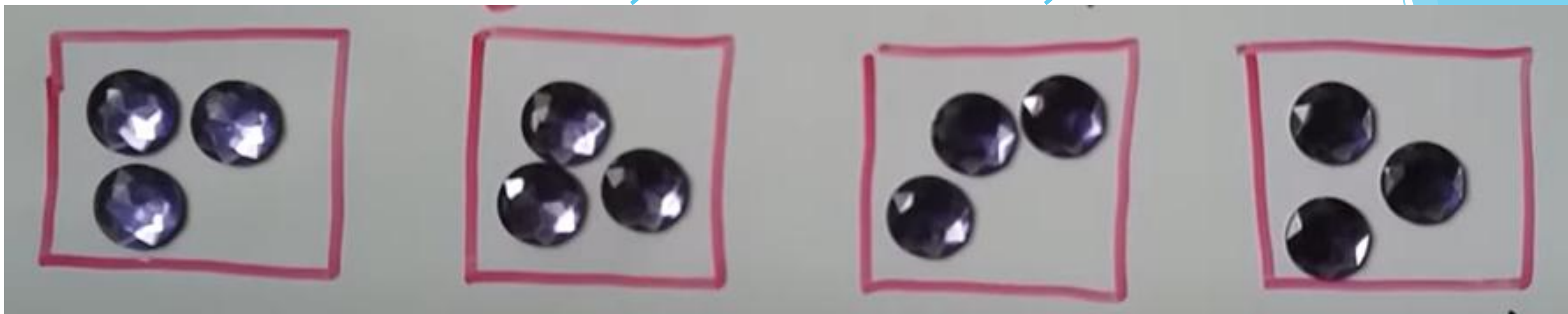
- Complete:

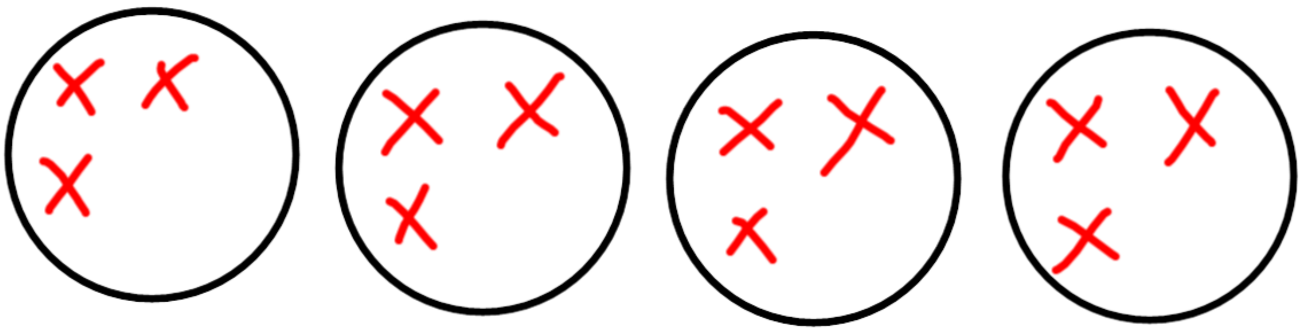
Three 2s	Draw It	Addition	Multiplication
There are 3 equal groups with 2 in each group.			

- Complete:

Addition	Multiplication	Story
10 + 10 + 10		
	6 × 5	

Concrete, Pictorial, Abstract





3 + 3 + 3 + 3 = 12

4 lots of 3 equal 12

4 groups of 3 equal 12

4 x 3 = 12

Reasoning and Problem Solving

$$3 + 3 + 3 = 3 \times 3$$

Is Mo correct? Explain why.

Draw an image to help you.

Fractions

Find Three Quarters

Notes and Guidance

Children use their understanding of quarters to find three quarters of a quantity.

They work concretely and pictorially to make connections to the abstract.

Children should be encouraged to spot patterns and relationships between quarters of amounts.

Mathematical Talk

How many quarters make a whole?

Can you represent this in a bar model?

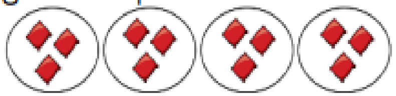
How many equal parts is $\frac{3}{4}$?

Can you spot any patterns?

What has stayed the same? What has changed? What do you notice?

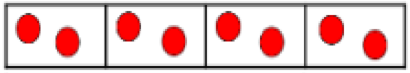
Varied Fluency

- Amir shares 12 beanbags into 4 equal groups.
  Use the image to complete the sentences.



One quarter of 12 is equal to _____
Two quarters of 12 is equal to _____
Three quarter of 12 is equal to _____
Four quarters of 12 is equal to _____

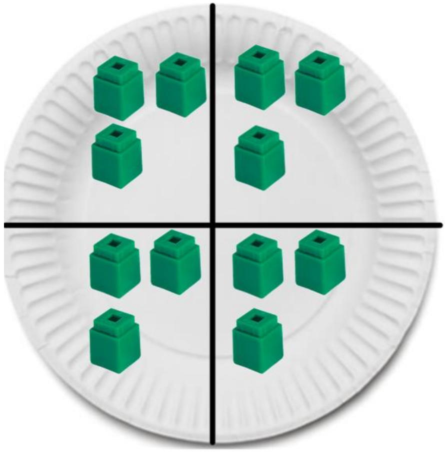
- Use counters and a bar model to help you find $\frac{3}{4}$ of 8 and $\frac{3}{4}$ of 16. What do you notice?

