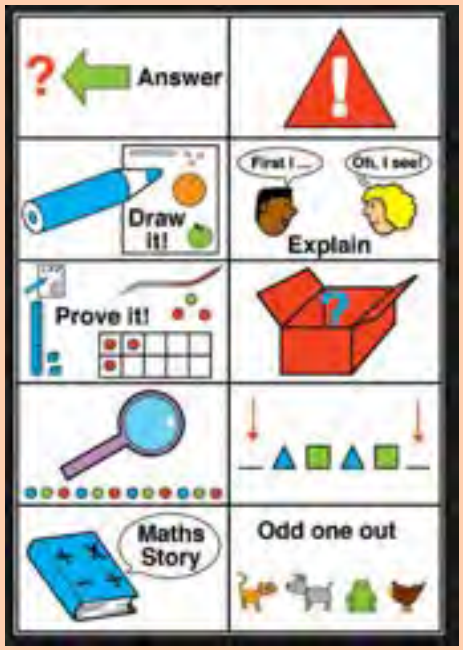
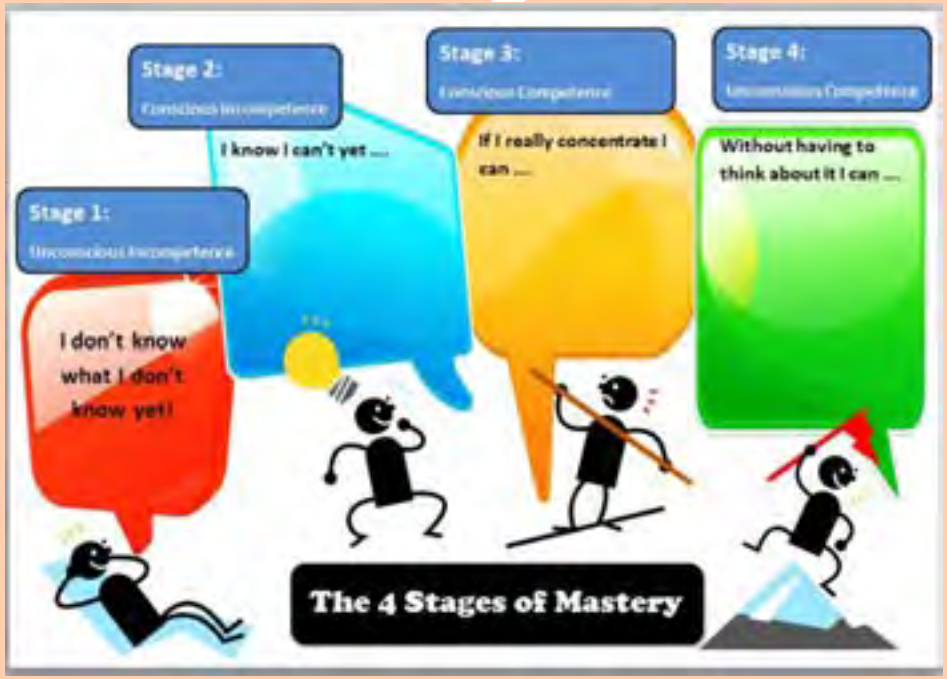
COBHAM
Primary School

Maths in Year 1

Recap, Consolidation and Mastery





Maths across the school

- Visual
- Range of Manipulatives
- Accurate use of Maths vocabulary
- Ability to explain what they are doing and how they are solving a calculation
- Widened curriculum
- Using and applying
- Whole school Maths investigations
- **Reasoning**

Example of reasoning

- The children can talk about which one is the odd one out. There are no wrong answers as long as the children can justify their answers.
- We can then move onto numbers, shapes etc. at a later stage.

Recognition of Number and Formation

- Number formation: we continue to practise this throughout the week. Please correct your child at home if they have incorrectly formed a number. Practise makes perfect!
- Ask your children to tell you different numbers on a 100 square. Do they know their values?

Addition Progression

Counting on to find the total

Number Songs & Rhymes

Vocabulary

One More than

Word Problems

Combining two groups

Understanding number sentences, reading, writing & use of the correct symbols

+ =

Bar model

Number line

Calculation policy: addition

Using a number line

Children will be asked to solve addition calculations with totals of less than 20.

The children will therefore start to develop an understanding of 2 digit numbers, and what these represent.

