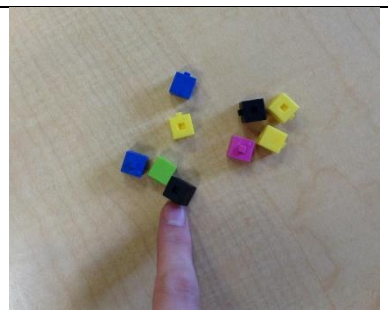
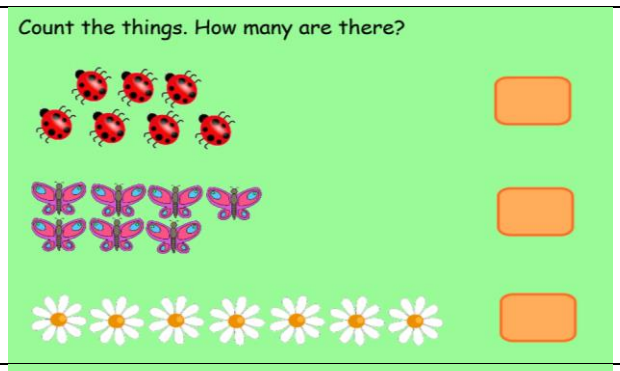
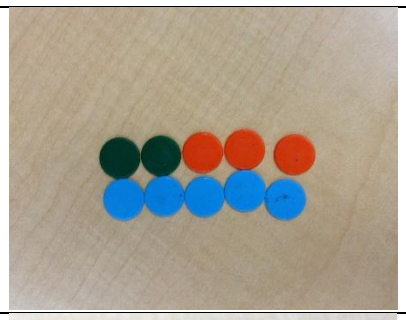
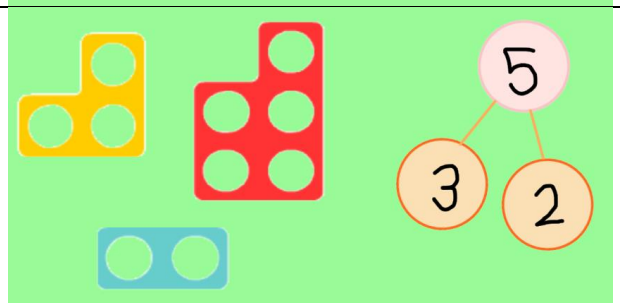
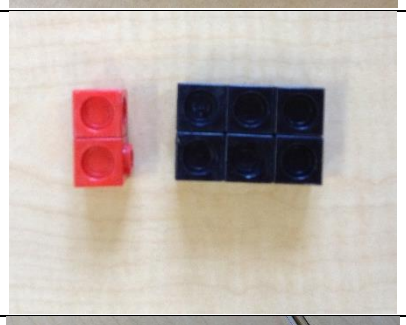
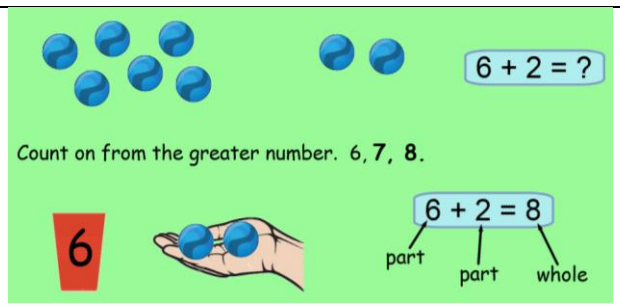
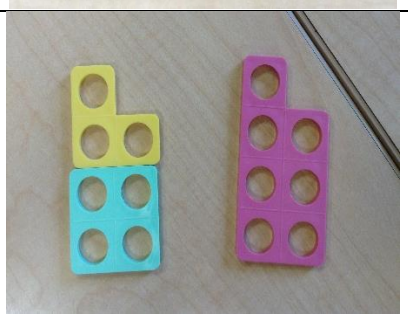
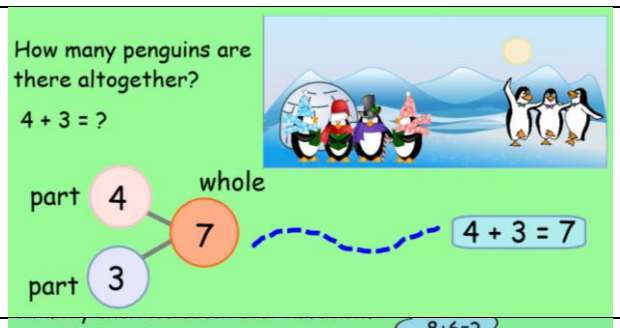
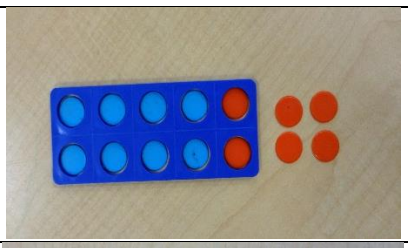
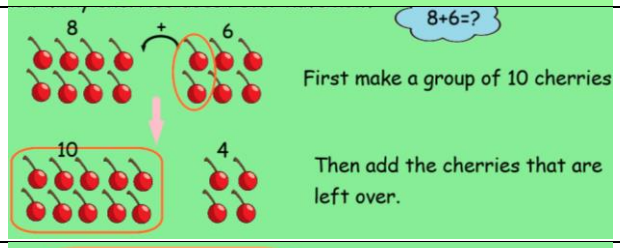
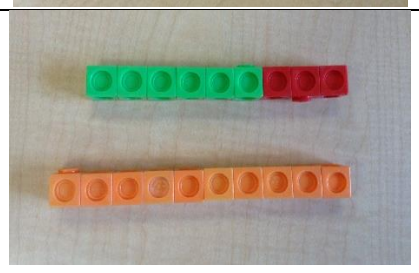
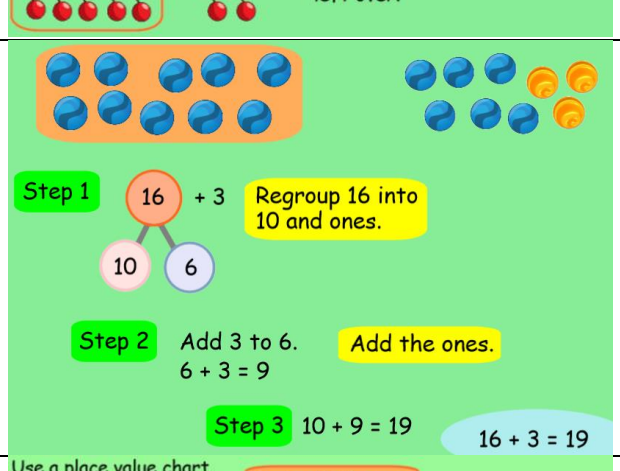