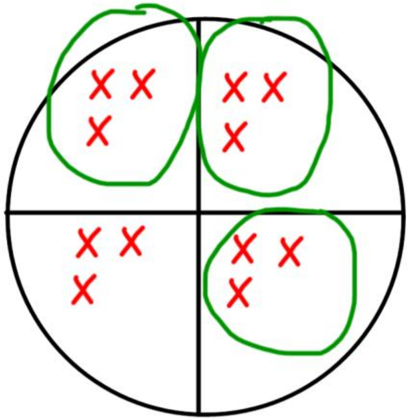


- Use counters, cubes, or bar models to help you fill in the blanks:

$\frac{1}{4}$ of 24 = $\square$	$\frac{1}{4}$ of 4 = $\square$	$\frac{1}{4}$ of $\square$ = 5
$\frac{2}{4}$ of 24 = $\square$	$\frac{3}{4}$ of 4 = $\square$	$\frac{3}{4}$ of $\square$ = 15
$\frac{3}{4}$ of 24 = $\square$	$\frac{1}{4}$ of 8 = $\square$	$\frac{1}{4}$ of $\square$ = 2
$\frac{4}{4}$ of 24 = $\square$	$\frac{3}{4}$ of 8 = $\square$	$\frac{\square}{4}$ of 8 = 6

Concrete, Pictorial, Abstract





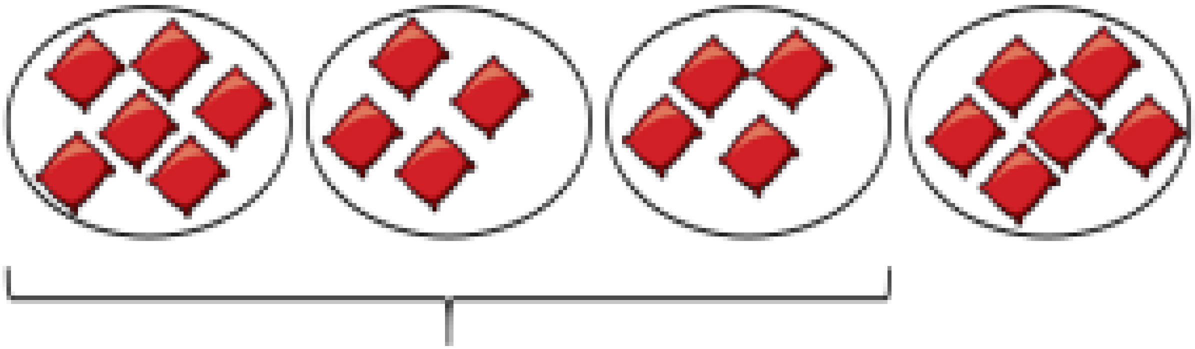
Three quarters of 12 is 9

$\frac{3}{4}$ of 12 = 9

Reasoning and Problem Solving

Amir is using beanbags and hoops to find three quarters of 20

Can you spot his mistake?

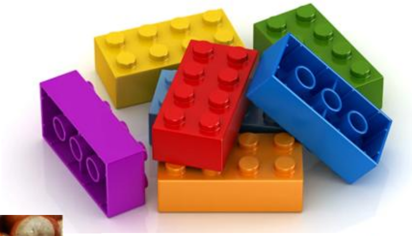


$$\frac{3}{4} \text{ of } 20 = 14$$

Objects to count





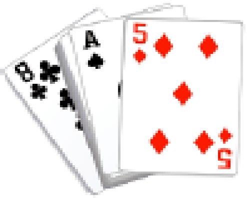









Supporting Maths at Home



Props around the house

Ideas taken from Maths for Mums and Dads Eastaway, R. and Askew, M. (2010)

- **A prominent clock**- digital and analogue is even better. Place it somewhere where you can talk about the time each day.
- **A traditional wall calendar**-Calendars help with counting days, spotting number patterns and
- **Board games that involve dice or spinners**-helps with counting and the idea of chance
- **A pack of playing cards**- Card games can be adapted in many ways to learn about number bonds, chance, adding and subtracting
- **A calculator**- A basic calculator will help with maths homework when required, there are also many calculator games you can play, too.
- **Measuring Jug**-Your child will use them in school, but seeing them used in real life is invaluable. Also useful for discussing converting from metric to imperial
- **Dried beans, Macaroni or Smarties**- for counting and estimating
- **A tape measure and a ruler**- Let your child help when measuring up for furniture, curtains etc
- **A large bar of chocolate** (one divided into chunks)- a great motivator for fractions work
- **Fridge magnets with numbers on**- can be used for a little practice of written methods
- **Indoor/outdoor Thermometer**- especially useful in winter for teaching negative numbers when the temperature drops below freezing
- **Unusual dice**- not all dice have faces 1-6, hexagonal dice, coloured dice, dice from board games all make talking about chance a little more interesting
- **A dartboard with velcro darts**- Helps with doubling, trebling, adding and subtracting.

- My USO Busy Things
- www.ictgames.com
- www.topmarks.co.uk

Questions?