Initially, children use a marked number line to calculate addition problems.

Example

3 + 2 = 5 (You start on 3, and 'jump on 2')

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19

Example

7 + 6 = 13 (You start on 7, and 'jump on 6')

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19

Children will start to gain an understanding of 2 digit numbers, and why it is more efficient to start on the largest number before 'jumping on'.

Children are encouraged to use a large number line, and to count on in ones (often using a finger or pen to mark each jump). Initially this method would be used alongside previous methods until the children are confident in using a number line.

Use of physically resources to make this visual is essential.

Introducing a hundred square

Children will move to using a hundred square to 'jump on'. They will initially start on the larger number, and then jump on.

Example

5 count on 2 = 7

5 + 2 = 7

Example

38 count on 10 = 48

38 + 10 = 48

They will then move to a more efficient method of adding 10 to a number (jumping vertically rather than horizontally).

Children begin to use 100 squares as a tool to aid counting on in small steps (eg. in 1s or 2s).

Once secure they begin to use the 100 square to count on in tens.

Children learn that, as they move down a row, they add on 10 each time.

Careful attention is given to possible misconceptions at this stage, especially 'jumping on' their starting number (instead of always moving horizontally with each move).

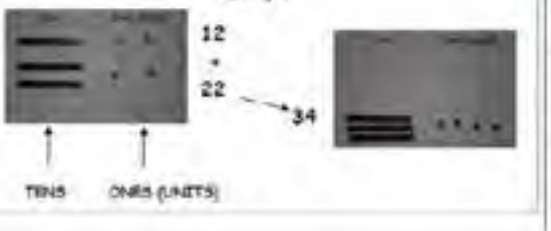
Introducing partitioning (2 digit numbers)

Children will learn that numbers 10 or over (and under 100) are made up of TENS (left hand digit) and ONES/ UNITS (right hand digit).

Partitioning a number involves splitting it up into TENS/UNITS to show the value of each digit.

Numbers can then be added by first combining the TENS and then combining the UNITS.

Example



Initially this will be practically done using bundles of sticks before moving onto 'Base 10' (which comprise of sticks representing 'tens', and cubes representing 'ones') which becomes more abstract.

This method is also used when children are introduced to the idea of adding HUNDREDS.

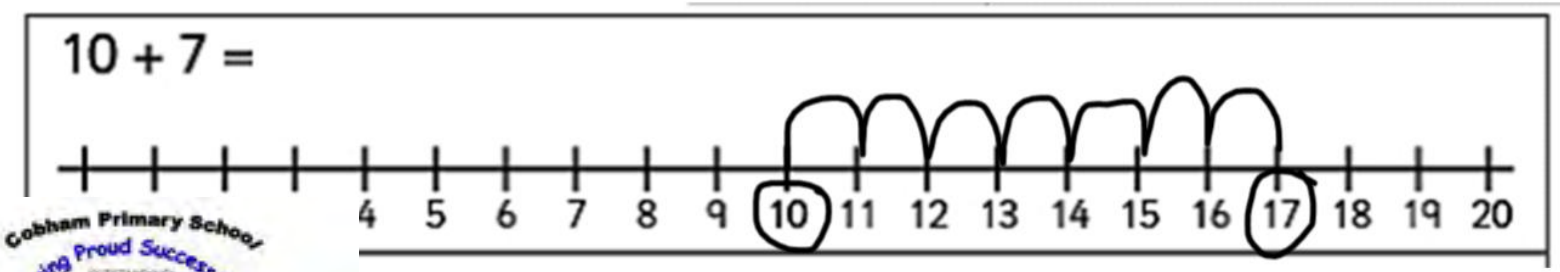
As children become secure they will say the value of each digit without apparatus.

More complex addition using a hundred square

Prior to using the hundred squares below the children will need to have a secure understanding of the value of each digit in a number, as determined by its position - place value.

