

Division

FOR PARENTS: Below is a guide to the teaching of division. Most children in Year 6 are able to use short division. We have included the teaching methods for Year 4 and 5 should you find you need to go back a step to aid understanding.

Year 4 Divide up to 3-digit numbers by a single digit (**without remainders initially**)

Continue to develop short division

$$\begin{array}{r} 218 \\ 4 \overline{) 872} \end{array}$$

Once children demonstrate a full understanding of remainders, and also the short division method taught, they can be taught how to use the method when remainders occur within the calculation and be taught to carry the remainder onto the next digit.

$$\begin{array}{r} 137 \text{ r } 5 \\ 7 \overline{) 964} \end{array}$$

Year 5 Divide up to 4 digits by a single digit, including those **with remainders**.

Short division, including remainder answers

$$\begin{array}{r} 0663 \text{ r } 5 \\ 8 \overline{) 5309} \end{array}$$

The answer to $5309 \div 8$ could be expressed as **663 and five eighths**, **663 r 5**, as a decimal, or **rounded** as appropriate to the problem involved.

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Year 5 Advice for staff

Short division with remainders

Now that pupils are introduced to examples that give rise to remainder answers, division needs to have a real life problem solving context, where pupils consider the meaning of the remainder and how to express it, ie. **as a fraction, a decimal**, or as a rounded number or value, depending upon the context of the problem.

A short division problem: 7 into 964. The quotient is 137 with a remainder of 5. The remainder is written as 'r 5'. Above the 6 is a '2' and above the 4 is a '5', indicating the steps taken.

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. $6497 \div 8$

A handwritten short division problem: 8 into 6497. The quotient is 812 with a remainder of 1. A decimal point is added, and the remainder is carried over as 10, then 100, then 1000, resulting in a quotient of 812.125.

Year 6 Advice for staff

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 r 1, 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.

When dividing by a double digit eg: $388 \div 23$, the short division method shown above should still be used.

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They pupil should start by writing out the first 109 multiples in a list, and then use the same method as above. In this example the pupil would write out the first 10 multiples of 23. The pupil would then use the list to support their working.