


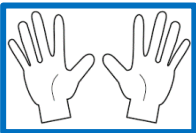
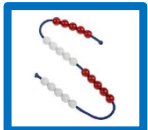

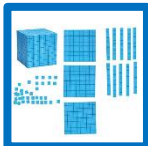


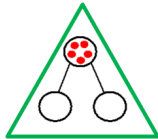
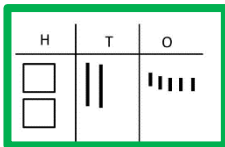
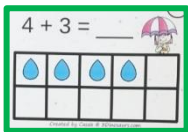
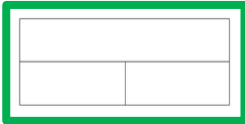
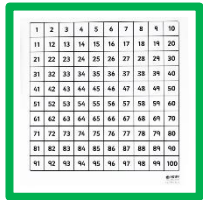

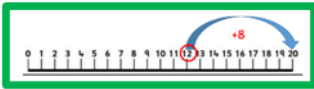
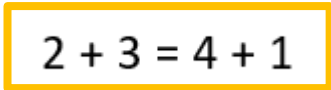
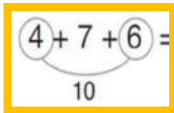
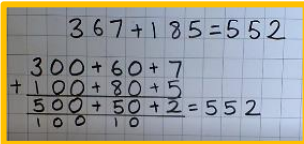
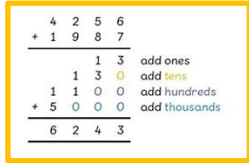

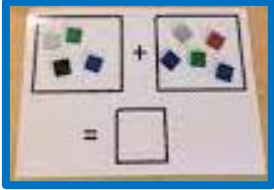
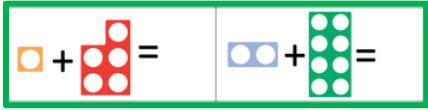

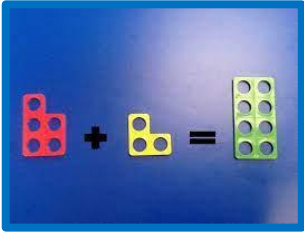

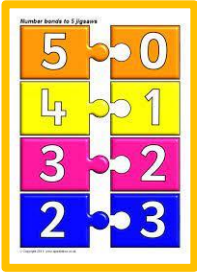
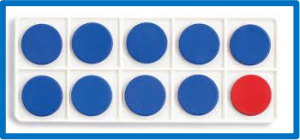
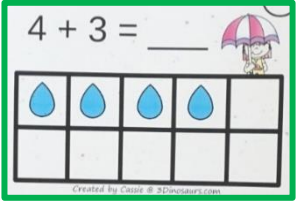



Overview of Strategies and Methods - Addition

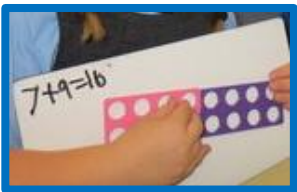
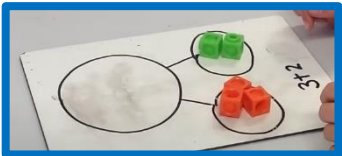
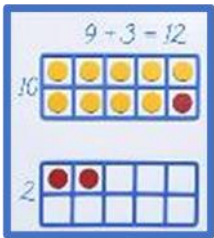
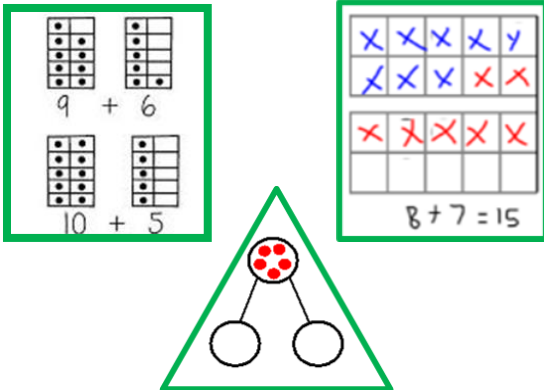
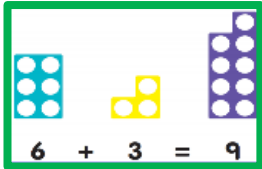
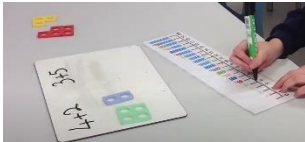