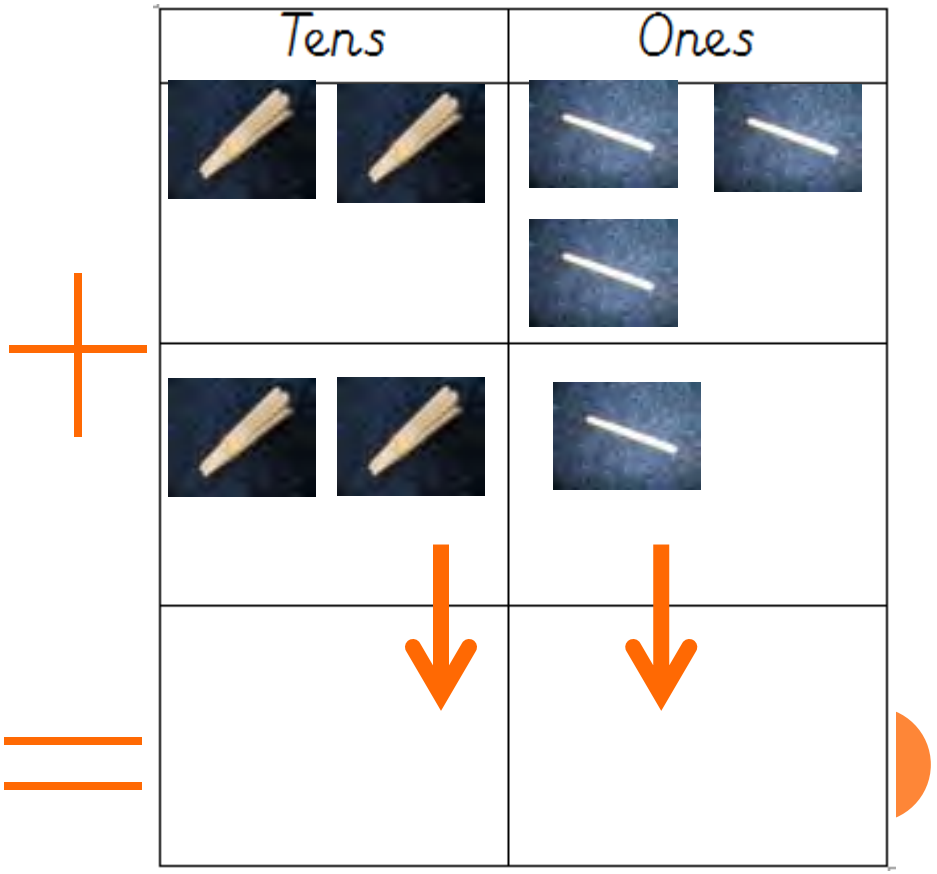
Adding using a number line

- We use number lines to add and subtract.
- When we add, we jump 'above' the number line.
- Find the biggest number and then jump along the next number.
- E.g:



Partitioning into tens and ones

- Use lolly sticks
- 67= 60 + 7
- Tens and ones grid:



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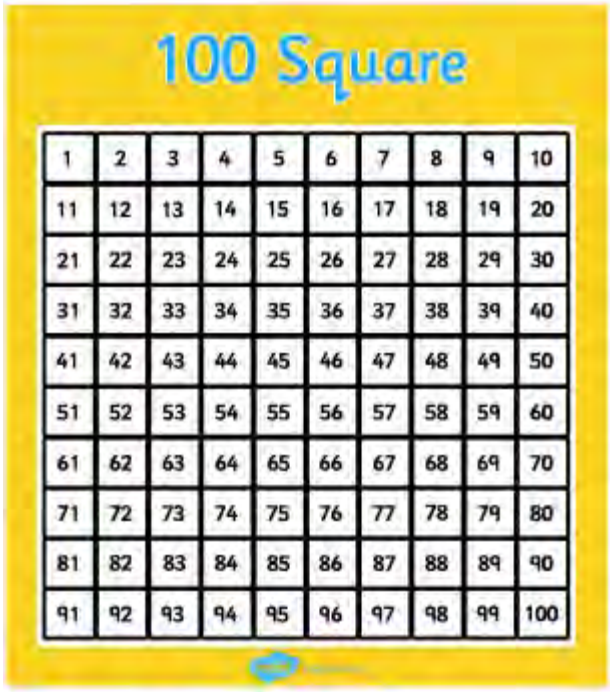
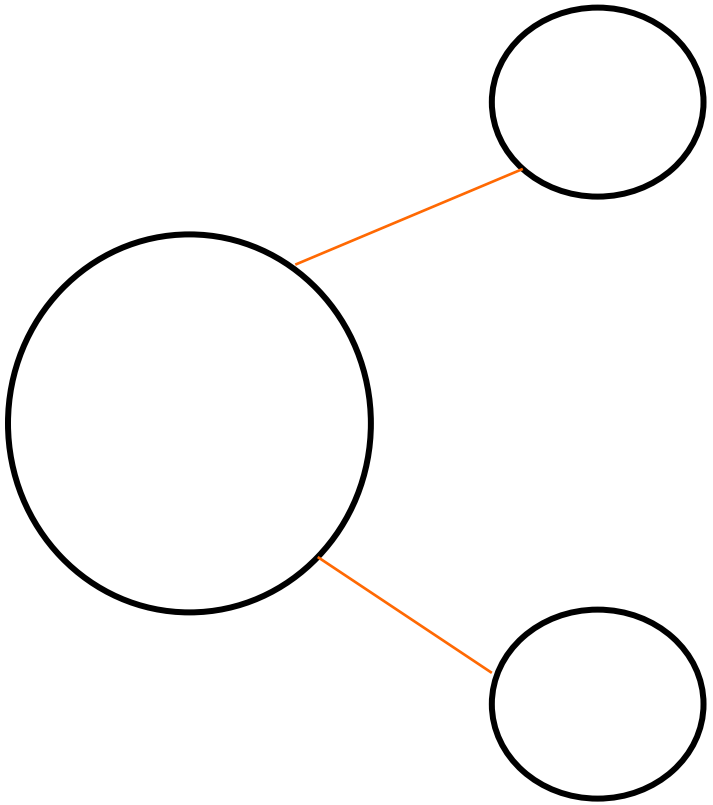
Introducing a 100 square



