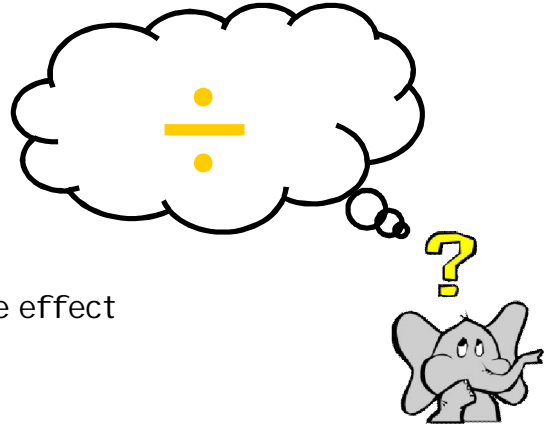


## Progression in Teaching Division

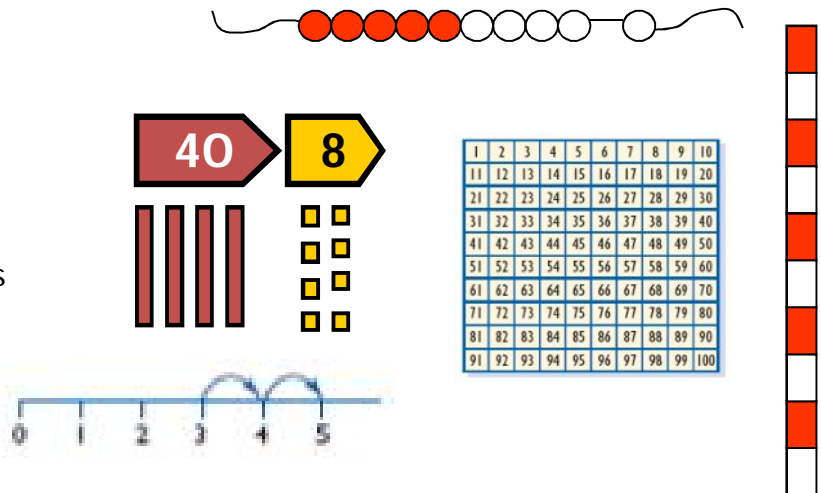
### Mental Skills

- Recognise the size and position of numbers
- Count back in different steps 2s, 5s, 10s
- Halve numbers to 20
- Recognise division as repeated subtraction
- Quick recall of division facts
- Use known facts to derive associated facts
- Divide by 10, 100, 1000 and understanding the effect
- Divide by multiples of 10



### Equipment

- Counting apparatus
- Arrays
- 100 squares
- Number tracks
- Numbered number lines
- Marked but unnumbered lines
- Empty number lines.
- Multiplication squares

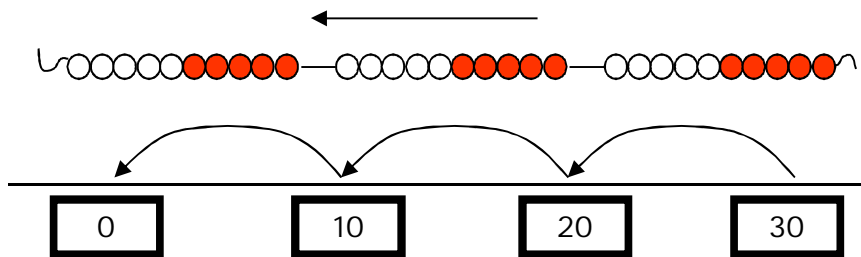


### Vocabulary

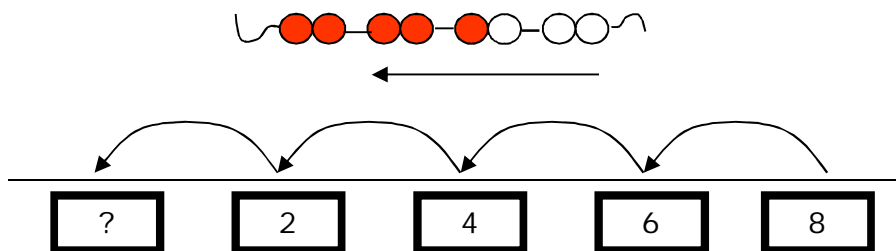
- Lots of
- Groups of
- Share
- Group
- Divide
- Division
- Divided by
- Remainder
- Factor
- Quotient
- Divisible

group      groups of  
lots of      divide  
divided by      quotient  
division      factor  
remainder      divisible  
half      halve      share

