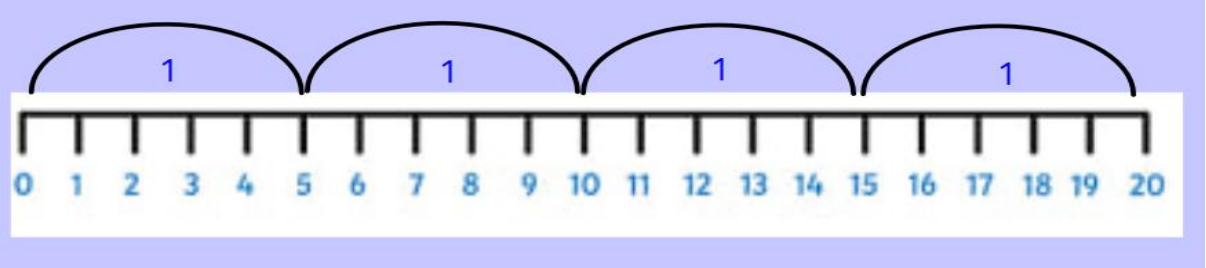
Stage Three – Division

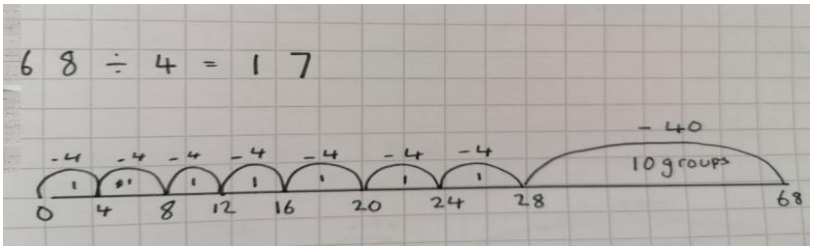
Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables (continue to practise the 2, 5 and 10 multiplication tables)
Write and calculate mathematical statements for division using the multiplication tables that they know, including for two-digit numbers divided by one-digit numbers, using mental and progressing to a formal written method

Number line Method

How many groups of 5 make 20?
Start at 20 and see how many groups of 5 have been taken away. This helps make the link with **repeated subtraction.**
The number line can be written with the dividend at the beginning of the number line or at the end – but this must be linked to repeated subtraction

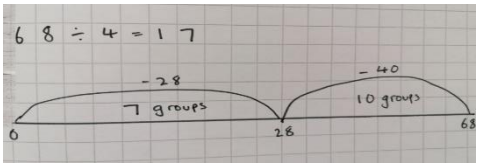


Number line or empty number line – partitioning in multiples of 10 then going up in groups of 1.

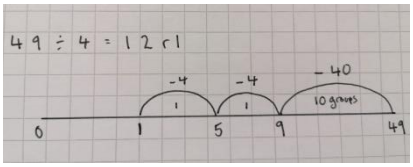


Dividend 10 times over the dividend and then going up in groups of 1.

Number line or empty number line – partitioning in multiples of 10 then finding the difference and finding how many groups are left



Number line – with remainders



Stage Four – Division

Recall multiplication and division facts for multiplication tables up to 12 × 12.
Use place value, known and derived facts to divide mentally
Divide two-digit and three-digit numbers by a one-digit number using formal written layout (not explicitly stated in the programmes of study but implied in the non-statutory guidance).

Ensure that children are confident with the methods outlined in the previous stage's guidance before moving on.
Calculate mathematical statements for division using the multiplication tables that the children know.

Number line progression

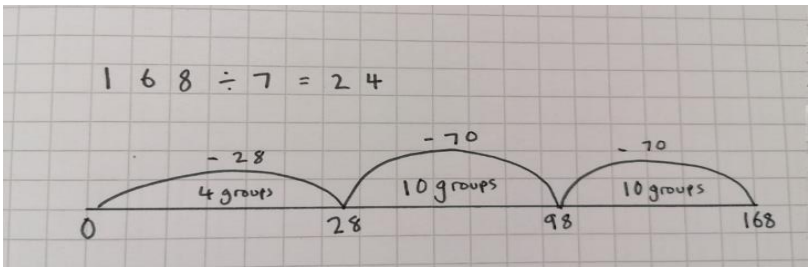
Children will continue to explore division as sharing and grouping, and to represent calculations on a number line until they have a secure understanding. Children should progress in their use of written division calculations:

1) Using tables facts with which they are fluent
2) Experiencing a logical progression in the numbers they use, for example:

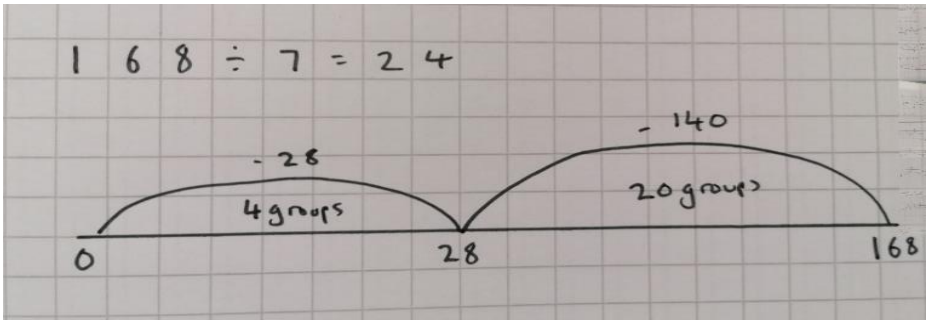
- Dividend just over 10x the divisor, e.g. 84 ÷ 7
- Dividend over 20x the divisor, e.g. 168 ÷ 7
- Dividend over 100x the divisor, e.g. 840 ÷ 7

All of the above stages should include calculations with remainders as well as without.