- Understand how to add 10 (jump down)
- Knowing where to move to when we get to 10 (move down to next line)
- Work towards using 100 square to help add larger numbers

Part Part whole frames

- We have introduced part part whole frames this year. It enables children to see the relationships between addition and subtraction [illegible] towards del.

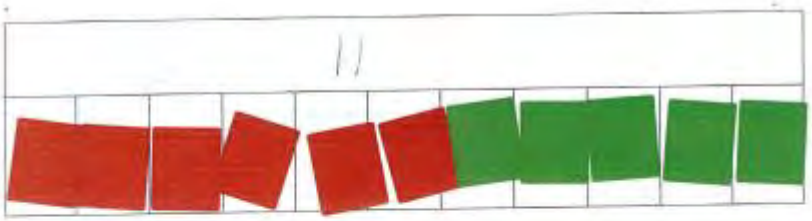


Bar Model: Reception

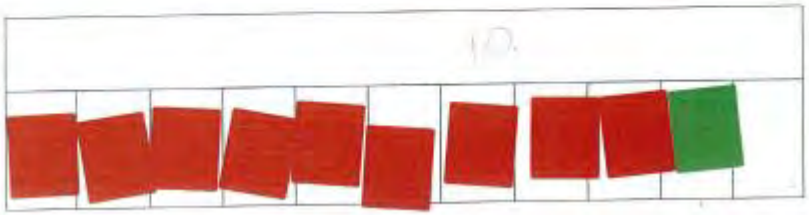
Using cubes and objects to represent number

- Count each part (record if ready to write the number sentence)
- Be able to say – in the first part I have 5 and in the second part I have 3.
- Understand that to find the total (unknown) they must count all the cubes or begin to count on from 5 to find the total.
- Progress to reading a number sentence e.g. 5+3 = and be able to show the two part either with cubes or by recording on paper

