

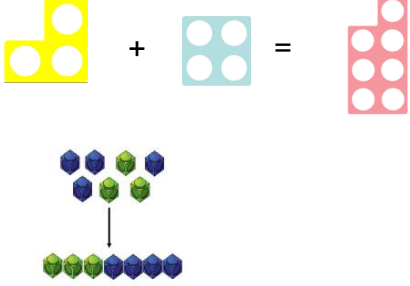
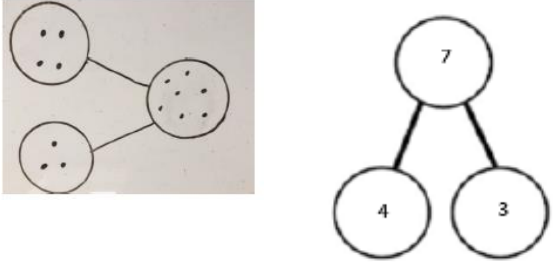
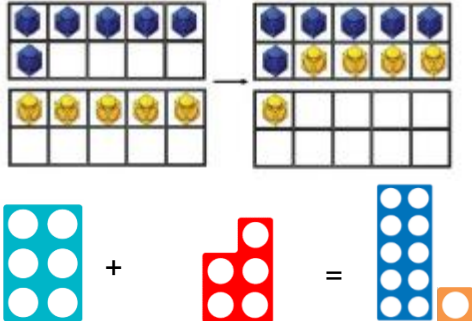
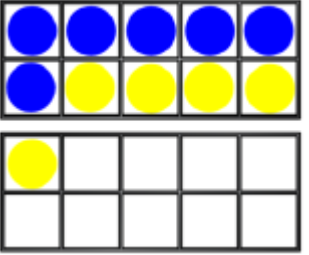

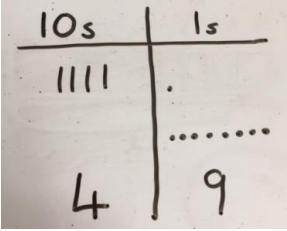
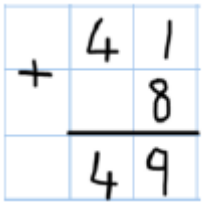
In EYFS we will use numicon and range of counters.

In Year 1 we will use tens frames, numicon, range of counters and base 10

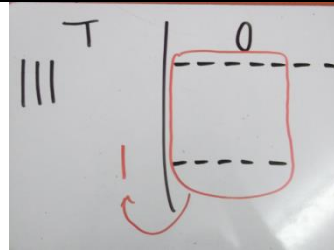
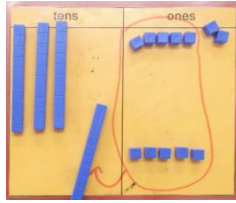
In Year 2 we will use base 10 and place value counters

# Progression in Calculations

## Addition

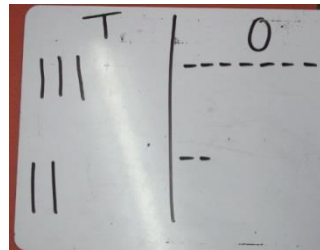
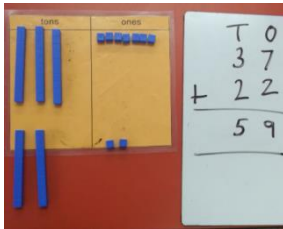
Objective and Strategies	Concrete	Pictorial	Abstract
EYFS & Y1: Pairs of single digit numbers	 <p>A yellow block with 4 circles and a blue block with 3 circles are added to form a red block with 7 circles. Below, blue and green counters are arranged to show 4 + 3 = 7.</p>	 <p>Two circles with 4 and 3 dots are combined into a larger circle with 7 dots. To the right, a number bond shows 7 at the top, with 4 and 3 at the bottom.</p>	$4 + 3 = 7$ $3 + 4 = 7$
Y1: Pairs of single digits numbers crossing boundary	 <p>Two ten frames show 6 blue and 5 yellow counters. Below, a blue block with 6 circles and a red block with 5 circles are added to form a blue block with 11 circles.</p>	 <p>Two ten frames: the top one has 6 blue and 5 yellow circles; the bottom one has 1 yellow circle.</p>	$6 + \square = 11$ $6 + 5 = 5 + \square$ $6 + 5 = \square + 4$
Y1 & 2: Two digit add 1 digit Year 1 within 20.	 <p>Fourteen green blocks representing 40 and nine green blocks representing 9 are shown.</p>	 <p>A place value chart with columns for 10s and 1s. The 10s column has 4 vertical lines and the 1s column has 9 vertical lines.</p>	 <p>A grid showing the addition of 40 and 9 to get 49.</p>

