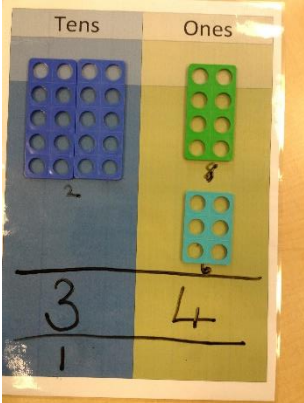


First Base - Calculation Policy



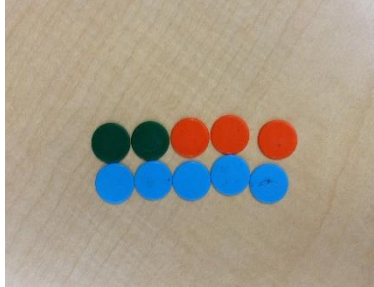
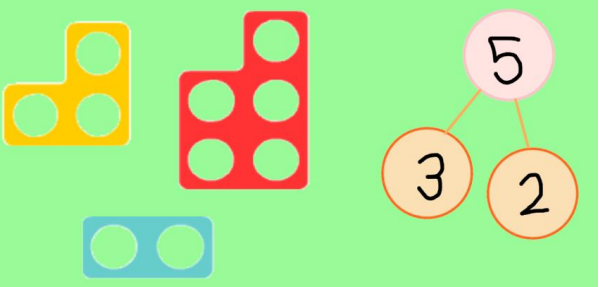
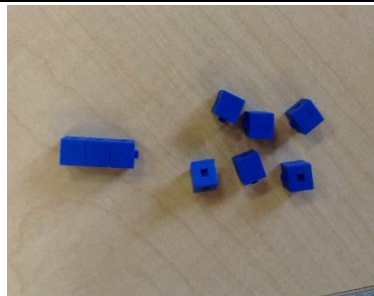
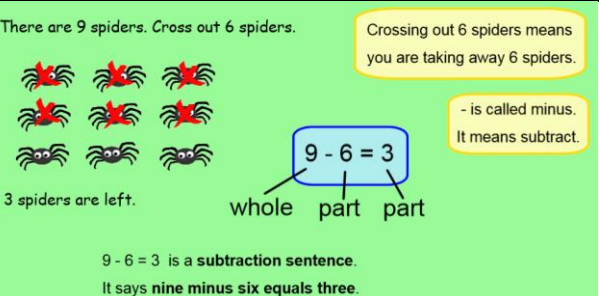


