

Subtraction

About our Calculation Policy

The following calculation policy has been devised to meet requirements of the National Curriculum 2014 for the teaching and learning of mathematics. It is also designed to give pupils a consistent progression of learning calculation methods across the school. Please note that early learning in number and calculation in Reception follows the 'Development Matters' EYFS document, and this calculation policy is designed to build on progressively from the content and methods established in the Early Years Foundation Stage.

Age stage expectations

The calculation policy is organised according to age stage expectations as set out in the National Curriculum 2014. It is vital that pupils are taught according to the stage that they are currently working at, being moved onto the next level when they are ready or working at a lower stage until they are secure enough to move on.

Providing a context for calculation

A problem solving approach helps to build children's understanding of the purpose of calculation, and to help them recognise when to use certain operations and methods when faced with problems. It is important that any type of calculation is given a real life context. This must be a priority within calculation lessons.

Choosing a calculation method

Children need to be taught and encouraged to use the following processes in deciding what approach they will take to a calculation, to ensure they select the most appropriate method for the numbers involved:

Can I do it in my head?

Could I use some jottings to help me?

Should I use a written method to work it out?

Subtraction

Early Years Subtract with numbers up to 20

combining two sets of objects into one group (5 cubes and 3 cubes)



Key skills for subtraction in **Early Years**:

- Recognise numerals 1 to 20 and place them in order.
- Count actions or objects which cannot be moved.
- Help children to recognise that when a group of objects is separated in different ways the total is the same
- Model and encourage the use of mathematical language, e.g. 'less' and 'fewer'
- Estimate how many objects they can see and check by counting.
- Say the number that is one less than a given number using fingers, number lines and objects.
- Record, using marks and pictures that they can interpret and explain.
- Help children to recognise that when a group of objects is separated in different ways the total is the same.
- Pose problems such as 'how many will there be when we take 5 away?'

Vocabulary: **take, take away, less, minus, subtract, leaves, difference**

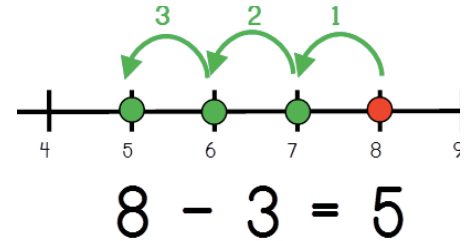
Subtraction

Year 1 Subtract with numbers up to 20

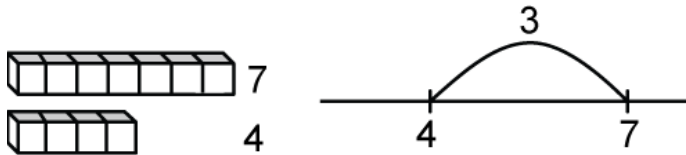
Children consolidate their understanding of subtraction with resources, showing subtraction on their fingers, on bead strings, using real objects and in familiar contexts. They are introduced to more formal recording using number lines as below:

Subtract by taking away (reduction)

Count back in ones on a numbered number line to take away, with numbers up to 20:



Find the distance between (comparison)



Use concrete materials and a number line to model and determine the difference between two numbers.

Mental subtraction Children should start recalling subtraction facts up to and within 10 and 20, and should be able to subtract zero.

Key skills for subtraction at Y1:

- Given a number, say one more or one less.
- Count to and over 100, forward and back, from any number.
- Represent and use subtraction facts to 20 and within 20.
- Subtract with one-digit and two-digit numbers to 20, including zero. Solve one-step problems that involve addition and subtraction, using concrete objects, pictures and missing number problems.
- Read and write numbers from 0 to 20 in numerals and words.

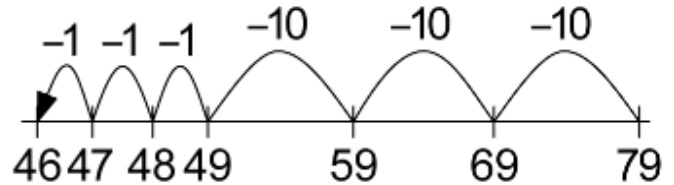
Vocabulary: equal to, take, take away, less, minus, subtract, leaves, difference, distance between, how many more, how many fewer / less than, most, least, count back, how many left, how much less is_?

Subtraction

Year 2 Subtract with 2-digit numbers Subtract on a number line by counting back, to develop mental subtraction skills.

Subtracting pairs of 2-digit numbers on a number line

Partitioning the second number and subtracting it first in tens then units: $79 - 33 = 46$, leading to the more efficient way of subtracting 30 then 3.



Mental strategy - subtract numbers close together by counting on: Children are taught to recognise that when numbers are close together, it is more efficient to **count on** the difference.

Key skills for subtraction at Y2:

- Recognise the place value of each digit in a two-digit number.
- Recall and use subtraction facts to 20 fluently, and find and use related facts up to 100.
- Subtract using concrete objects, pictures and mentally, including: a two-digit number and ones, a two-digit number and tens, and two two-digit numbers.
- Know that subtraction cannot be done in any order.
- Recognise and use inverse relationship between addition and subtraction, using this to solve missing number problems.
- Solve simple subtraction problems including measures.
- Read and write numbers to at least 100 in numerals and in words.

Key vocabulary: equal to, take, take away, less, minus, subtract, leaves, difference, distance between, how many more, how many fewer / less than, most, least, count back, how many left, how much less is_? **count on, strategy, partition, tens, units**

Subtraction

Year 3 Subtracting with 2 and 3-digit numbers.