Y2: Two digit add 1 digit cross boundary



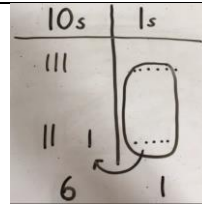
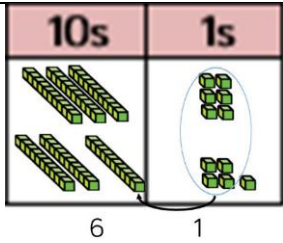
$$\begin{array}{r} \text{T O} \\ 37 \\ + 5 \\ \hline 42 \end{array}$$

Y2: Two digit add two digit no regrouping



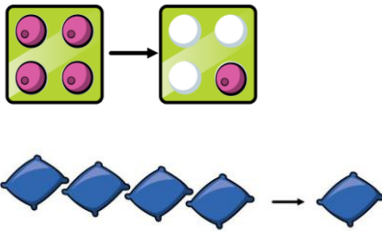
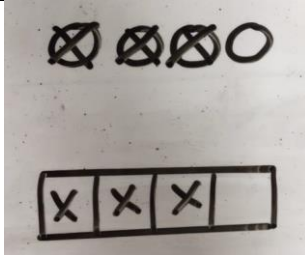
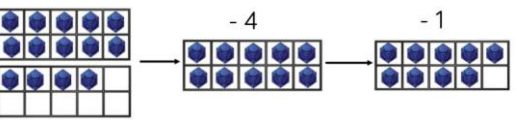
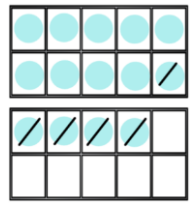
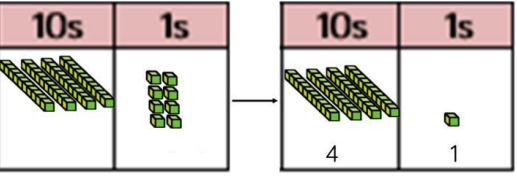
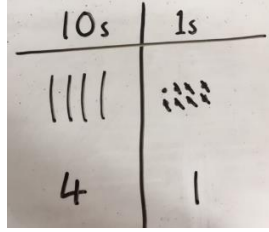
$$\begin{array}{r} \text{T O} \\ 37 \\ + 22 \\ \hline 59 \end{array}$$

Y2: Two digit add two digit with regrouping

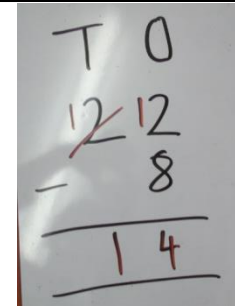
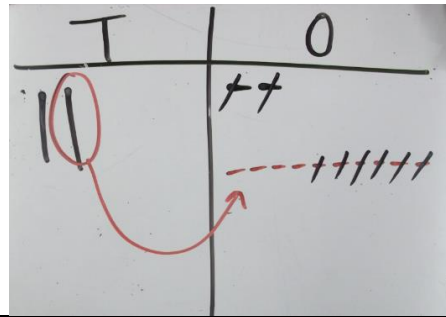
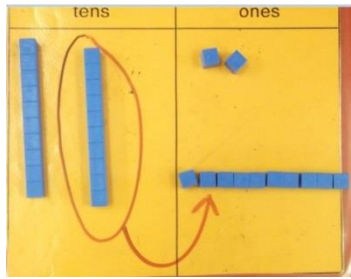


