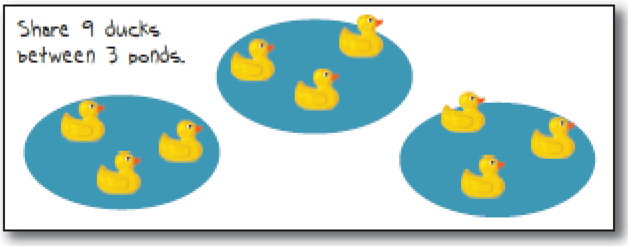
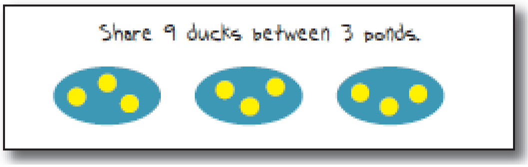
Division

Vocabulary: Division, share, group, divide, divide into, divided by, share equally.

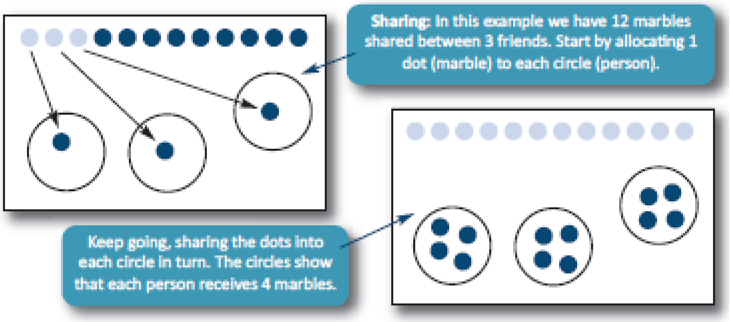
Stage 1 (Foundation Stage - Year 1)
Early division involves sharing equally in practical and real-life contexts.

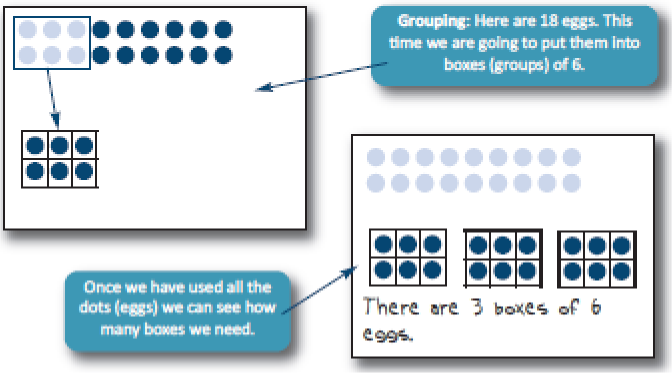


The same problem can be represented with symbols:

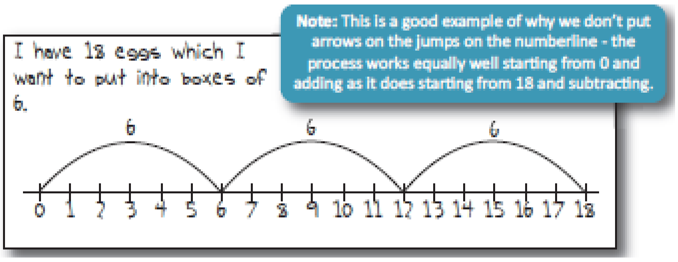


Stage 2 (around Year 2)
At stage 2, children develop their understanding of division as two separate processes:
- sharing (eg 12 marbles shared between 3 friends)
- grouping (eg 18 eggs are put into boxes of 6)





In the same way we can use repeated addition to show the same process, that is, we repeatedly add groups of 6 until we can't any longer. It is easiest to show this on a numberline.



