## Addition

## addend + addend = sum

## Mental strategies

Children first learn how to solve addition calculations in their head. There are many strategies for this and children are encouraged to explore all of them and begin to make decisions about which ones would be useful for different questions.

## Using number bonds

Year 1
In reception, children learnt that numbers can be split into parts. In Year 1, this is then looked at in terms of addition. The children know that 6 is made up of 4 and 2 so this becomes $4+2=6$


## Counting on

## Year 1

Children learn that it is better to start at the larger number and then count on the required number of steps/jumps. The number they land on gives the sum.

## Year 2

Children count on in ones from any 2-digit number:
Method $1 \quad$ Count on from 25


Children also learn to count on in tens from any 2-digit number:

Although this strategy is not explicitly taught further up the school, it is often useful or referred back to.

## Year 3

From year 2, children count on in ones and tens from any 3 -digit number.

They also learn to count on in hundreds from any 3-digit number:


## Making ten (or power of)

This strategy is explicitly taught in years 1 and 4, but is used in all year groups.



## Adding to one value (ones, tens, hundreds etc.)

$\frac{\text { Year } 1}{\text { Children start by partitioning a number into tens and ones. They add the ones }}$ to the ones and then finally add on the tens.



## Year 2

Children partition the number into tens and ones. They add the tens to the tens and then finally add on the ones.

$$
\begin{array}{r}
10+20=30 \\
9+30=39
\end{array}
$$

$$
19+20=39
$$

## Year 3

Children apply what they learnt in years 1 and 2 to three-digit numbers. They also partition numbers to add just hundreds.

## Year 5

Children apply their learning to larger numbers. They focus on the digit in one place and change this to add.


## Unitising

Year 2
Children learn to change the units of a calculation. In year 2, they apply this to adding tens.


## Key Stage 2

Although this strategy is not taught in Key Stage 2, it is used when solving written methods. Children add ones, tens, hundreds and thousands by changing the units.

Add the ones.
4 ones +0 ones $=4$ ones
Add the tens.
1 tens +4 tens $=5$ tens
Add the hundreds.
3 hundreds +2 hundreds $=5$ hundreds
Add the thousands.
2 thousands +4 thousands $=6$ thousands

In Key Stage 2, this strategy is also taught when adding fractions and decimals.

## Adjusting

[^0]\[

\left.$$
\begin{array}{l}
2034+10=2044 \\
2034+9=2043
\end{array}
$$\right) 1 less
\]

## Written strategies

The main written strategy for solving addition problems is column addition. This should only be used when the calculation is too difficult to solve mentally.

## Year 2

Teaching begins with 2-digit numbers. Concrete resources (Dienes) are always used to support understanding.

Children start by adding a 2-digit number and a 1-digit number where there is no renaming.

Step 1 Add the ones.
5 ones +3 ones $=8$ ones


Step 2 Add the tens.


$$
25+3=28
$$

## Year 3

Teaching continues with 3-digit numbers. Children start with no renaming and Dienes are still used:


## Year 4

Teaching continues with 4-digit numbers. As with year 3, children start with no renaming but are now using place value counters to support them:

Find the sum of 2314 and 4240.


Next, they move onto a 2-digit number plus a multiple of ten.



The strategy is used in Years 5 and 6 to solve calculations with 5 and 6 -digit numbers and also with decimals, but there is no explicit teaching as children should be confident by this point.


[^0]:    Year 4
    When adding numbers that are close to an easy amount (e.g. a multiple of 10), children learn that they can add "too much" and then subtract to adjust for the correct answer.