$$\begin{array}{r} 36 \\ +25 \\ \hline 61 \\ \hline 1 \end{array}$$

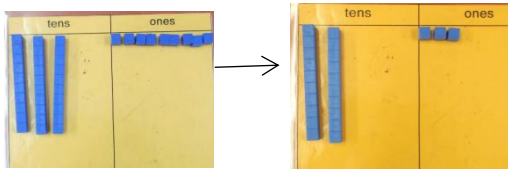
# Subtraction

Objective and Strategies	Concrete	Pictorial	Abstract				
<p>EYFS &amp; Y1: Taking away ones</p>	 <p>The concrete representation shows two stages. In the first stage, a ten frame is filled with 4 pink circles. An arrow points to the second stage where 3 pink circles have been removed, leaving 1 pink circle. Below this, four blue diamonds are shown in a row, with an arrow pointing to a single blue diamond, representing the removal of 3 from 4.</p>	 <p>The pictorial representation shows a row of four circles, with the first three crossed out and the fourth remaining as an open circle. Below this is a ten frame with three boxes containing an 'X' and one empty box, representing the subtraction of 3 from 4.</p>	$4 - 3 = 1$				
<p>Y1: Take away crossing boundary</p>	 <p>The concrete representation shows a ten frame with 14 blue dots (two full rows of 10). An arrow labeled '-4' points to a ten frame with 10 blue dots. A second arrow labeled '-1' points to a ten frame with 9 blue dots.</p>	 <p>The pictorial representation shows two ten frames. The top frame has 14 light blue circles (two full rows). The bottom frame has 9 light blue circles (one full row and one row with 4 circles). The 5 circles that were removed are shown as diagonal slashes in the bottom frame.</p>	$14 - 5 = 9$				
<p>Y1: 2 digit subtract 1 digit</p>	 <p>The concrete representation shows two ten frames. The first frame has 4 tens rods and 8 ones units. An arrow points to the second frame where 3 tens rods and 1 one unit remain, representing the result of 48 - 7.</p>	 <p>The pictorial representation is a place value chart with columns for '10s' and '1s'. In the '10s' column, there are four vertical lines and the number '4' below. In the '1s' column, there are seven small dots and the number '1' below.</p>	<table style="border-collapse: collapse; margin-left: auto; margin-right: auto;"> <tr><td style="text-align: right;">T O</td></tr> <tr><td style="text-align: right;">4 8</td></tr> <tr><td style="text-align: right;">- 7</td></tr> <tr><td style="border-top: 1px solid black; text-align: right;">4 1</td></tr> </table>	T O	4 8	- 7	4 1
T O							
4 8							
- 7							
4 1							

Y2: Two digit subtract  
1 digit cross  
boundary

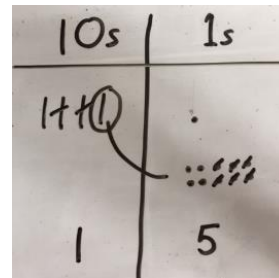
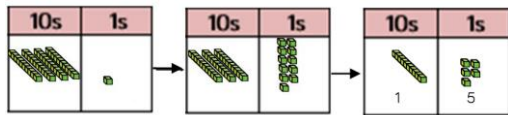


Y2: Two digit subtract  
two digit no  
regrouping



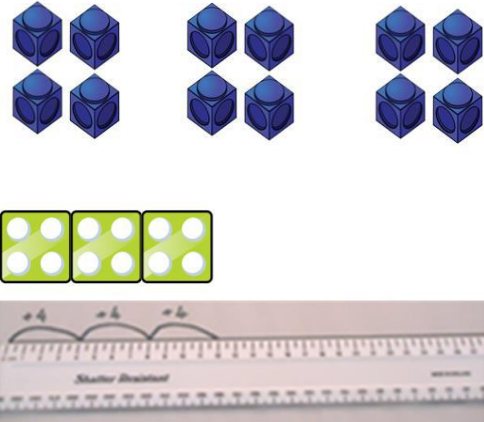
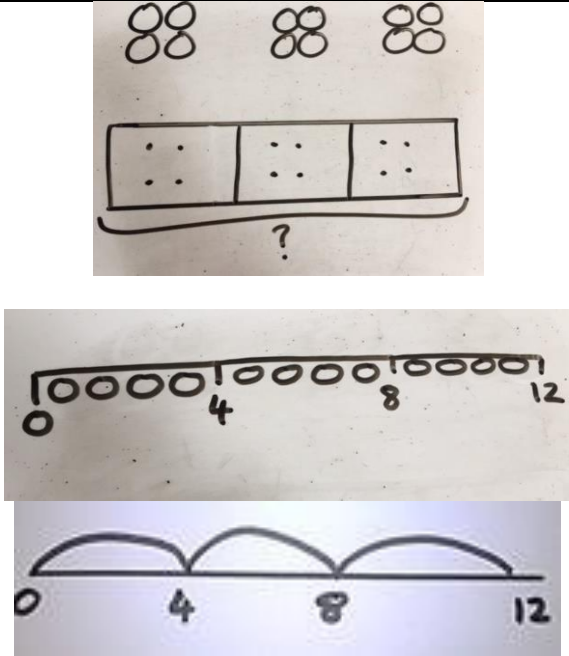

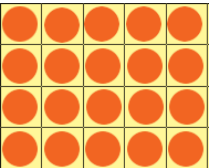
$$\begin{array}{r} \text{T O} \\ 39 \\ - 16 \\ \hline 23 \end{array}$$