Examples of sharing and grouping problems:

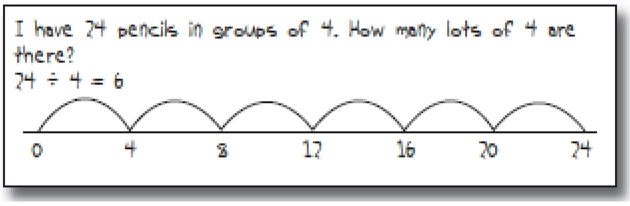
Sharing: Three friends found some conkers and shared them out. If there were 18 conkers altogether, how many did they get each?

Grouping: If there are 32 children waiting to go on a rollercoaster and each car holds 8 people, how many cars will they fill?

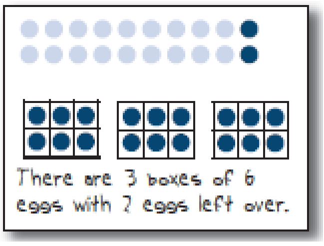
At stage 2 children experience divisions which "work". We deal with the idea of items left over, or **remainders**, at stage 3.

Stage 3 (around Year 3)

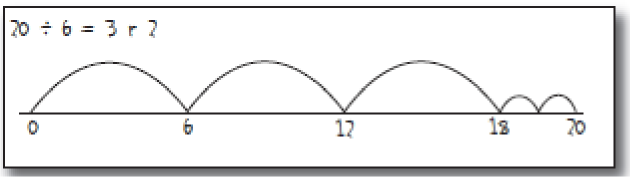
Firstly, children can carry out repeated addition on a blank numberline for a calculation with no remainder.



Then they can see the effect of having a remainder. So, repeating the earlier example of putting eggs in boxes but this time with 20 eggs:

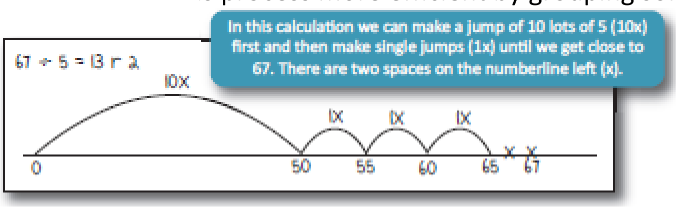


Or on a numberline:

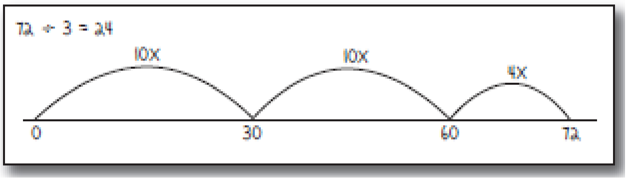


Stage 4 (Year 3 - Year 4)

Stage 4 makes this process more efficient by grouping some of the individual steps into one, for example:

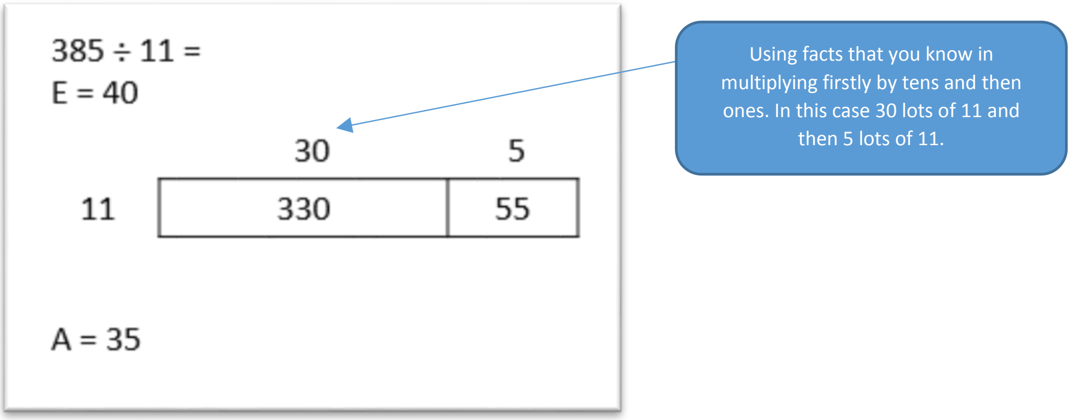


Stage 5 (end Year 4 - Year 6)
By grouping more than one step as the numbers get larger we can make several larger jumps to the target number. This process is known as **chunking**.

