



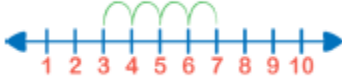
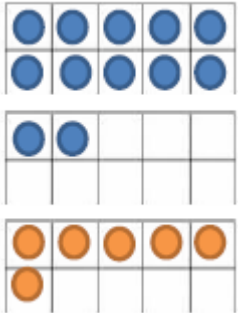
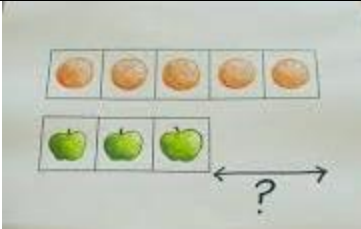

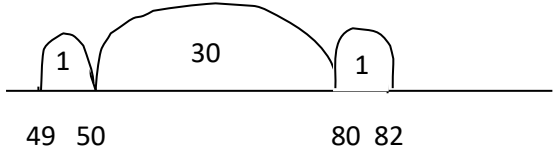
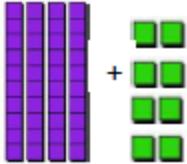

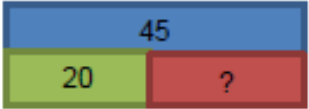


Addition and Subtraction

Learning Objectives	Written Calculations	Models or images	Mental Calculations	Known Facts
<p>Year 1</p> <p>Represent and show number bonds to 20 and related subtraction facts.</p> <p>Add and subtract one digit and two digit numbers to 20, including zero.</p> <p>Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs.</p> <p>Solve one step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = ? - 9$</p>	<p> $+ 11 = 20$</p> <p>$18 + \square = 20$</p> <p>$20 - \square = 12$</p> <p>$5 + 12 =$ $12 - 5 =$ $7 + \underline{\quad} = 19$ $13 - \underline{\quad} = 8$</p> <p>Hannah has 12 balloons. Six of them pop. How many balloons does Hannah have left?</p>  <p>$12 - 6 = 6$</p>	<p>Base 10</p> <p>$10 + 6 = 16$</p>  <p>Numicon</p> <p>$8 + 8 = 16$</p>  <p>Numberlines - counting in 1s</p> <p>$3 + 4 + 7$</p>  <p>Ten Frames</p> <p>$12 + 6 =$</p>  <p>Bar Model</p> <p>$5 - 3 = 2$</p>	<p>Add numbers of objects to 10</p> <p>- Begin to add by counting on from the number of objects in the first set</p>	<p>Doubles of numbers to 5</p> <p>Number bonds to 10</p> <p>$10 + \text{ones}$</p>

				
<p>Year 2 Show that the addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot. Add and subtract numbers using concrete objects, pictorial representations, and mentally, including: a two digit number and ones; a two digit number and tens; two two digit numbers; adding three one digit numbers. Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve</p>	<p><u>Partitioning</u> Add two digit numbers together using a written method, eg using 'smiles'.</p> $36 + 45$  $30 + 40 = 70$ $6 + 5 = 11$ $70 + 11 = 81$ <p><u>Numberlines</u> Subtract numbers using a numberline, eg</p> $82 - 49 =$ 	<p>Base 10 Calculate:</p>  <p>Numicon</p> $9 - 3 = 6$  <p>Bar Model Owen has 45 football cards, he gives 20 to his friend Jack. How many does he have left? Use the bar model to help you.</p> 	<p>Begin to add multiples of 10 to a 2 digit number, e.g. calculate $26 + 30$ (By counting on in 10s or partitioning) Record their work in writing, e.g. - record their mental calculations as number sentences</p>	<p>Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100. Doubles of numbers to 10 and corresponding halves All addition facts to 10.</p> $16 + \square = 20$ $20 = 15 + \square$ $20 - \square = 12$

missing number problems.
Solve problems with addition and subtraction: using concrete objects and pictorial representations, including those involving numbers, quantities and measures; applying their increasing knowledge of mental and written methods.

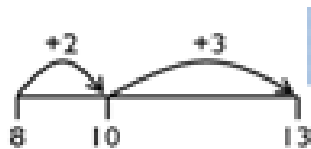
Year 3
Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction.
Estimate the answer to a calculation and use inverse operations to check answers.
Solve problems, including missing number problems, using number facts, place value, and more complex addition and

Column Addition and Subtraction

$$\begin{array}{r} 239 \\ + 154 \\ \hline 393 \end{array}$$

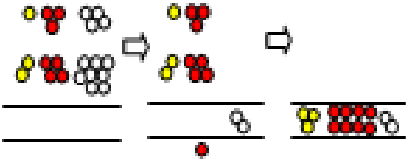
$$\begin{array}{r} 6712 \\ - 56 \\ \hline 16 \end{array}$$

Teaching mental calculation on a numberline



Add and subtract numbers mentally, including: a three-digit number and ones; a three-digit number and tens; a three digit number and hundreds.

Double 15, 25, 35, 45 and corresponding halves
All addition facts for totals to 20 (**Derived using compensating, bridging or near doubles**)
Addition facts for multiples of 10, e.g. 70 + 90 = 160
Multiples of 5 which total 100

<p>subtraction. Add and subtract amounts of money to give change, using both £ and p in practical contexts.</p>						
<p>Year 4 Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate. Estimate and use inverse operations to check answers to a calculation. Solve addition and subtraction two step problems in contexts, deciding which operations and methods to use and why.</p>	<p><u>Column Addition and Subtraction</u></p> <p>Adding and subtracting numbers to 2 decimal places Adding and subtracting numbers with different number of digits Using the most efficient method to add and subtract</p> $\begin{array}{r} 56.\cancel{4}0 \\ -5.22 \\ \hline 51.18 \end{array}$ <p style="text-align: center; margin-left: 100px;">3 10</p> $\begin{array}{r} 239 \\ 154 \\ \hline 393 \end{array} +$	<p>Bar Model</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><td style="text-align: center;">2821</td></tr> <tr><td style="text-align: center;">2178</td></tr> </table> <p>Model using counters to show carrying into the next column.</p> 	2821	2178	<p>Calculation complements to 1000 for multiples of 10, e.g. 340 + ___ = 1000 100 = ___ + ___</p>	<p>Number bonds to 10, 20, 100 and 200</p>
2821						
2178						

Year 5

Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)
Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy.
Solve addition and subtraction multi-step problems in contexts deciding which operations and methods to use and why.

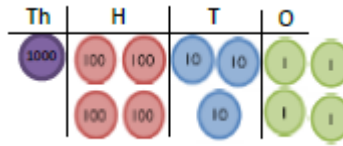
Column Addition and Subtraction

Adding and subtracting numbers which do not have the same number of decimal places

$$\begin{array}{r} 528 + 7.49 \\ \hline 535.49 \end{array}$$

Calculate addition and subtraction problems using place value counters

$$1,434 + 2,517$$



Add and subtract numbers mentally with increasingly large numbers.

Doubles of hundredths to 0.09 and corresponding halves
Addition facts for hundredths up to 0.09
e.g. $0.07 + 0.09 = 0.16$