

Division: Violet (Y6)

Mental Work

Derive and recall

- equivalent fractions, decimals and percentages for hundredths, e.g. 35% is equivalent to 0.35 or 35/100

Work mentally (with jottings if needed)

- divide a 2-digit number by a single digit number, e.g. $92 \div 4$ (partition: use partitioning and the distributive law to divide tens and ones separately, e.g. $92 \div 4 = (80 + 12) \div 4 = 20 + 3 = 23$)
- divide by 25 or 50, e.g. $480 \div 25$, $3200 \div 50$ (form an equivalent calculation, e.g. to divide by 25, divide by 100 then multiply by 4; to divide by 50, divide by 100, then double)
- find the corresponding halves of decimals with units and tenths, e.g. half of 15.2
- divide multiples of 100 by a multiple of 10 or 100 (whole number answers), e.g. $600 \div 20$, $800 \div 400$, $2100 \div 300$
- divide 2-digit decimals such as $4.8 \div 6$
- find 10% or multiples of 10%, of whole numbers and quantities, e.g. 30% of 50 ml, 40% of £30, 70% of 200 g (use knowledge of the equivalence between fractions and percentages and the relationship between fractions and division)
- simplify fractions by cancelling

Children should be encouraged to:

* **approximate** their answers before calculating

***consider if a mental calculation** would be appropriate **before** using written methods

***check their answers** after calculation using an appropriate strategy

Recording

In Y6 children continue to use short division in the following stages:

- Four digit \div one digit with fraction remainders
- Four digit \div one digit with remainders as decimals (1.dp)
- Four digit \div one digit with remainders as decimals (2 or 3 dp)
- Three digit \div one digit with remainders as recurring decimals
- Dividing decimals by one digit numbers.
- Dividing four digit number by a two digit number (including decimals) using repeated addition

Short division (using repeated addition)

$$6576 \div 24 =$$

$$\begin{array}{r} 274 \\ 24 \overline{)6576} \end{array}$$

$$1 \times 24 = 24$$

$$2 \times 24 = 48$$

$$3 \times 24 = 72$$

$$4 \times 24 = 96$$

$$6 \times 24 = 144$$

$$7 \times 24 = 168$$

$$65$$

$$\underline{-48}$$

$$17$$

$$177$$

$$\underline{-168}$$

$$9$$

Missing Number Calculations

$$\square \square \square \div 4 = \square 25$$

$$\square \square \square \div 6 > 50$$

$$\frac{50}{\square} > 25$$

$$\square \div 8 = \pounds 27.50$$