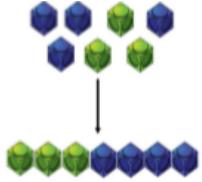
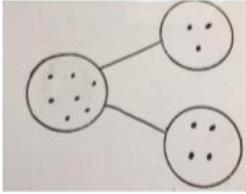
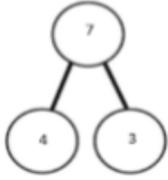
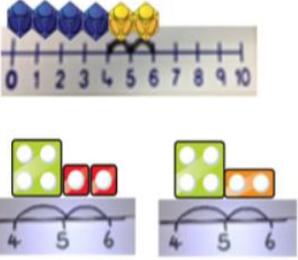
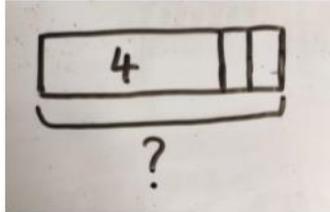
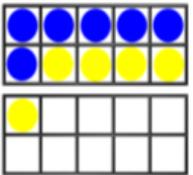
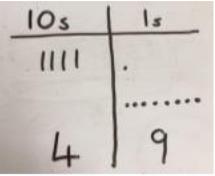
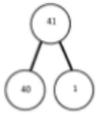
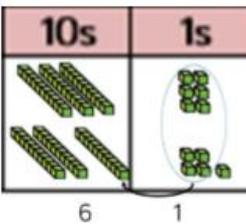
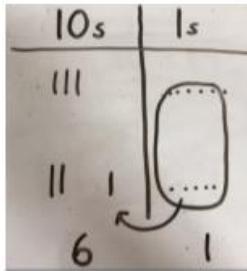
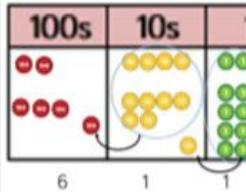
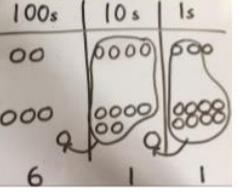


Addition

Skills	Concrete	Pictorial	Abstract
Combining two parts to make a whole part – whole, add, and, make, altogether, total, equal, equals, ones	 <p>Bringing items together to order and count.</p>	 <p>Children to represent the cubes using dots or crosses. They could put each part on a part whole model too.</p>	 <p>$4+3=7$ Four is a part, 3 is a part and the whole is seven.</p>
Counting on using number lines. number line, count on, more, plus, increase, numicon, bar model	<p>Counting on using number lines using cubes or Numicon.</p> 	 <p>A bar model which encourages the children to count on, rather than count all.</p>	 <p>The abstract number line: What is 2 more than 4? What is the sum of 2 and 4? What is the total of 4 and 2? $4 + 2$</p>
Regrouping to make a given number. (Starting with 10). tens, tens boundary, regroup, bonds, counters	<p>Regrouping to make 10; using ten frames and counters/cubes or using Numicon. $6 + 5$.</p> 	<p>Children to draw the ten frame and counters/cubes.</p> 	<p>Children to develop an understanding of equality .</p> <p>$6 + \square = 11$ $6 + 5 = 5 + \square$ $6 + 5 = \square + 4$</p> <p><i>*End of YR target*</i></p>
Two digit add a one digit. (Partition and place value). partition, addition, place value	<p>Continue to develop understanding of partitioning and place value. $41 + 8$</p> 	<p>Children to represent the base 10 e.g. lines for tens and dot/crosses for ones.</p> 	<p>Children can add the ones digits together to produce an answer.</p> <p>$1 + 8 = 9$ $40 + 9 = 49$</p>  <p><i>*End of Y1 target*</i></p>

Addition

<p>Two digit add a two digit. column, carry, increase, vertical, expanded, compact</p>		<p>Continue to develop understanding of partitioning and place value. 36 + 25.</p>		<p>Children to represent the base 10 in a place value chart.</p>	<p>$36 + 25 =$ $30 + 20 = 50$ Looking for ways to make 10. $5 + 5 = 10$ $50 + 10 + 1 = 61$</p> <p><i>*End of Y2 target*</i></p> <p>$\begin{array}{r} 30 \quad 6 \\ + 20 \quad 5 \\ \hline 50 \quad 11 = 61 \end{array}$</p> <p>N.B. See Written Methods page</p>
<p>Adding a three digit to a three digit number. Hundreds, exchange</p>		<p>When there are 10 ones in the 1s column- we exchange for 1 ten, when there are 10 tens in the 10s column- we exchange for 1 hundred.</p>		<p>Children to represent the counters in a place value chart, circling or marking when they make an exchange.</p>	<p>$\begin{array}{r} 243 \\ + 368 \\ \hline 611 \\ \hline 1 \quad 1 \end{array}$</p> <p>Children understand the value of the digits and perform the sum from right to left, exchanging as needed underneath the sum. N.B. See Written Methods page</p>

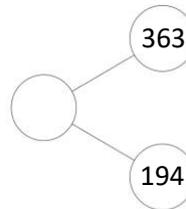
Conceptual variation (to build fluency):

$363 + 194$

= $194 + 363$

Three hundred and sixty three
Plus one hundred and ninety four = ?

