

Y5

ADDITION

In Year 5, children learn to add numbers with up to 6 digits (up to one million) using the formal written method (column method).

$$\begin{array}{r} 21848 \\ + 1523 \\ \hline 23371 \end{array}$$

This is then extended to include money, measures and decimals up to 3 decimal places.

$$£23.59 + £7.55$$

$$\begin{array}{r} £23.59 \\ £ 7.55 \\ \hline £ 31.14 \end{array}$$

Children should be able to add more than two values, carefully aligning the place value columns and decimals.

$$\begin{array}{r} 19.01 \\ 3.65 \\ + 0.70 \\ \hline 23.36 \end{array}$$

Empty place value columns, such as the hundredths above can be filled with a zero to show the place value line in each column.

Children learn how to add fractions and mixed numbers with unlike denominators that are common multiples of each other, using their knowledge of equivalent fractions.

$$\frac{2}{5} + \frac{2}{15} = \frac{8}{15}$$

$$\frac{3}{4} + \frac{7}{8} = 1\frac{5}{8}$$

$$\frac{2}{5} = \frac{6}{15}$$

$$\frac{3}{4} + \frac{7}{8} = \frac{6}{8} + \frac{7}{8} = \frac{13}{8} = 1\frac{5}{8}$$

SUBTRACTION

In Year 5, all children should be able to subtract numbers up to 6 digits (numbers up to one million) with exchanging using the formal written method (column method).

$$\begin{array}{r} 38291 \\ - 18636 \\ \hline 19655 \end{array}$$

This is then extended to include money, measures and decimals up to 3 decimal places, carefully aligning the place value columns and decimals.

$$\begin{array}{r} 3\cancel{8}^7\cancel{9}^8\cancel{0}^1\cancel{4}^8\cancel{0}^1\cancel{.}^1\cancel{3}^4\cancel{0}^1\cancel{0}^1 \\ + 6753.66 \\ \hline 31295.74 \end{array}$$

They will also know that decimal points should line up under each other, particularly when subtracting mixed amounts.

Children learn how to subtract fractions and mixed numbers with unlike denominators that are common multiples of each other, using their knowledge of equivalent fractions.

$$\frac{11}{12} - \frac{2}{3} = \frac{3}{12}$$

$$\frac{2}{3} = \frac{8}{12}$$

$$\frac{11}{12} - \frac{8}{12} = \frac{3}{12}$$

MULTIPLICATION

In Year 5, children continue to apply their times tables and place value knowledge to multiply by increasingly large numbers and they should be able to multiply any number by 10, 100 or 1000, including decimals.

$$2 \times 30 = 60$$

$$2 \times 300 = 600$$

$$2 \times 3,000 = 6,000$$

Children multiply up to 4 digit numbers by 1 or 2 digits using the compact column multiplication method.

$$\begin{array}{r} 327 \\ \times 4 \\ \hline 1308 \end{array}$$

The children then progress to using the column method for long multiplication up to 4 digit x 2 digit.

$$\begin{array}{r} 1234 \\ \times 13 \\ \hline 3702 \\ 12340 \\ \hline 16042 \end{array}$$

$$\begin{array}{r} 1234 \\ \times 16 \\ \hline 7404 \\ 12340 \\ \hline 19744 \end{array}$$

(1234 x 6)
(1234 x 10)

Children learn to multiply fractions by integers.

$$5 \times \frac{2}{3} = \frac{2}{3} + \frac{2}{3} + \frac{2}{3} + \frac{2}{3} + \frac{2}{3}$$

$$= \frac{10}{3}$$

$$= 3\frac{1}{3}$$

DIVISION

In Year 5, the children divide up to 4 digits by a single digit, including those with remainders using the bus stop method.

$$\begin{array}{r} 663 \text{ r}5 \\ 8 \overline{) 5309} \\ \underline{40} \\ 130 \\ \underline{120} \\ 109 \\ \underline{104} \\ 5 \end{array}$$

The answer is then expressed as 663 r5.

Children then use the context of problems with money and measures to decide how to use the remainder, such as rounding the answer.

Children should also be able to divide any number by 10, 100 or 1000, including decimals.