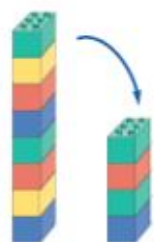
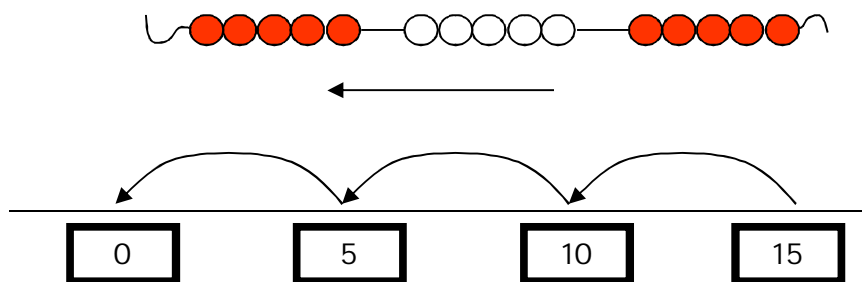
Count back in tens



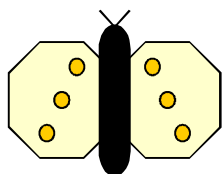
Count back in twos



Count back in fives

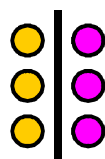


half of 8 is 4  
 $8 \div 2 = 4$



Half of 6 is 3

$\frac{1}{2}$  of 6 = 3



Know halves

Use known multiplication facts to work out corresponding division facts

If  $2 \times 10 = 20$

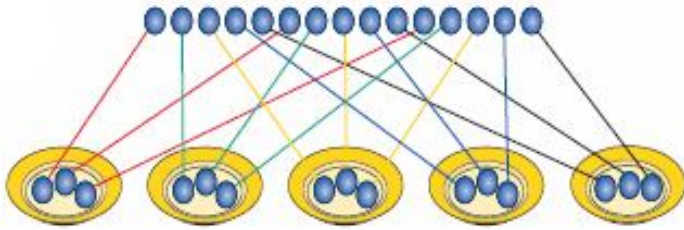
then

$20 \div 10 = 2$

$20 \div 2 = 10$

$$15 \div 5 = 3$$

15 shared between 5



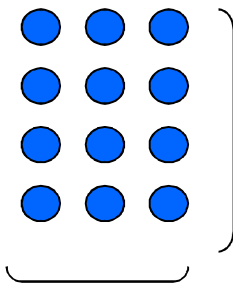
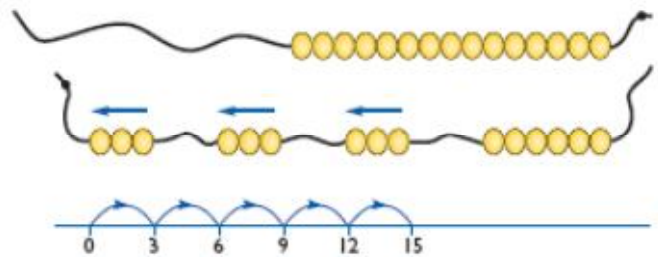
Understand division as sharing

Understand division as grouping

How many 3s in 15?



$$15 \div 3 = 5$$



12 divided into groups of 3 gives 4 groups

$$12 \div 3 = 4$$

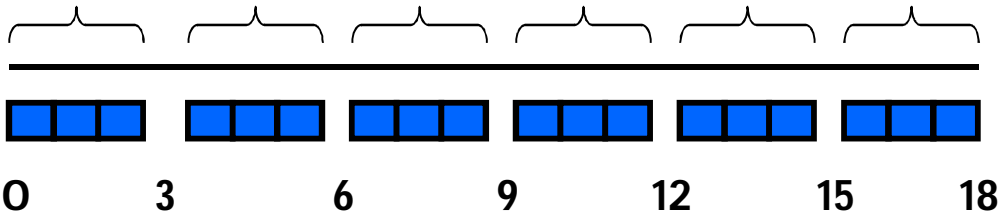
Reinforce division as grouping through the use of arrays