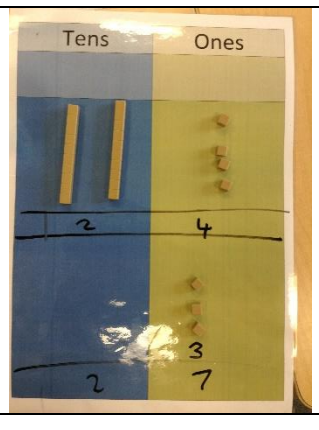
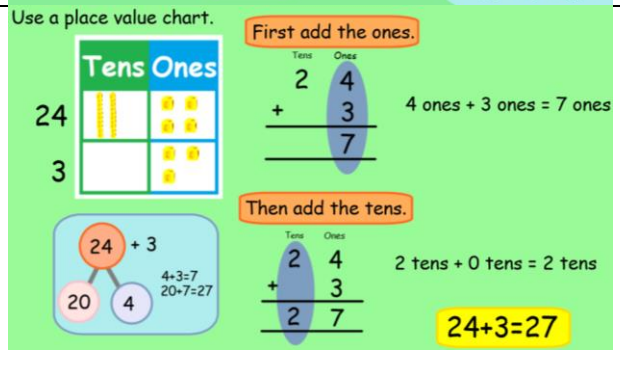
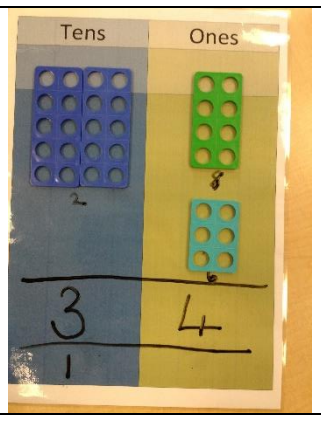
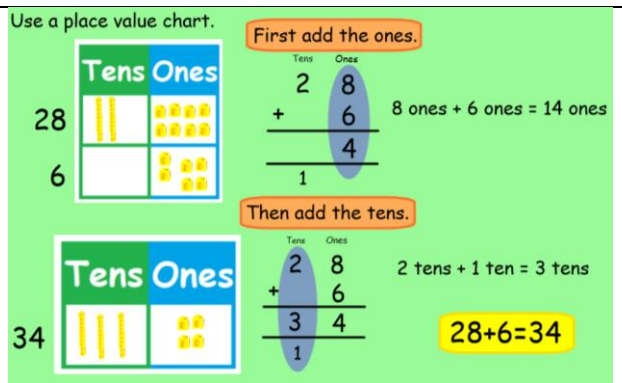
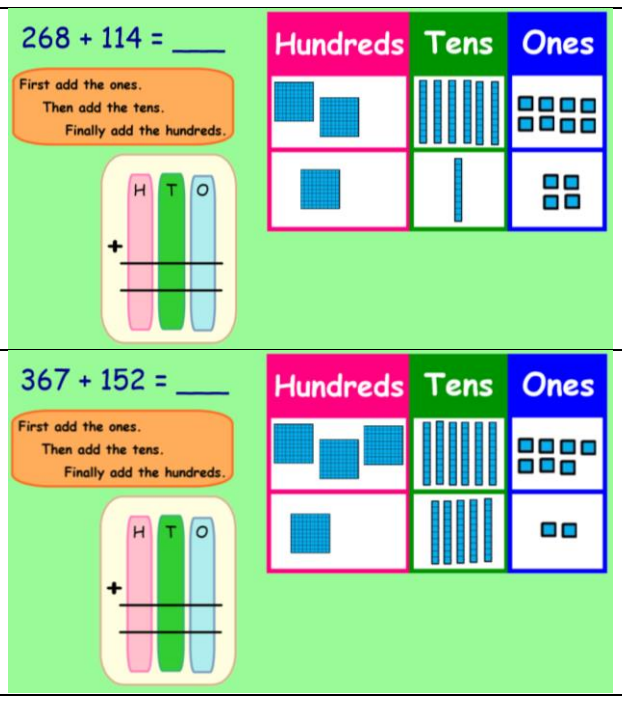
First Base - Calculation Policy

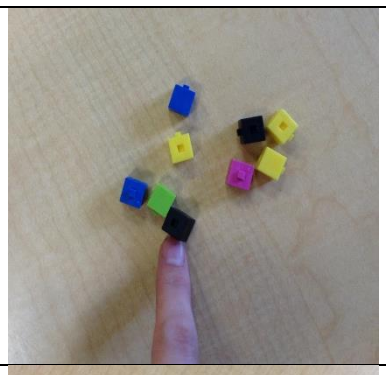
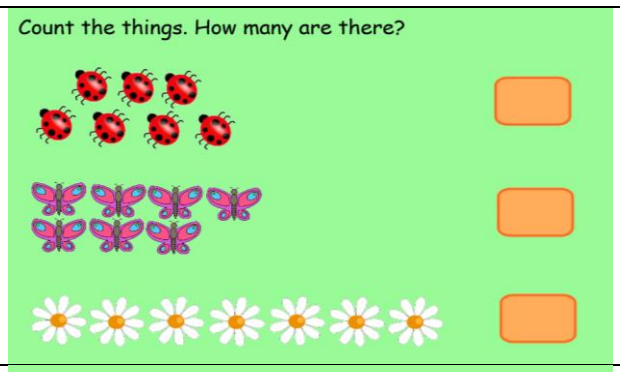
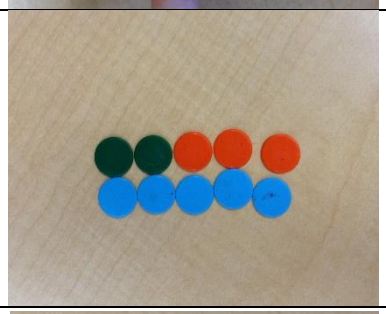
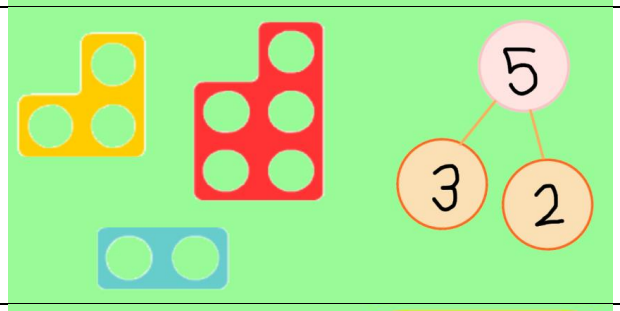
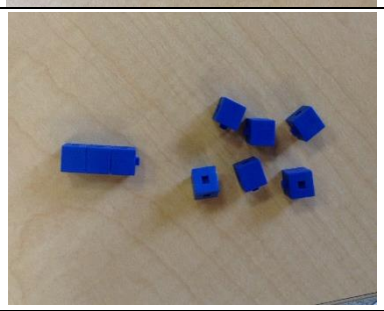
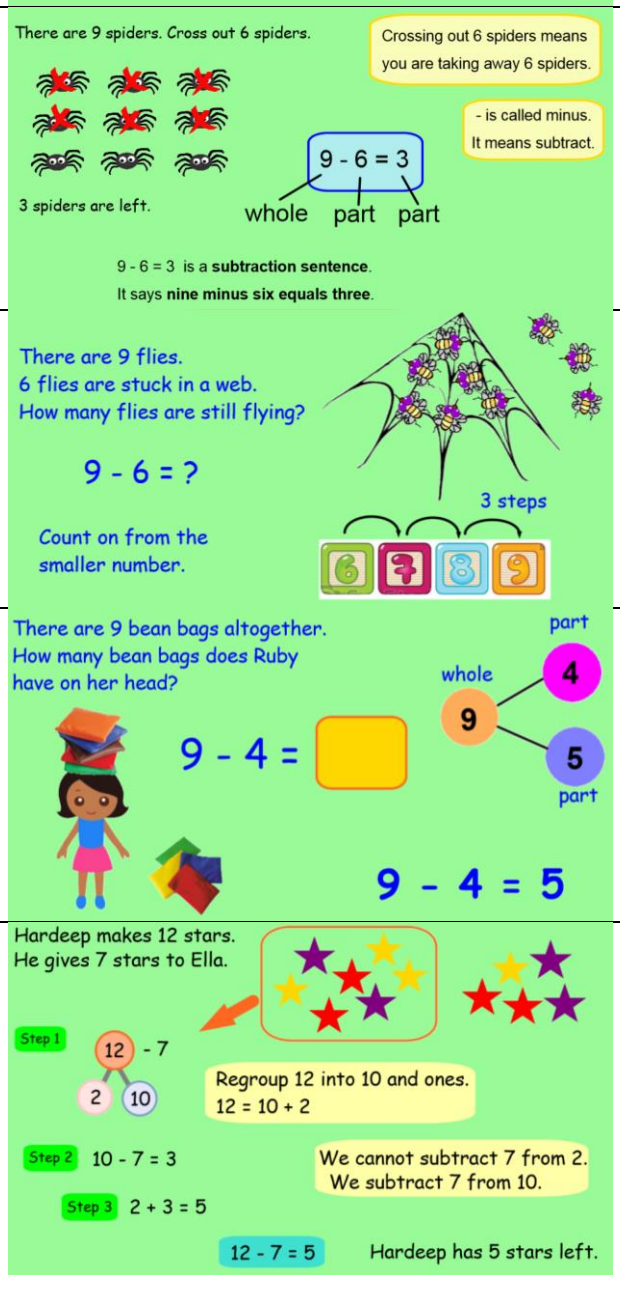
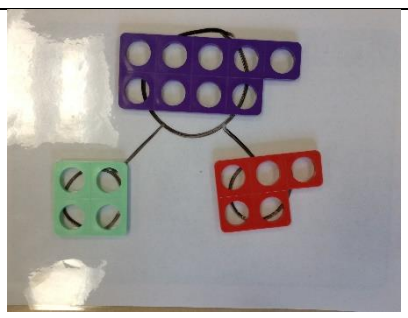
