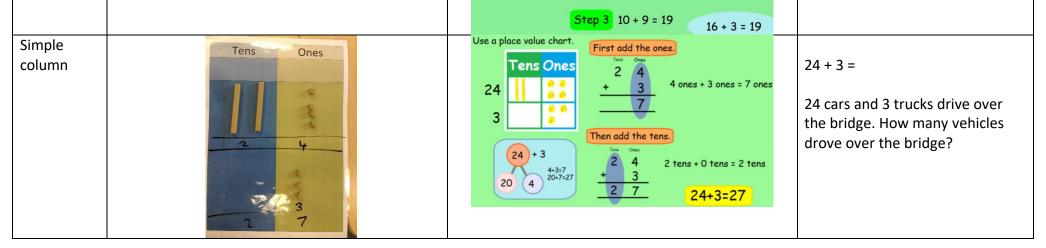
First Base - Calculation Policy

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.

Objective	Concrete	Pictorial	Abstract
Counting to 10		Count the things. How many are there?	
Making number bonds			
Counting on		Count on from the greater number. 6, 7, 8. 6 + 2 = ? $6 + 2 = 8$ part part whole	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 = ? part 4 whole 7 part 3	4 + 3 = There are 4 penguins at the igloo 3 more penguins join them. How many penguins are there now?
Making 10		B + 6 First make a group of 10 cherries Then add the cherries that are left over.	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		Step 1 16 + 3 Regroup 16 into 10 and ones. 10 6 Step 2 Add 3 to 6. Add the ones.	16 + 3 = Sarah has 16 blue marbles and 3 yellow marbles. How many marbles does Sarah have?



Column with regrouping ones	Tens Ones Cooperations Cooperat	Use a place value chart. 28 6 Tens Ones 2 8 ones + 6 ones = 14 ones 4 1 Then add the tens. 34 Tens Ones 4 1 Tens Ones 4 1 Tens Ones 2 8 ones + 6 ones = 14 ones 2 8 ones + 6 ones = 14 ones 2 8 2 8 4 1 Then add the tens. 2 8 2 8 2 8 4 1 Then add the tens. 2 8 2 8 4 1 Then add the tens. 2 8 2 8 2 8 4 1 Then add the tens. 2 8 2 8 2 8 4 1 Then add the tens. 2 8 2 8 2 8 2 1 8 0 8 0 8 0 8 0 8 0 8 0 8 0 8 0	28 + 6 = There are 28 seats in the cinema. There are 6 extra spaces for wheelchairs. How many people can watch the film?
Column addition to 1000, with regrouping ones		268 + 114 = First add the ones. Finally add the hundreds H T O + + H T O + H T O + H T O + H T O + H T O H T O	268 + 114 = There are 268 sweets in a jar, the shop keeper puts 114 more sweets in. How many sweets are in the jar now?
Column addition to 1000, with regrouping tens		367 + 152 = First add the ones. Then add the tens. Finally add the hundreds. H T O H T O	367 + 152 = 367 children went to Legoland on Monday. On Tuesday 152 more children went than on Monday. How many children went to Legoland on Tuesday?

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. There are 9 spiders. Cross out 6 spiders. Crossing out 6 spiders means you are taking away 6 spiders. - is called minus. It means subtract. 9 - 6 = 3 is a subtraction sentence. It says nine minus six equals three.	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? 9 - 6 = ? Count on from the smaller number. 3 steps	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? 9 - 4 = 9 - 4 = 5	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	Tens Ones CC Image: Colored state sta	Hardeep makes 12 stars. He gives 7 stars to Ella. Step 1 12 - 7 2 10 Regroup 12 into 10 and ones. 12 = 10 + 2 Step 3 2 + 3 = 5 12 - 7 = 5 Hardeep has 5 stars left.	12 – 7 = Hardeep makes 12 stars. He gives 7 stars to Ella. How many stars does Hardeep have left?	
Simple column subtraction	Tens Ones 2 7	Use a place value chart. Tens Ones 27 Tens Ones 27 Tens Ones 27 Then subtract the ones. 7 ones - 4 ones = 3 ones Then subtract the tens. 2 7 2 7 4 7 7 ones - 4 ones = 2 ones 2 7 2 7 2 7 4 7 2 7 2 7 2 7 2 7 2 1 2 7 2 7 2 7 2 7 2 7 2 7 2 7 2 7	27 – 4 = a 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	Ones Tens Ones → → → → → →	32 - 9 = 32 Tens Ones 32 Tens Ones Tens Ones 2 3 12 9 3 Cones Tens Ones 2 3 12 9 3 Cones 1 2 3 12 9 3 Cones 1 2 3 12 1 3 12 1 2 3 12 1 3 12	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 2022

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