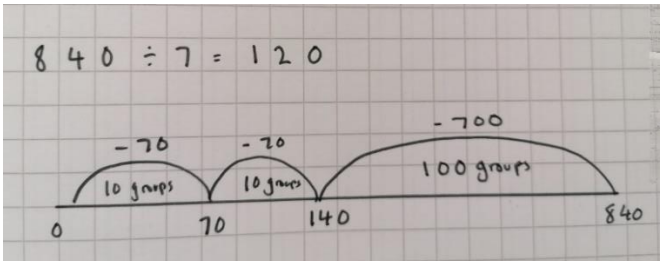
Dividend over 20x the divisor on number line in groups of 10



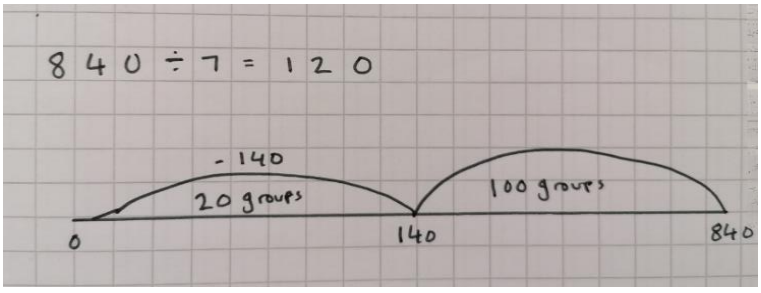
Dividend over 20x the divisor on number line in multiples of 10



Dividend over 100x the divisor on number line and then in groups of 10.

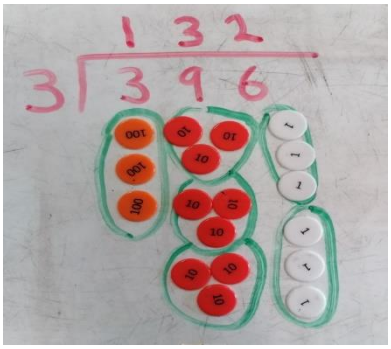


Dividend over 100x the divisor on number line and then in multiples of 10.



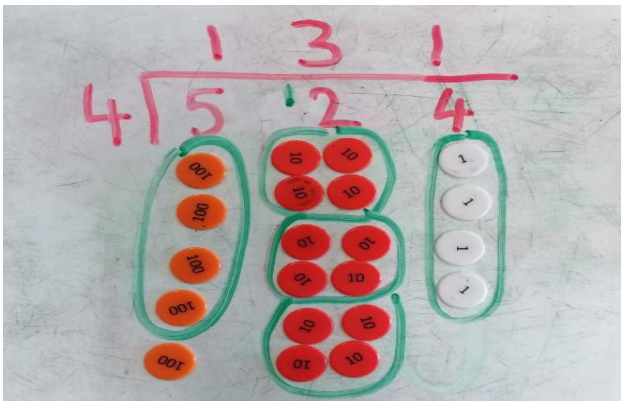
Short Division with place value counters part 1

Formal short division should only be introduced once children have a good understanding of division, its links with multiplication and the idea of 'chunking up' to find a target number (see use of number lines above)
Short division to be modelled for understanding using place value counters as shown below. Calculations with 2 and 3-digit dividends.



Short Division with place value counters part 2

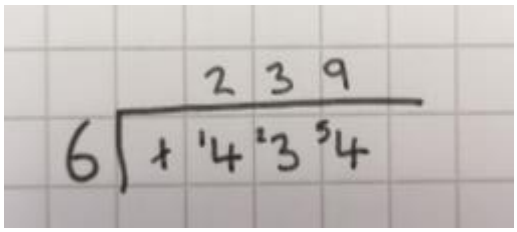
If a number does is not able to be grouped. It will be exchanged into the next column. Eg you can make one group of 4 when divided by 5. The extra hundred gets exchanged into the next column for 10 more 10's. Instead of having 2 tens, you now have 12 tens. How many groups of 4 are there now in 12.



Stage 5 Division

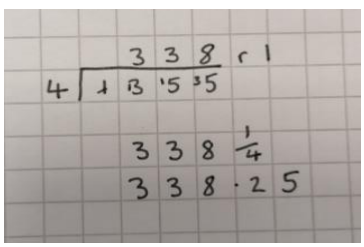
Divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context
Ensure that children are confident with the methods outlined in the previous stage's guidance before moving on.

Short Division



Short Division with remainders

Children begin to practically develop their understanding of how express the remainder as a decimal or a fraction. Ensure practical understanding allows children to work through this (e.g. what could I do with this remaining 1? How could I share this between 4 as well?)

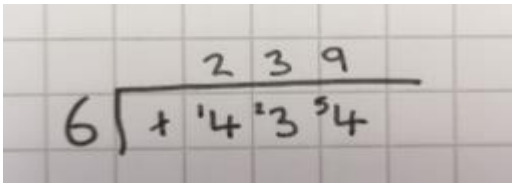


Stage 6 Division

Divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context
Divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context

Ensure that children are confident with the methods outlined in the previous stage's guidance before moving on. Continue to practise the formal method of short division, with and without remainders, using the language of place value to ensure understanding

Formal short Division



Formal Long Division