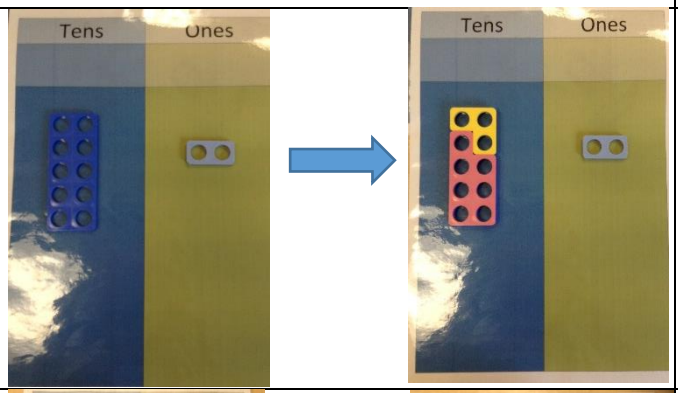
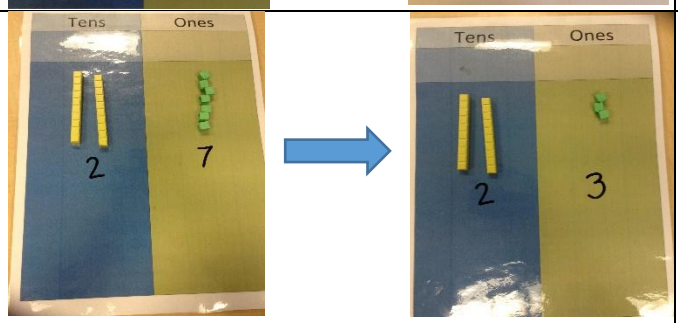
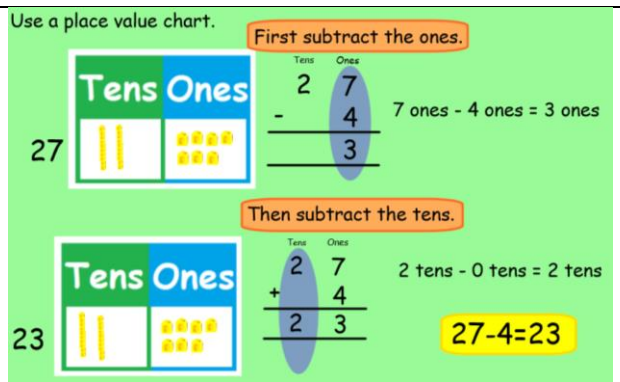
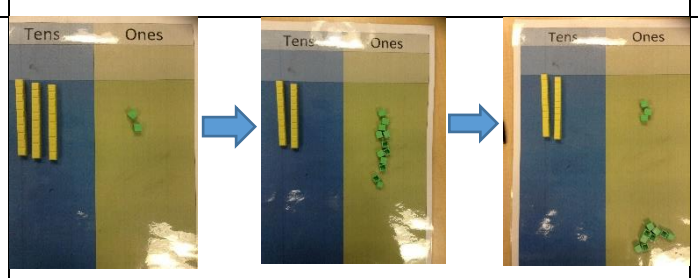
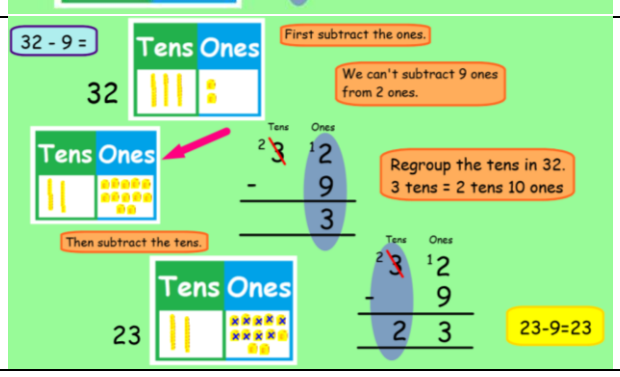
First Base teaching of addition and subtraction is based on Concrete-Pictorial-Abstract (CPA) modelling. The foundations for beginning to add and subtract are rooted in a secure understanding of number, counting and number bonds. We use a wide variety of manipulatives at the concrete stage to allow pupils 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			
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			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			24 + 3 = 24 cars and 3 trucks drive over the bridge. How many vehicles drove over the bridge?

Column with regrouping ones			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 = 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 = 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			
Making number bonds			
Taking away			9 – 6 = Nine spiders were on a web, 3 spiders fell off. How many spiders were left?
Counting back			9 – 6 = There are 9 flies. 6 are stuck in a web. How many are still flying?
Number bonds			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			12 – 7 = Hardeep makes 12 stars. He gives 7 stars to Ella. How many stars does Hardeep have left?
Simple column subtraction			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			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 2023

Reviewed by: Stacey Laws