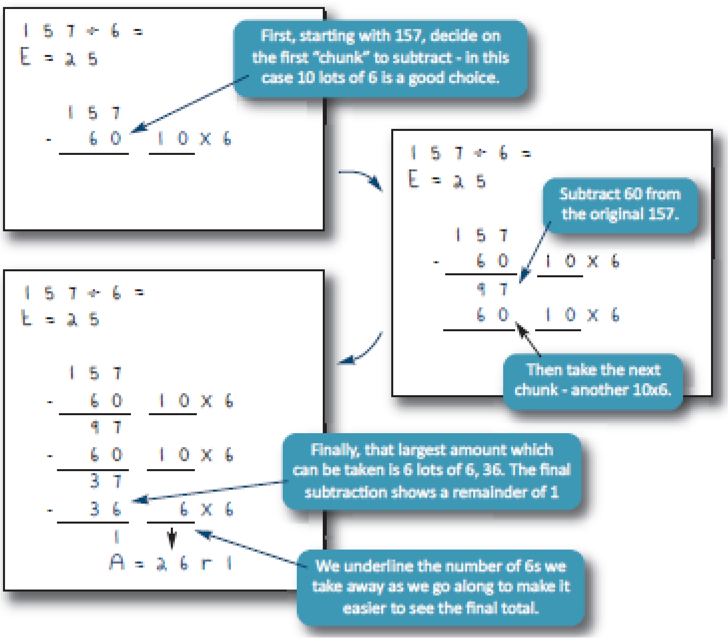


Stage 6 (reverse grid method)

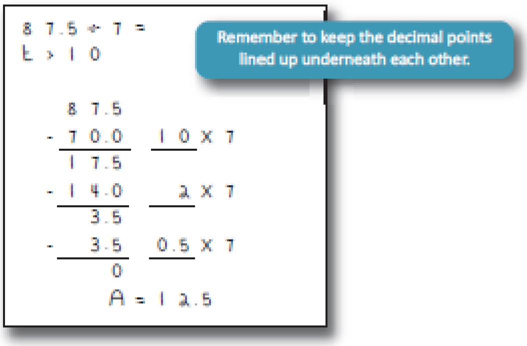
This method uses partitioning to support division. Children rely on mental facts that they already know.



Stage 7
This leads to the first written method which is known as the chunking method as we repeatedly subtract "chunks" of the number.



Chunking can also be used with decimals:



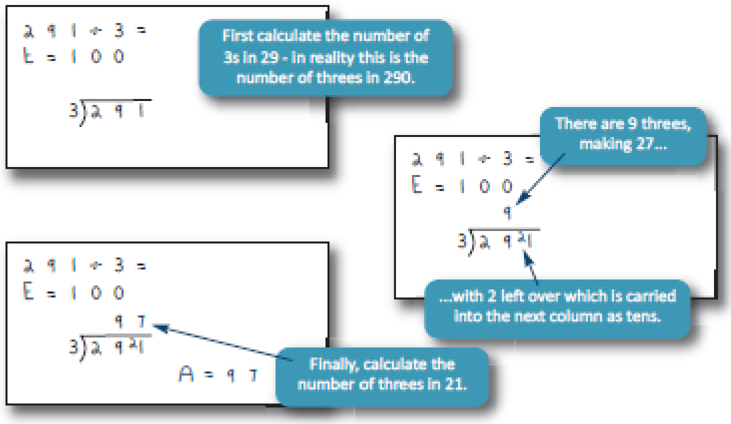
Stage 6 (Year 6)

There are two formal written methods used at this stage:

• short division (HTO ÷ O)

• long division (HTO ÷ TO)

First, short division:



Finally, long division (which is a form of chunking) allows us to tackle calculations where we want to divide by a two-digit number.