

Division

Year 6 Divide at least 4 digits by both single-digit and 2-digit numbers (including decimal numbers and quantities)

Short division, for dividing by a single digit: e.g. $6497 \div 8$

$$\begin{array}{r} 0812.125 \\ 8 \overline{) 6497.000} \end{array}$$

Short division with remainders: Pupils should continue to use this method, but with numbers to at least 4 digits, and understand how to express remainders as fractions, decimals, whole number remainders, or rounded numbers. Real life problem solving contexts need to be the starting point, where pupils have to consider the most appropriate way to express the remainder.

Calculating a decimal remainder: In this example, rather than expressing the remainder as $\frac{1}{8}$, a decimal point is added after the units because there is still a remainder, and the one remainder is carried onto zeros after the decimal point (to show there was no decimal value in the original number). Keep dividing to an appropriate degree of accuracy for the problem being solved.

Introduce long division by chunking for dividing by 2 digits.

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

Answer : 27

- Find out 'How many 36s are in 972?' by subtracting 'chunks' of 36, until zero is reached (or until there is a remainder).
- Teach pupils to write a 'useful list' first at the side that will help them decide what chunks to use, e.g.:

'Useful' list: $1x = 36$
 $10x = 360$
 $100x = 3600$

- Introduce the method in a simple way by limiting the choice of chunks to 'Can we use 10 lots? Can we use 100 lots? As children become confident with the process, encourage more efficient chunks to get to the answer more quickly (e.g. 20x, 5x), and expand on their 'useful' lists.

Where remainders occur, pupils should express them as fractions, decimals or use rounding, depending upon the problem.

Approximate,
Calculate,
Check it mate!

Must be aligned in place value for subtracting.