

# Calculation Methods

What should I expect my child to be doing in Year 6?

## Written methods:

### Addition and Subtraction

#### National Curriculum Expectations:

- perform mental calculations, including with mixed operations and large numbers
- practise addition, subtraction for larger numbers, using the formal written methods of columnar addition and subtraction
- Solve problems involving numbers with mixed decimal places.

$$\begin{array}{r} 5413 \\ + 1528 \\ \hline 6941 \\ \hline \end{array}$$

$$\begin{array}{r} 1632 \\ - 391 \\ \hline 1241 \\ \hline \end{array}$$
  
$$\begin{array}{r} 124612 \\ - 2305 \\ \hline 10157 \\ \hline \end{array}$$

### Multiplication

#### National Curriculum Expectations:

- multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of short and long multiplication
- Multiply numbers up to two decimal places by a one digit whole number
- Multiply numbers up to two decimal places by one digit and two digit whole numbers

$$\begin{array}{r} 73 \\ \times 5 \\ \hline 365 \\ \hline \end{array}$$
$$\begin{array}{r} 124 \\ \times 6 \\ \hline 744 \\ \hline \end{array}$$
  
$$\begin{array}{r} 71 \\ \times 64 \\ \hline 284 \\ + 4260 \\ \hline 4544 \\ \hline \end{array}$$
$$\begin{array}{r} 312 \\ \times 26 \\ \hline 1872 \\ + 6240 \\ \hline 8112 \\ \hline \end{array}$$

### Division

#### National Curriculum Expectations:

- 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 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

$$3 \overline{) 1521}$$
  
$$5 \overline{) 2746} \text{ r } 1$$
  
$$5 \overline{) 2746} \text{ r } \frac{1}{5} = 549 \frac{1}{5}$$
  
$$5 \overline{) 2746} \text{ r } \frac{2}{5}$$

$$3 \overline{) 15465}$$
  
$$5 \overline{) 552830}$$

## Mental methods:

Alongside formal, written methods, our children will be equipped with a range of strategies to solve problems mentally. This table reflects the progression in the teaching and learning of mental methods of calculation. The majority of mental strategies will develop during numeracy lessons or guided numeracy sessions but discrete learning of mental methods may also be appropriate. Our children should look at a calculation and be able to say: **Can I work this out in my head? Do I need to use a written method? Do I need to use a calculator?**

	<b>Addition</b>	<b>Subtraction</b>	<b>Multiplication</b>	<b>Division</b>
Y5	Increasingly large numbers using 1 of the 3 mental methods: - partitioning - counting on - adjusting	Subtract with increasingly large numbers using 1 of the 3 methods (see below)	Multiply increasing large numbers using partitioning and jottings	Applying coin multiplication: $650 \div 50 = 13$ Calculate adjusted known facts e.g $2,500 \div 50 = 50$ To include decimals $0.81 \div 9 = 0.09$ .
Y6	Add any 2 large numbers or decimal numbers using the most appropriate of the 3 mental methods. - partitioning - counting on - adjusting	Subtract any 2 large numbers or decimal numbers using the most appropriate of the 3 methods - adjusting - counting back - counting on	Multiply increasing large numbers using partitioning and jottings	Perform mental calculations with large numbers. $1300 \div 14$ Derive known facts with any adjustment. Coin x and combining multiples 1,2,5,10,30,50,100.

*H = Hundreds*

*T = Tens*

*U = Units*

