

Calculation Methods

What should I expect my child to be doing in Year 4?

Written methods:

Addition

National Curriculum Expectations:

- add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate
- Solve simple measure and money problems involving decimals to two decimal places.

$$\begin{array}{r} 7824 \\ + 1963 \\ \hline 9787 \end{array}$$

Subtraction

National Curriculum Expectations:

- Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate.

Written Method:

1. Reinforce two two-digit and introduce two three-digit numbers and two four-digit numbers using expanded partitioning.
2. Columnar subtraction

T	U
90	14
- 30	6
50	8

$$\begin{array}{r} 3 \\ 6459 \\ - 1278 \\ \hline 5181 \end{array}$$

Multiplication

National Curriculum Expectations:

- multiply two-digit and three-digit numbers by a one-digit number using formal written layout

Written method:

1. Short multiplication (according to above objective).

$$\begin{array}{r} 24 \\ \times 6 \\ \hline 144 \end{array}$$

Division

National Curriculum Expectations:

- divide numbers up to 3 digit by a one-digit number using the formal written method of short division and begin to interpret remainders.

Written Method:

1. Reinforce chunking
 2. Short division (no remainders or carrying)
- Short division (with carrying)
- Short division (with carrying and remainders)

$$\begin{array}{r} 23 \\ 3 \overline{)69} \\ \hline \end{array}$$
$$\begin{array}{r} 042 \\ 3 \overline{)126} \\ \hline \end{array}$$
$$\begin{array}{r} 037 \text{ r}2 \\ 3 \overline{)123} \\ \hline \end{array}$$

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?**

	Addition	Subtraction	Multiplication	Division
Y3	Add H T U + U; H T U + T; H T U + H using mental partitioning.	Subtract H T U - U, H T U – T, H T U – H using counting down.	- Use known facts to derive related facts. - Missing number problems (simple)	Use x tables to derive division facts up to 2 digit numbers. 3x2=6 6÷3=2 60÷3=20
Y4	Add up to 2 three digit numbers using partitioning or counting on.	Subtract up to 2 x 3 numbers using counting down or counting on.	- Read & use x facts (all 2 x 12) - x mentally (using partitioning e.g. 9 x 34 = 9 x 30 and 9 x 4) - 3 digit numbers – derive facts - 2x6x5;10x6=60	Halving numbers up to 100. Extend mental methods to 3 digit numbers eg 600÷3=200 (2x3=6) INN - PIM. ÷ facts for x tables up to 12x12.
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÷50=13 Calculate adjusted known facts e.g 2,500÷50=50 To include decimals 0.81÷9=0.09.

H = Hundreds

T = Tens

U = Units