12 divided into groups of 4 gives 3 groups

$$12 \div 4 = 3$$

18 divided into groups of 3  
 $18 \div 3 = 6$

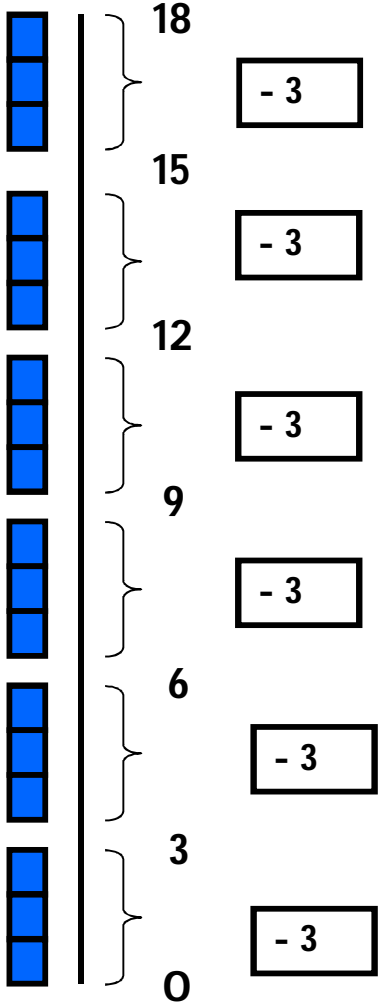
Represent 'groups' for division on a number line using apparatus alongside the line



$18 \div 3 = 6$



$18 \div 6 = 3$

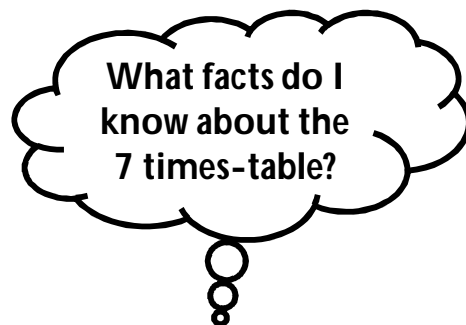


$18 \div 3 = 6$

$$\begin{array}{r}
 18 \\
 - 3 \quad (1 \times 3) \\
 \hline
 15 \\
 - 3 \quad (1 \times 3) \\
 \hline
 12 \\
 - 3 \quad (1 \times 3) \\
 \hline
 9 \\
 - 3 \quad (1 \times 3) \\
 \hline
 6 \\
 - 3 \quad (1 \times 3) \\
 \hline
 3 \\
 - 3 \quad (1 \times 3) \\
 \hline
 0
 \end{array}$$

Understand division as repeated subtraction using a vertical line and apparatus to make the links

Children need to see that as the numbers get larger, large chunk subtraction is the more efficient method. Multiples of the divisor (large chunks) are taken away. Multiplication facts are needed to see the size of the 'chunk'.



$$100 \div 7 = \underline{14} \text{ r } 2$$

$$\begin{array}{r} 100 \\ - 70 \quad (\underline{10} \times 7) \\ \hline 30 \\ - 28 \quad (\underline{4} \times 7) \\ \hline 2 \end{array}$$

$$518 \div 7 = \underline{74}$$

$$\begin{array}{r} 518 \\ - 350 \quad (\underline{50} \times 7) \\ \hline 168 \\ - 140 \quad (\underline{20} \times 7) \\ \hline 28 \\ - 28 \quad (\underline{4} \times 7) \\ \hline 0 \end{array}$$

Fact Box	
1 x 7 =	7
2 x 7 =	14
5 x 7 =	35
10 x 7 =	70
20 x 7 =	140
50 x 7 =	350
100 x 7 =	700

$$560 \div 24$$

$$\begin{array}{r} 23 \text{ r } 8 \\ 24 \overline{) 560} \\ \underline{480} \phantom{0} \\ 80 \\ \underline{72} \phantom{0} \\ 8 \end{array}$$

Standard written method  
Links directly to large chunk subtraction

BUS-STOP METHOD

$$\begin{array}{r} 62 \\ 3 \overline{) 1'86} \end{array}$$