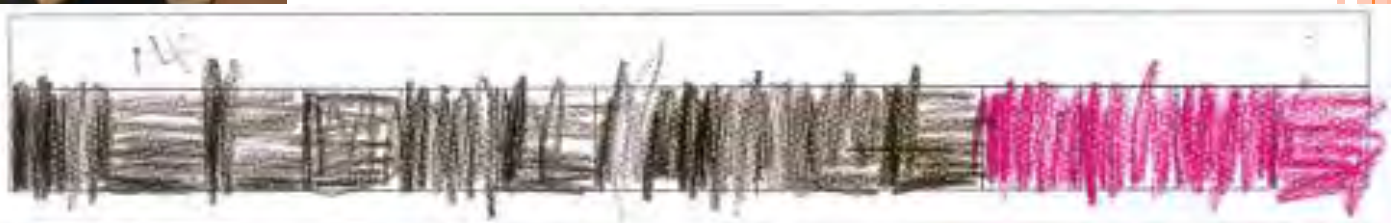
6+5=



9+1=



10+4=



8+7=

Bar Model: Year 1

Using cubes and objects to represent numbers

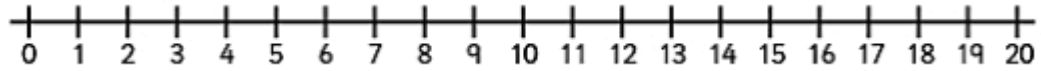
- We move on from using the bar model as a counting tool to understand that it is a visual representation.
- The above bar model could represent any addition number sentence.
- E.g. 26 + 13 = 39
- The children can visually see the answer must be greater than the two original numbers.
- It works well when completing word problems.
- Sally has 7 apples. Her mum gives her 12 more. How many does she have altoegther?

- The unknown is shown with a dashed line.
- The children then know they need to add the two smaller numbers to find a greater number.

Our bar model journey

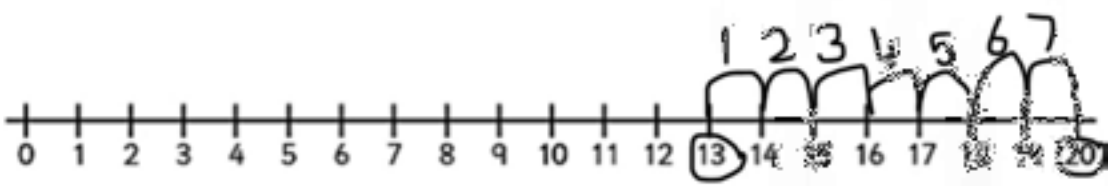
- Read the question and find out what to do.
- Write the number sentence. 12 + 7 =

- Draw the bar model.
- Use a number line to find the answer.
- Write t



Missing numbers

- We use our number lines to find missing numbers by counting on or back.
- We circle the numbers we know.
- Then we count the jumps.
- 13 + ... = 20



Calculation policy: subtraction

Subtraction using a number line

Children will develop their ability to subtract (by 'taking away'). This will involve them jumping backwards on a number line. This will prepare them to deal with larger quantities, and it will also become more time efficient.

Example

What is 11 take away 7?

11 – 7 = □

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

Start on 11, and 'jump back' 7 spaces.

11 – 7 = 4

Children start using a number line to subtract only units at a time (not tens).

Children will be shown to mark their jumps under the number line to show that it is the opposite to add and therefore make links to the inverse.

Introducing a hundred square

Children will use a hundred square to 'jump back' particular amounts.

Example

7 count back 2 = 5

7 – 2 = 5

They will then move to a more efficient method of subtracting 10 to a number (jumping vertically rather than horizontally).

Example

48 count back 10 = 38

48 – 10 = 38

Children begin to use 100 squares as a tool to aid counting back in small steps (eg. in 1s or 2s).

Once secure they begin to use the 100 square to count back in tens.

Children learn that as they move down a row they subtract 10 each time.

Careful attention is given to possible misconceptions at this stage, especially jumping on their starting number, instead of always moving horizontally with each move.

Subtraction by finding the difference

After having experienced subtraction as 'taking away', the children will be introduced to subtraction as 'finding the difference'.

Example

Which plate holds the most: black or white?
How many more? What is the difference?

The use of double sided counters could also help children to understand this concept.
What is the difference between 8 and 3?

Example

What is the difference between 11 and 4?

Children will start on either number, or 'jump' until they reach the other (this is possible in either direction, but is normally thought of as 'jumping on').

Finding the difference is introduced pictorially. The first example shows how this type of problem is solved by counting the objects to find how many more are needed.

Children can also solve subtraction problems by counting on or counting back using a number line. The method that the children will use will depend upon how they 'see' a problem.

If a child is stuck on the problem they will be encouraged to count on from the smallest number (as this is normally the case when, for example, finding the difference between the heights of 2 people).

Introducing partitioning (2 digit numbers)

Children will learn that numbers 10 or over (and under 100) are made up of TENS (left hand digit) and UNITS (right hand digit).

Partitioning a number involves splitting it up into TENS/UNITS to show the value of each digit.