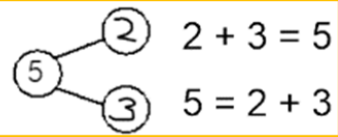
At Gossops Green, we use the Concrete, Pictorial, Abstract method in our maths teaching. Children are simultaneously introduced to a maths concept using a range of concrete materials and equipment that they can physically manipulate, pictorial representations of a concept and more abstract ways of working. This allows for a deeper understanding of the skills and knowledge required to apply addition in different contexts. An overview of these for addition can be found below:

	Concrete	Pictorial	Abstract
Addition	<p>Children are taught to use the following concrete resources (the list is not exhaustive):</p> <div>   </div> <div> <p>Multilink</p> <p>Numicon</p> </div> <div>   </div> <div> <p>Everyday items</p> <p>Fingers</p> </div> <div>   </div> <div> <p>Bead strings</p> <p>Place Value counters</p> </div> <div>   </div> <div> <p>Dienes Base Ten</p> <p>Tens Frames</p> </div>	<p>Children are taught to use the following pictorial representations to support their addition:</p> <div>   </div> <div> <p>Drawings</p> <p>Part-Part-Whole</p> </div> <div>   </div> <div> <p>Drawing dienes</p> <p>Drawing tens frames</p> </div> <div>   </div> <div> <p>Bar Model</p> <p>Hundred square</p> </div> <div>   </div> <div> <p>Drawing place value counters</p> <p>Number lines</p> </div>	<p>Children are taught to use the following abstract methods to record / solve addition calculations:</p> <div>  </div> <p>Use of + and = symbols</p> <div>  </div> <p>Using known number facts</p> <div>  </div> <p>Expanded written method</p> <div>  </div> <p>Expanded column method</p> <div>  </div> <p>Compact written method</p>


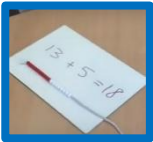
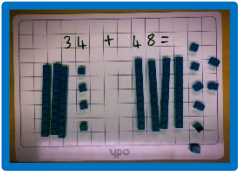
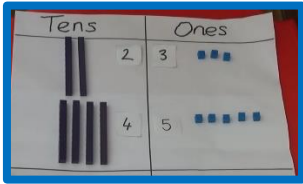
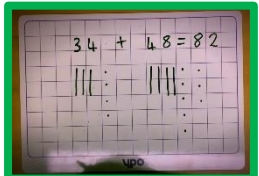



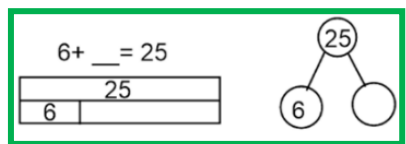
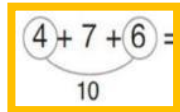
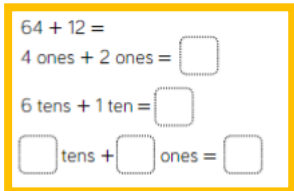
Overview of Strategies and Methods - Reception – Addition

	Concrete	Pictorial	Abstract
	Children at the expected level of development will automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 and some number bonds to 10		
Addition	<p>Children use a range of concrete apparatus to manually add 2 small amounts</p> 	<p>Children add using pictorial representations of maths equipment including numicon:</p> 	<p>Using rote learning and repetition, children are taught to count on and back in 1s to beyond 20.</p> 
	<p>Children add using Numicon</p> 	<p>or everyday objects</p> 	<p>Children are taught to automatically recall number bonds to 5 and some number bonds to 10.</p> 
	<p>Children are taught to use the tens frame</p> 	<p>Children develop their understanding of the tens frame by counting and drawing dots</p> 	<p>Children are introduced to the + and = sign</p> 



