

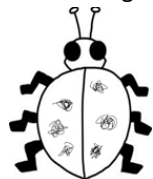
**Stage 1**

Children are encouraged to develop a mental image of the number system in their heads to use for calculation. They should experience practical calculation opportunities involving **equal groups** and **equal sharing**.



They may develop ways of recording calculations using pictures.

A child's jotting showing halving six spots between two sides of a ladybird.



A child's jotting showing how they shared the apples at snack time between two groups.

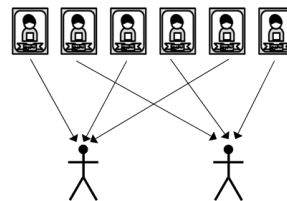


**Stage 2**

Children explore practical contexts where they share equally and group equally.  $6 \div 2 = ?$

**Equal sharing (6 shared equally between 2)**

6 football stickers are shared equally between 2 people, how many do they each get? Children may solve this by using a 'one for you, one for me' strategy until all of the stickers have been given out.



**Equal grouping (How many groups of 2 are there in 6?)**

There are 6 football stickers, how many people can have 2 stickers each?



**Stage 3**

Children continue to use practical equipment to represent division calculations as grouping (repeated subtraction) and use jottings to support their calculation.

$12 \div 3 = ?$  Children begin to read this calculation as, 'How many groups of 3 are there in 12?'



At this stage, children will also be introduced to division calculations that result in remainders.

$13 \div 4 = 3$  remainder 1



**Stage 4**

$43 \div 8$



$43 \div 8 = 5$  remainder 3

At this stage, children also learn if the remainder should be rounded up or down e.g.  $62 \div 8 = 7$  remainder 6

I have 62p. Sweets are 8p each. How many can I buy?  
Answer: 7 (the remaining 6p is not enough for another sweet)

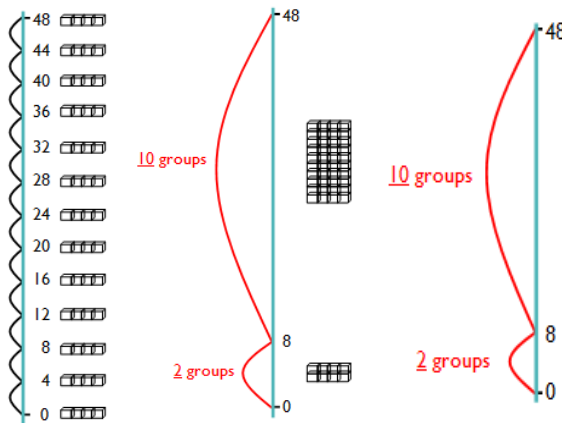
Apples are packed into boxes of 8. There are 62 apples. How many boxes do I need?

Answer: 8 (the remaining 6 apples still need to be placed into a box)

**Stage 5**

The previous method of repeated subtraction on a number line is continued, but using a vertical number line alongside practical equipment.

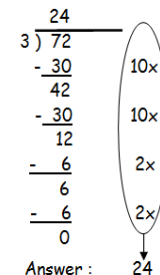
The repeated subtraction is made more efficient by subtracting 'chunks' of the divisor.



**Stage 6**

This is the final stage, in which children use the 'chunking' method.

$72 \div 3$



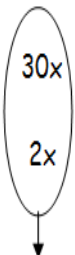
1x	3
2x	6
5x	15
10x	30

Children should write key facts in a menu box. This will help them in identifying the largest group they can subtract in one chunk.

Stage 6 continued

$196 \div 6$

$$\begin{array}{r} 32 \text{ r } 4 \\ 6 \overline{) 196} \\ \underline{- 180} \\ 16 \\ \underline{- 12} \\ 4 \end{array}$$



1x	6
2x	12
4x	24
5x	30
10x	60
20x	120

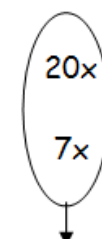
The key facts in the menu box should be extended to include 4x and 20x.

Answer: 32 remainder 4 or 32 r 4

Stage 6 continued

$972 \div 36$

$$\begin{array}{r} 27 \\ 36 \overline{) 972} \\ \underline{- 720} \\ 252 \\ \underline{- 252} \\ 0 \end{array}$$



Answer: 27

Stage 6 continued

$362 \div 17$

$$\begin{array}{r} 21.29 \\ 17 \overline{) 362} \\ \underline{- 340} \\ 22 \\ \underline{- 17} \\ 5.0 \\ \underline{- 3.4} \\ 1.60 \\ \underline{- 1.53} \\ 0.07 \end{array}$$

To enable children to continue the calculation, they need to understand that 5 is the same as 5.0

When recalling and deriving multiplication and division facts, children should also identify decimal equivalents of times tables, e.g. if  $2 \times 17 = 34$ , I know that  $0.2 \times 17 = 3.4$  if  $9 \times 17 = 153$ ,  $0.9 \times 17 = 15.3$  so  $0.09 \times 17 = 1.53$

Children should not be made to go onto the next stage if:

- 1) they are not ready.
- 2) they are not confident.

Children should be encouraged to consider if a mental calculation would be appropriate before using written methods.