Example *34 is made from:*

3 (tens) 4 (units)

Initially this will be practically done using **bundles of sticks** before moving to 'Base 10' which become more abstract in the representation of 10.

This method is also used when children are introduced to the idea of adding HUNDREDS.

As children become secure they will say the value of each digit without apparatus.

Subtraction Progression

Understanding one/two less than

Vocabulary

Subtracting from a group of objects

Counting back to find how many are left

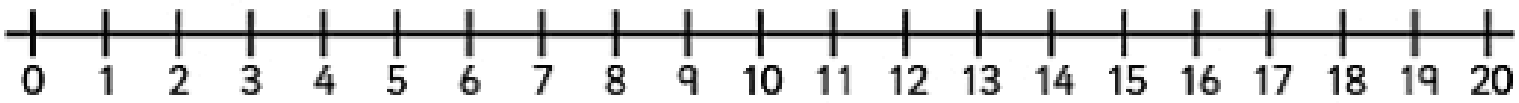
Number Line

Understanding number sentences, reading, writing & use of the correct symbols

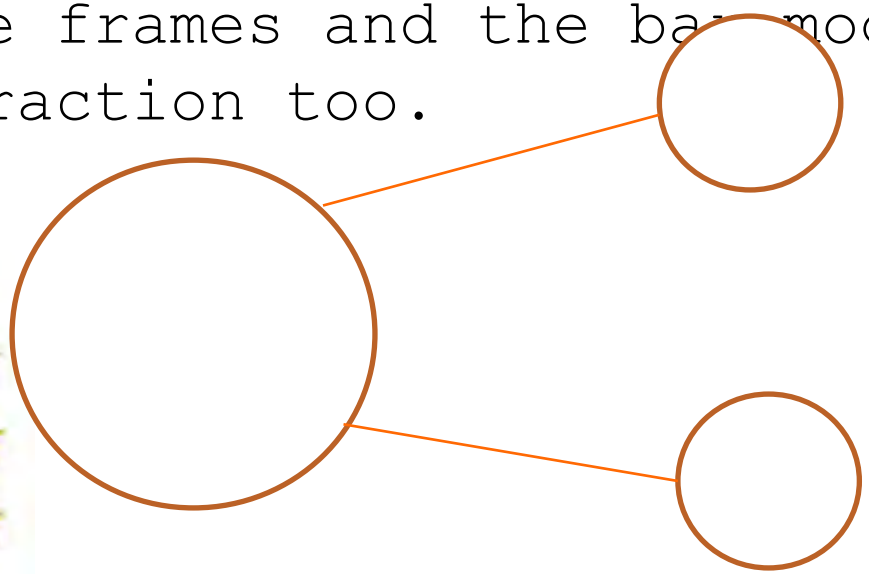
Word Problems

Bar Model

Subtraction using a number line

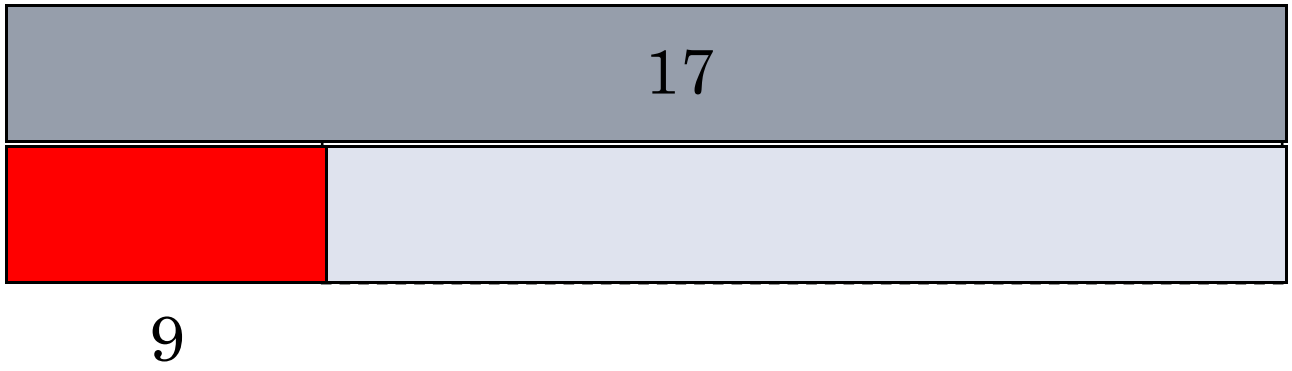


- We always jump under for taking away.
- We talk about the answer will be smaller.
- We are beginning to use part part whole frames and the bar model for subtraction too.