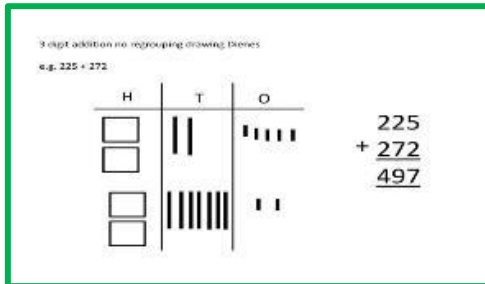
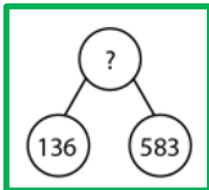
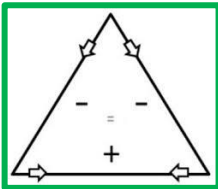
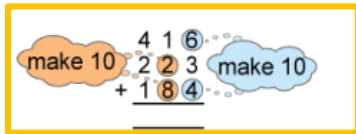
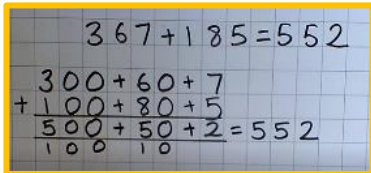
Overview of Strategies and Methods - Year 1 – Addition

	Concrete	Pictorial	Abstract
	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> • read, write and interpret mathematical statements involving addition (+), subtraction (−) and equals (=) signs • represent and use number bonds within 20 • add one-digit and two-digit numbers to 20, including 0 • solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = ? - 9$ 		
Addition	<p>Children use a wider range of concrete apparatus to manually add 2 amounts.</p>  <p>Children are taught to use multiple tens frames and part, part, whole model with concrete apparatus</p>  <p>1 1 Addition Combining two parts - YouTube</p> 	<p>Children develop their understanding of the tens frame and part, part, whole model by drawing dots</p>  <p>Children add using pictorial representations of numicon:</p>  <p>Children start to use number lines to add two numbers</p>  <p>1 2 Addition Counting on - YouTube</p>	<p>Children are taught to add two numbers by putting the larger number first and counting on.</p> <div style="border: 2px solid orange; padding: 10px; display: inline-block;"> $7 + 5 =$ </div> <p>Children are taught to understand the meaning of the + and = signs. Calculations are written either side of the equal sign so that the sign is not just interpreted as 'the answer'.</p> <div style="border: 2px solid orange; padding: 10px; display: inline-block;"> $2 = 1 + 1$ $2 + 3 = 4 + 1$ </div> <p>Children start to record their calculations using the + and = signs</p>  <p>Children develop their understanding of the part, part, whole model by writing abstract numbers</p> <div style="border: 2px solid orange; padding: 10px; display: inline-block;">  </div>

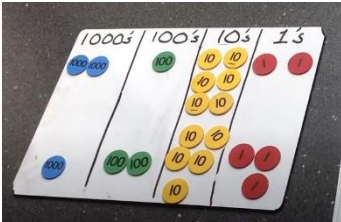

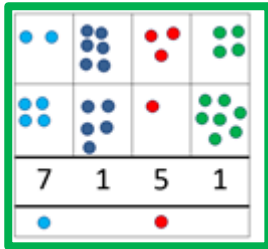

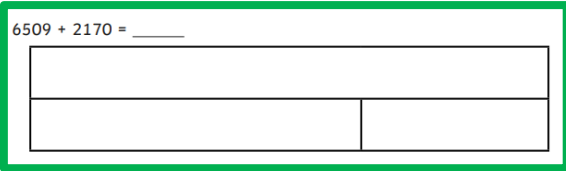
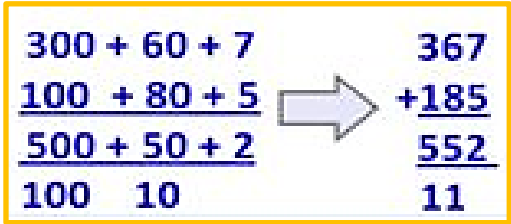