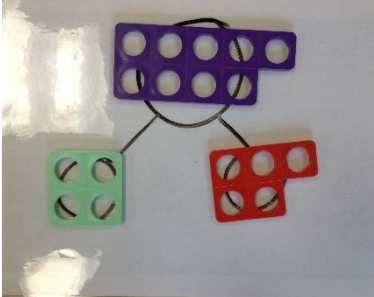
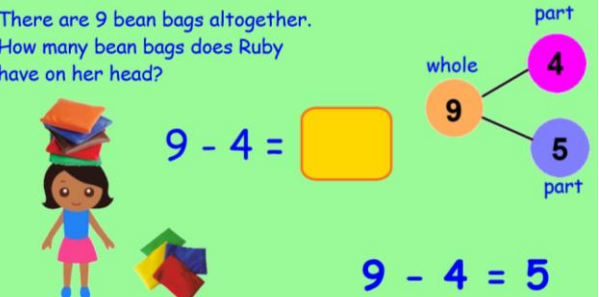
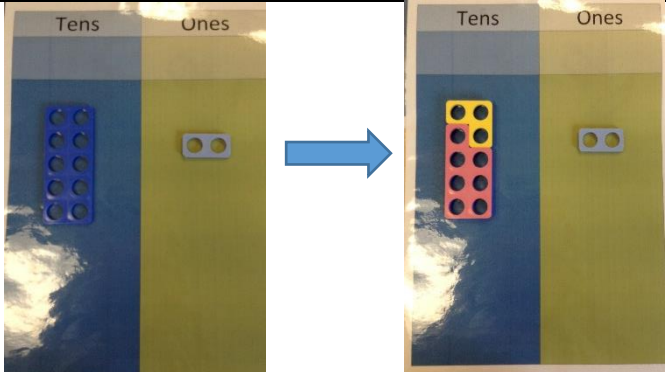
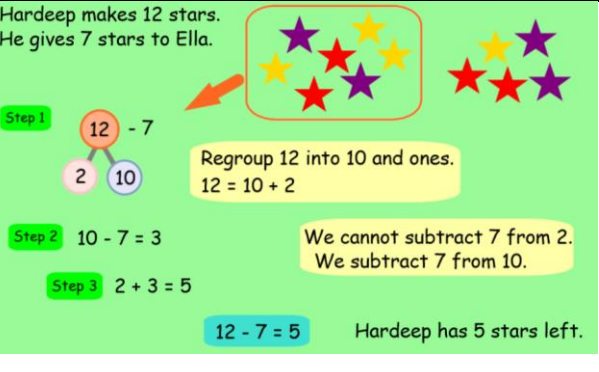
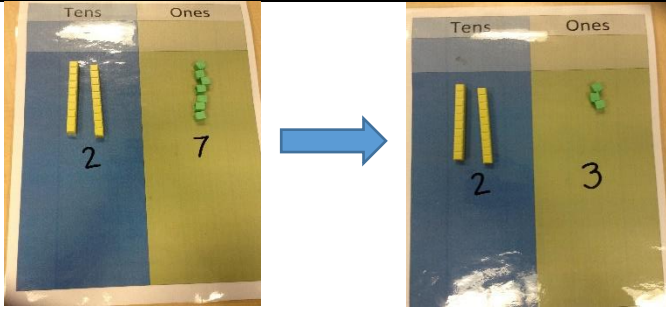
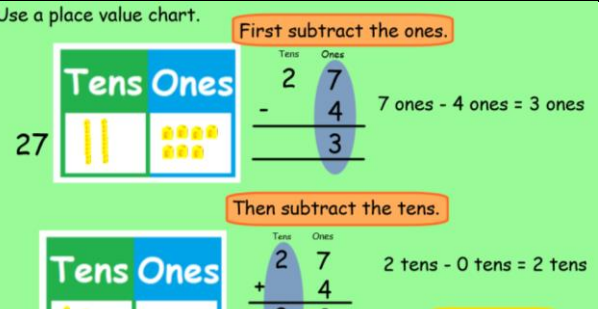
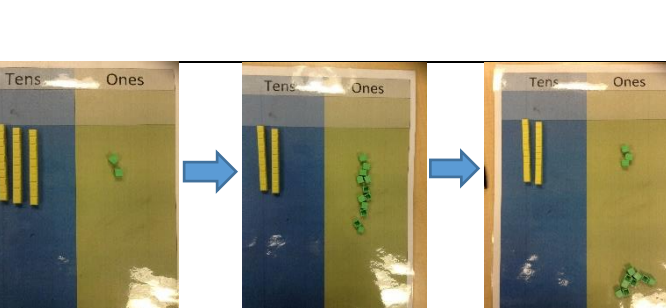
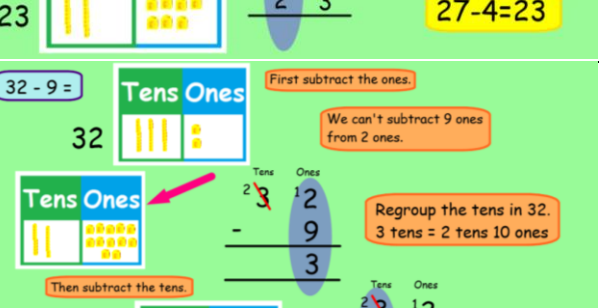
First Base teaching of addition and subtraction is based on Concrete-Pictorial-Abstract (CPA) modelling. The foundations for beginning to add and subtract are rooted in a secure understanding of number, counting and number bonds. We use a wide variety of manipulatives at the concrete stage to allow pupils to construct their own cognitive models for abstract mathematical ideas and processes. At the abstract stage pupils thinking is extended, allowing them to apply their learnt skills to contextual problem solving.