Subtraction using the bar model

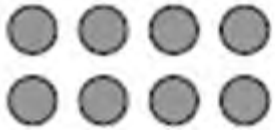
- As with addition, we use the bar model as a visual representation, not a counting tool.



- We talk about the unknown with addition and subtraction.

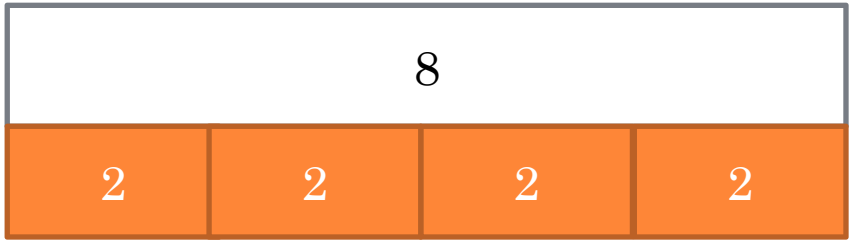
Multiplication and division

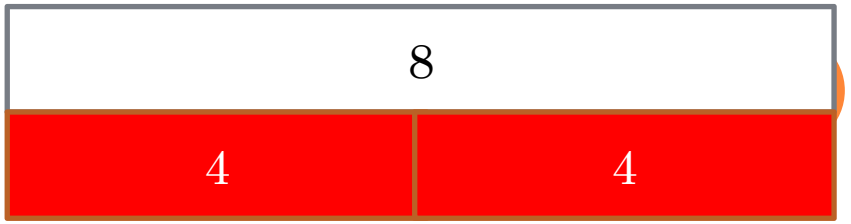
- We look at multiplication as repeated addition in Year 1.
- Repeated addition
- Arrays
- Sharing
- Recording using the bar model



$4 \times 2 = 8$

$2 \times 4 = 8$





2d and 3d Shapes

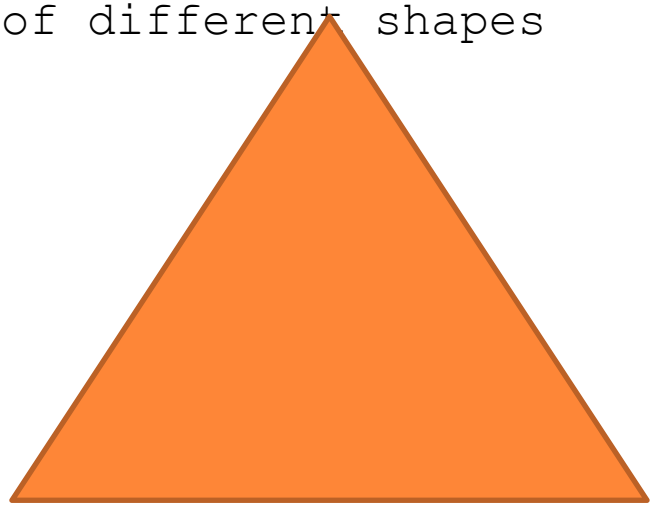
- Children to understand the difference between a 2d and 3d shape.

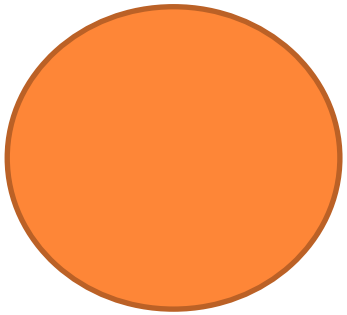
- To be able to describe what the shape looks like and use some mathematical language to describe the shape

E.g. Straight side, curved side and corner for 2d shapes
Edge, face, vertices for 3d shapes

- Recognise shapes in the environment and be able to describe them

- Compare properties of different shapes





What can you do at home?

- Lots of practical counting using a range of objects
- Talk about numbers in everyday situations
- Allow children to handle money, adding small
  s
- Begin to use time...allow them to tell you the time, and ask them to tell you when it is a certain time
- Most of all...make maths fun!

Thank you

Any questions?