?	
194	363



A school owns 363 chairs. They are then given another 194 by the council. How many chairs do they now have?

True/false?

The sum of 363 and 194 = 569.

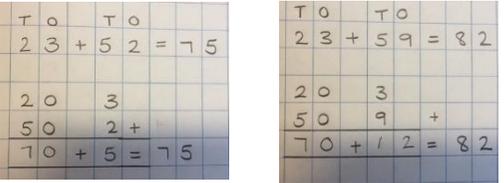
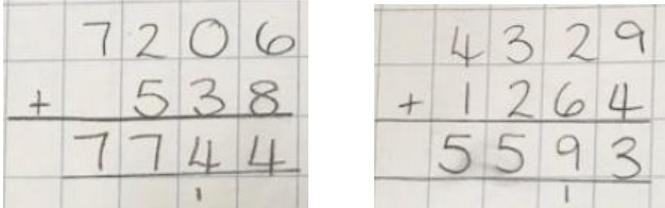
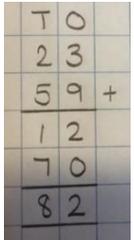
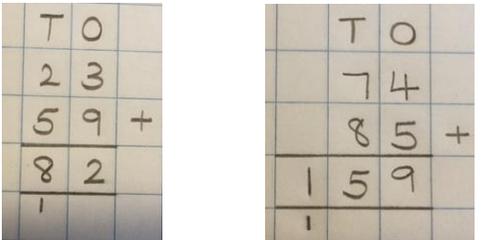
Mental strategies:

- Count in thousands, hundreds, tens, ones and hundredths as appropriate
- Reorder numbers in a calculation
- Partition into hundreds, tens and ones and in different ways and recombine by breaking units of 6, 7, 8 or 9 into '5 and a bit' ($724 = 600 + 110 + 14$)
- Add three 1 digit numbers; put the largest number first, using known facts (pairs to 10, doubles)
- Look for near doubles
- Begin to bridge through 10 and adjust
- Use known fact and place value to add
- Add 9, 19 and 11 or 21 by rounding and compensating
- Continue to use the relationship between addition and subtraction

Addition

Written Methods of Addition

N.B. Written abstract methods must only be used once children have a secure understanding of the operation and place value.

<p>1. Partitioning $23 + 52 = 75$ $23 + 59$ (1s crossing 10):</p> 	<p>Teaching Point</p> <p>Encourage children to start at the 'ones' column to feed into later practice. Reinforce place value columns language.</p>	<p>4. Add up to 4-digit numbers, including a mixed number of digits</p> <p>$7206 + 538$ $4329 + 1264$</p> 	<p>Teaching Point</p> <p>Reinforce place value to align the appropriate digits correctly.</p> <p>Remind to carry all exchanges underneath the sum in the correct column, which will be added later.</p>
<p>2. Expanded</p> <p>$23 + 59 = 82$</p> 	<p>Teaching Point</p> <p>Add the ones column first. The 1 digit in 12 is in the 10s place so the 1 digit is recorded in the 10s column.</p>		<p><i>*End of Y4 target*</i></p>
<p>3. Compact</p> <p>$23 + 59$</p> <p>Exchanging 1s: Exchanging 10s:</p> 	<p>Teaching Point</p> <p>Only progress to compact method at any step once the child is secure with their place value.</p> <p>Reinforce the exchange of 10 ones for 1 ten is shown by placing the 1 digit in the tens column (as shown).</p> <p>7 tens + 8 tens = 15 tens. Exchange 10 tens for 1 hundred which is recorded in the hundreds column.</p> <p><i>*End of Y3 target*</i></p>	<p>5. Add more than 4 digit numbers using formal written method</p> <p>$623,096 + 14,788$ $1,039,578 + 4,612,613$</p>  <p><i>*End of Y5 target*</i></p>	<p>Teaching Point</p> <p>Always include the decimal in the calculation and the answer. Align numbers and decimal point carefully to ensure place value matches. Encourage use of 0 as place holder as necessary.</p> <p><i>*End of Y6 target*</i></p>
	<p>6. Decimals to 3d.p in context</p> <p>$16.5\text{kg} + 4.15\text{kg} = 20.63\text{kg}$</p> 