This policy is a working document and will be revised and amended as necessary.

Addition			
Objective	Concrete	Pictorial	Abstract
Counting to 10		Count the things. How many are there? 	
Making number bonds			
Counting on			6 + 2 = Jack has 6 marbles and Tom gives him 2 more. How many marbles does Jack have now?
Part-part whole		How many penguins are there altogether? 4 + 3 = ? 	4 + 3 = There are 4 penguins at the igloo, 3 more penguins join them. How many penguins are there now?
Making 10			8 + 6 = 8 cherries fall off the tree, then 6 more fall off. How many cherries have fallen off the tree?
Regrouping into tens and ones			16 + 3 = Sarah has 16 blue marbles and 3 yellow marbles. How many marbles does Sarah have?
Simple column		Use a place value chart. 	24 + 3 = 24 cars and 3 trucks drive over the bridge. How many vehicles drove over the bridge?

<p>Column with regrouping ones</p>		<p>Use a place value chart.</p> <p>First add the ones.</p> <table border="1"> <thead> <tr> <th>Tens</th> <th>Ones</th> </tr> </thead> <tbody> <tr> <td>2</td> <td>8</td> </tr> <tr> <td>+</td> <td>6</td> </tr> <tr> <td></td> <td>4</td> </tr> <tr> <td>1</td> <td></td> </tr> </tbody> </table> <p>8 ones + 6 ones = 14 ones</p> <p>Then add the tens.</p> <table border="1"> <thead> <tr> <th>Tens</th> <th>Ones</th> </tr> </thead> <tbody> <tr> <td>2</td> <td>8</td> </tr> <tr> <td>+</td> <td>6</td> </tr> <tr> <td>3</td> <td>4</td> </tr> <tr> <td>1</td> <td></td> </tr> </tbody> </table> <p>2 tens + 1 ten = 3 tens</p> <p>28+6=34</p>	Tens	Ones	2	8	+	6		4	1		Tens	Ones	2	8	+	6	3	4	1		<p>$28 + 6 =$</p> <p>There are 28 seats in the cinema. There are 6 extra spaces for wheelchairs. How many people can watch the film?</p>				
Tens	Ones																										
2	8																										
+	6																										
	4																										
1																											
Tens	Ones																										
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<p>Column addition to 1000, with regrouping ones</p>		<p>$268 + 114 = \underline{\quad}$</p> <p>First add the ones. Then add the tens. Finally add the hundreds.</p> <table border="1"> <thead> <tr> <th>H</th> <th>T</th> <th>O</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> </tr> <tr> <td>+</td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th>Hundreds</th> <th>Tens</th> <th>Ones</th> </tr> </thead> <tbody> <tr> <td>2</td> <td>6</td> <td>8</td> </tr> <tr> <td>+</td> <td>1</td> <td>1</td> </tr> <tr> <td></td> <td></td> <td></td> </tr> </tbody> </table>	H	T	O				+						Hundreds	Tens	Ones	2	6	8	+	1	1				<p>$268 + 114 =$</p> <p>There are 268 sweets in a jar, the shop keeper puts 114 more sweets in. How many sweets are in the jar now?</p>
H	T	O																									
+																											
Hundreds	Tens	Ones																									
2	6	8																									
+	1	1																									
<p>Column addition to 1000, with regrouping tens</p>		<p>$367 + 152 = \underline{\quad}$</p> <p>First add the ones. Then add the tens. Finally add the hundreds.</p> <table border="1"> <thead> <tr> <th>H</th> <th>T</th> <th>O</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> </tr> <tr> <td>+</td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th>Hundreds</th> <th>Tens</th> <th>Ones</th> </tr> </thead> <tbody> <tr> <td>3</td> <td>6</td> <td>7</td> </tr> <tr> <td>+</td> <td>1</td> <td>5</td> </tr> <tr> <td></td> <td></td> <td></td> </tr> </tbody> </table>	H	T	O				+						Hundreds	Tens	Ones	3	6	7	+	1	5				<p>$367 + 152 =$</p> <p>367 children went to Legoland on Monday. On Tuesday 152 more children went than on Monday. How many children went to Legoland on Tuesday?</p>
H	T	O																									
+																											
Hundreds	Tens	Ones																									
3	6	7																									
+	1	5																									