Overview of Strategies and Methods – Year 2 – Addition

	Concrete	Pictorial	Abstract
	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> recall and use addition facts to 20 fluently, and derive and use related facts up to 100 add numbers using concrete objects, pictorial representations, and mentally, including: a two-digit number and 1s / a two-digit number and 10s / 2 two-digit numbers / 3 one-digit numbers show that addition of 2 numbers can be done in any order (commutative) 		
Addition	<p>Children use practical resources to add 3 numbers and larger numbers:</p> <p>2 1 Addition Adding 3 single digits - YouTube</p>   <p>Bead string addition - Rossett EMS SpLD (mycrafts.com)</p> <p>Children are taught to use dienes...</p>  <p>Year 2 addition - YouTube (Beginning – 3:25)</p> <p>moving onto using dienes in place value grids.</p> <p>Column addition using Dienes (without and with regrouping) - YouTube</p> 	<p>Children draw their own dienes</p>  <p>Year 2 addition - YouTube (3:25-4:40)</p> <p>Moving onto drawing dienes in place value grids</p>  <p>Children use number lines and number squares to add two 2-digit numbers by counting on in 10s, then in 1s</p>   <p>Children start to interpret bar models and explore the link between different pictorial representations</p> 	<p>Children complete abstract calculations, using known number facts where possible, including their knowledge of number bonds</p>  <p>Children partition numbers and calculate totals mentally, when appropriate</p> 



Overview of Strategies and Methods - Year 3 – Addition

	Concrete	Pictorial	Abstract				
	<p>Pupils should be taught to:</p> <ul style="list-style-type: none">add numbers mentally, including: a three-digit number and 1s / a three-digit number and 10s / a three-digit number and 100sadd numbers with up to 3 digits, using formal written methods of columnar addition						
Addition	<p>Children use dienes and place value counters to add in columns but including hundreds</p>  <p>3 2 Addition Column addition with regrouping place value counters - YouTube</p> <p>KS2 - how to add using Dienes cubes - YouTube</p> 	<p>Children use jottings to represent dienes or counters pictorially</p>  <p>Children continue to represent addition calculations in a variety of pictorial ways:</p> <div>$274 + 354 = ?$<table><tr><td colspan="2">628</td></tr><tr><td>274</td><td>354</td></tr></table></div>  	628		274	354	<p>Children apply their use of number facts to solve additions</p> <div>$324 + 100 = 424$$324 + 20 = 344$$324 + 9 = 333$</div> <p>Children use their knowledge of number facts to add mentally where possible</p>  <p>Children use written calculations to add, including calculations that involve regrouping</p> 
	628						
274	354						

Overview of Strategies and Methods – Year 4 – Addition

	Concrete	Pictorial	Abstract
	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> add numbers with up to 4 digits using the formal written method of columnar addition where appropriate 		
Addition	<p>Children use dienes, place value counters and place value grids to add numbers with up to 4 digits:</p> <p>4 1 Addition Column method 4 digits - place value counters - YouTube</p>  <p>KS2 - how to add using Dienes cubes - YouTube</p> 	<p>Children use and interpret jottings to represent dienes or counters pictorially</p>   <p>Children continue to interpret bar models and begin to draw their own:</p> 	<p>Children extend their understanding of the expanded column method</p>  <p>Moving onto the compact method</p> 

Overview of Strategies and Methods – Year 5 and 6 – Addition

	Concrete	Pictorial	Abstract																						
	<p>Pupils should be taught to:</p> <ul style="list-style-type: none">• add whole numbers with more than 4 digits, including using formal columnar addition (Y5)• add numbers mentally with increasingly large numbers (Y5)• perform mental calculations, including with mixed operations and large numbers (Y6)• use their knowledge of the order of operations to carry out calculations involving the 4 operations (Y6)																								
Addition	<p>Children use dienes, place value counters and place value grids to add numbers with over 4 digits:</p> <div></div>	<p>Children are taught to represent more complex problems in ways that are meaningful to them. This may include the bar model:</p> <div><p>Buzzard Sky Diving Company have taken individual bookings worth £12,584 and group bookings worth £15,992. Some people have cancelled at the last minute. £1,629 has had to be returned to them. How much money has the sky diving company taken altogether?</p><table><tr><td>£12,584</td><td>£15,992</td></tr><tr><td colspan="2">?</td></tr></table><p>← £1,629</p></div>	£12,584	£15,992	?		<p>Children consolidate their understanding of the compact method, including larger numbers, adding numbers with a different number of digits and both sides of the decimal place.</p> <div><table><tr><td></td><td>4</td><td>8</td><td>2</td><td>7</td><td>6</td></tr><tr><td>+</td><td></td><td>5</td><td>6</td><td>1</td><td>3</td></tr><tr><td colspan="6"></td></tr></table></div>		4	8	2	7	6	+		5	6	1	3						
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