The partitioned column subtraction method.

$$\begin{array}{r} 70 + 8 \\ - 30 + 4 \\ \hline 40 + 4 \end{array}$$

$$78 - 34 = 44$$

Introduce renaming (exchanging) through practical subtraction.

$$\begin{array}{r} 6070 + 122 \\ - 20 + 6 \\ \hline 40 + 6 = 46 \end{array}$$

Counting on as a mental strategy for subtraction

Continue to reinforce counting on as a strategy for close-together larger numbers (e.g. 321–256)

Key skills for subtraction at Y3:

- Subtract mentally a: 3-digit number and ones, 3-digit number and tens, 3-digit number and hundreds
- Estimate answers and use inverse operations to check.
- Solve problems, including missing number problems.
- Find 10 or 100 more or less than a given number.
- Recognise the place value of each digit in a 3-digit number.
- Read and write numbers up to 1000 in numerals and words.
- Practise mental subtraction strategies, such as subtracting near multiples of 10 and adjusting (e.g. subtracting 19 or 21), and select most appropriate methods to subtract, explaining why.

Key vocabulary: equal to, take, take away, less, minus, subtract, leaves, difference, distance between, how many more, how many fewer / less than, most, least, count back , how many left, how much less is_? count on, strategy, partition, tens, units exchange, decrease, hundreds, digit

Subtraction

Year 4 Subtract with up to 4 digits Moving towards more complex numbers and values than in Year 3. Using place value counters to reinforce exchanging.

Partitioned column subtraction with "exchanging" (decomposition)

$$\begin{array}{r} 3000 + \overset{500}{\cancel{600}} + \overset{140}{\cancel{40}} + 4 \\ 1000 + 300 + 80 + 2 \\ \hline 2000 + 200 + 60 + 2 \end{array} \quad \rightarrow \quad \begin{array}{r} 356144 \\ - 1382 \\ \hline 2262 \end{array}$$

A variety of mental strategies must be taught and practiced, including counting on to find the difference where numbers are closer together.

Key skills for subtraction at Y4:

- Subtract by counting on where numbers are close together or they are near to multiples of 10, 100 etc.
- Estimate and use inverse operations to check answers.
- Solve addition and subtraction 2-step problems, choosing which operations and methods to use and why.
- Solve simple measure and money problems involving fractions and decimals to two decimal places.
- Count backwards through zero, including negative numbers.
- Recognise place value of each digit in a 4-digit number Round any number to the nearest 10, 100 or 1000
- Solve number and practical problems that involve the above, with increasingly large positive numbers.

Key vocabulary: equal to, take, take away, less, minus, subtract, leaves, difference, distance between, how many more, how many fewer / less than, most, least, count back, how many left, how much less is_? count on, strategy, partition, tens, units exchange, decrease, hundreds, value, digit, inverse

Subtraction

Year 5 Subtract with at least 4 digits

including money, measures and decimals with different numbers of decimal

Subtracting with larger integers.

$$\begin{array}{r} \overset{2}{\cancel{3}} \overset{1}{2} \overset{0}{6} \overset{1}{\cancel{8}} \cdot \overset{1}{0} \\ - 730 \cdot 5 \\ \hline 2530 \cdot 5 \end{array}$$

$$\begin{array}{r} \overset{6}{4} \overset{1}{\cancel{7}} \overset{0}{\cancel{0}} \overset{4}{\cancel{8}} \overset{1}{5} \\ - 3229 \\ \hline 43826 \end{array}$$

Subtract with decimal values, including mixtures of integers and decimals, aligning the decimal point.

Key skills for subtraction at Y5:

- Subtract numbers mentally with increasingly large numbers.
- Use rounding and estimation to check answers to calculations and determine, in a range of contexts, levels of accuracy.
- Solve addition and subtraction multi-step problems in context, deciding which operations and methods to use and why.
- Read, write, order and compare numbers to at least 1 million and determine the value of each digit.
- Count forwards or backwards in steps of powers of 10 for any given number up to 1 million.
- Interpret negative numbers in context, counting forwards and backwards with positive and negative integers through 0.
- Round any number up to 1 million to the nearest 10, 100, 1000, 10 000 and 100 000.

Key vocabulary: Equal to, take, take away, less, minus, subtract, leaves, difference, distance between, how many more, how many fewer / less than, most, least, count back, how many left, how much less is_? count on, strategy, partition, tens, units, exchange, decrease, hundreds, value, digit, inverse, tenths, hundredths, decimal point, decimal

Subtraction

Year 6 Subtracting with increasingly large and more complex numbers and decimal values.

Use the compact column method to subtract more complex integers

$$\begin{array}{r} \cancel{1} \cancel{0} 15 \cdot \cancel{4} 11 \text{ kg} \\ - 036 \cdot 080 \text{ kg} \\ \hline 69 \cdot 339 \text{ kg} \end{array}$$

$$\begin{array}{r} \cancel{1} \cancel{0} \cancel{0} 699 \\ - 089,949 \\ \hline 60,750 \end{array}$$

Use the compact column method to subtract money and measures, including decimals with different numbers of decimal places.

Pupils should be able to apply their knowledge of a range of mental strategies, mental recall skills, and informal and formal written methods when selecting the most appropriate method to work out subtraction problems.

Key skills for subtraction at Y6:

- Solve addition and subtraction multi-step problems in context, deciding which operations and methods
- Read, write, order and compare numbers up to 10 million and determine the value of each digit
- Round any whole number to a required degree of accuracy
- Use negative numbers in context, and calculate intervals across zero.
- Children need to consider and use a range of mental subtraction strategies and written methods before choosing how to calculate.

Key vocabulary: equal to, take, take away, less, minus, subtract, leaves, distance between, how many more, how many fewer / less than, most, least, count back, how many left, how much less is_? difference, count on, strategy, partition, tens, units exchange, decrease, hundreds, value, digit, inverse, tenths, hundredths, decimal