Subtraction

Objective	Concrete	Pictorial	Abstract
Counting to 10		Count the things. How many are there? 	
Making number bonds			
Taking away		There are 9 spiders. Cross out 6 spiders.  <p>Crossing out 6 spiders means you are taking away 6 spiders.</p> <p>3 spiders are left.</p> <p>$9 - 6 = 3$</p> <p>whole part part</p> <p>- is called minus. It means subtract.</p> <p>$9 - 6 = 3$ is a subtraction sentence. It says nine minus six equals three.</p>	$9 - 6 =$ Nine spiders were on a web, 3 spiders fell off. How many spiders were left?
Counting back		There are 9 flies. 6 flies are stuck in a web. How many flies are still flying?  <p>$9 - 6 = ?$</p> <p>Count on from the smaller number.</p> <p>3 steps</p> 	$9 - 6 =$ There are 9 flies. 6 are stuck in a web. How many are still flying?
Number bonds		There are 9 bean bags altogether. How many bean bags does Ruby have on her head?  <p>$9 - 4 =$</p> <p>whole part part</p> <p>$9 - 4 = 5$</p>	$9 - 4 =$ Ruby had 9 bean bags balanced on her head. 4 of them fell off. How many does she have left on her head?
Regrouping into tens and ones		Hardeep makes 12 stars. He gives 7 stars to Ella.  <p>Step 1: $12 - 7$</p> <p>Regroup 12 into 10 and ones. $12 = 10 + 2$</p> <p>Step 2: $10 - 7 = 3$</p> <p>We cannot subtract 7 from 2. We subtract 7 from 10.</p> <p>Step 3: $2 + 3 = 5$</p> <p>$12 - 7 = 5$ Hardeep has 5 stars left.</p>	$12 - 7 =$ Hardeep makes 12 stars. He gives 7 stars to Ella. How many stars does Hardeep have left?
Simple column subtraction		Use a place value chart.  <p>First subtract the ones.</p> <p>$27 - 4 =$</p> <p>7 ones - 4 ones = 3 ones</p> <p>Then subtract the tens.</p> <p>$23 - 4 = 23$</p> <p>2 tens - 0 tens = 2 tens</p>	$27 - 4 =$ There are 27 apples on a tree. 4 of them are red and the rest are green. How many green apples are on the tree?
Regroup the tens		$32 - 9 =$  <p>First subtract the ones.</p> <p>We can't subtract 9 ones from 2 ones.</p> <p>Regroup the tens in 32. 3 tens = 2 tens 10 ones</p> <p>Then subtract the tens.</p> <p>$23 - 9 = 23$</p> <p>12 ones - 9 ones = 3 ones</p> <p>2 tens - 0 tens = 2 tens</p>	$32 - 9 =$ The bakery makes 32 gingerbread men. They sell 9 in the morning. How many are left to sell in the afternoon?
Column subtraction to 1000, with			

regrouping ones			
Column subtraction to 1000, with regrouping tens			

Date reviewed: September 2024

Reviewed by: Stacey Laws