Y2: Two digit subtract  
two digit with  
regrouping

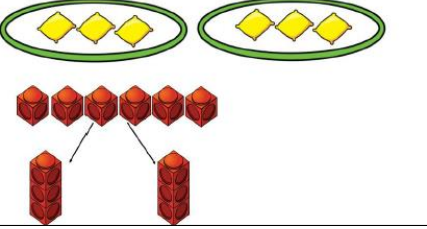
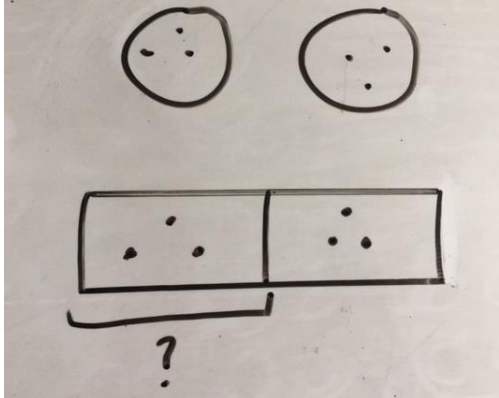
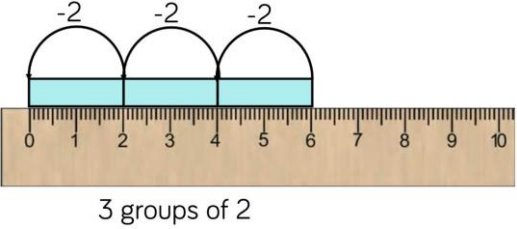
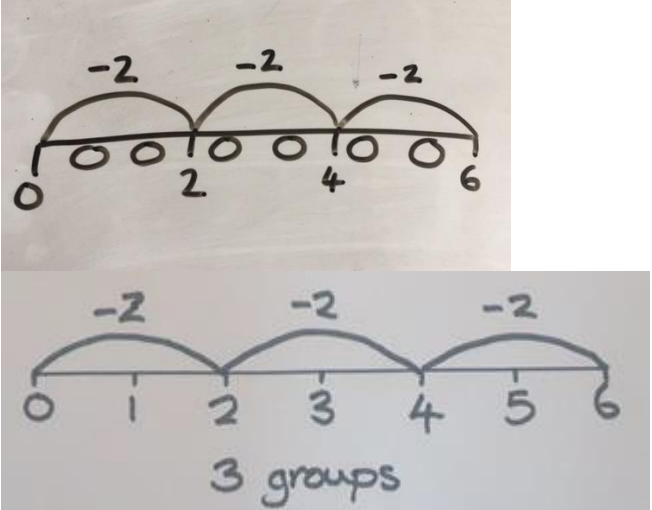


	<del>3</del>	1
-	4	6
	1	5

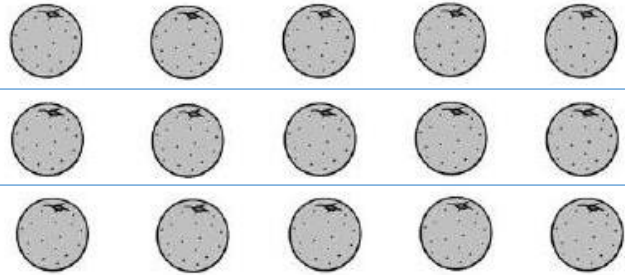
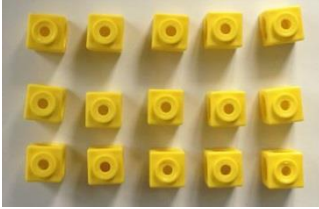
# Multiplication

Objective and Strategies	Concrete	Pictorial	Abstract
Repeated addition	 <p>Concrete representation of 3x4 using blue dice (3 groups of 4) and green dice (3 groups of 4).</p>	 <p>Pictorial representation of 3x4 using circles, a dot array, and number lines.</p>	$3 \times 4 = 12$ $4 + 4 + 4 = 12$ $3 \times 4 = 4 + 4 + 4$
Y1/2 Arrays- showing commutative multiplication	 <p>Concrete representation of 5x4 using red circular objects.</p>	 <p>Pictorial representation of 5x4 using a grid of orange circles.</p>	$5 + 5 + 5 + 5 = 20$ $4 + 4 + 4 + 4 + 4 = 20$ $5 \times 4 = 20$ $4 \times 5 = 20$

# Division

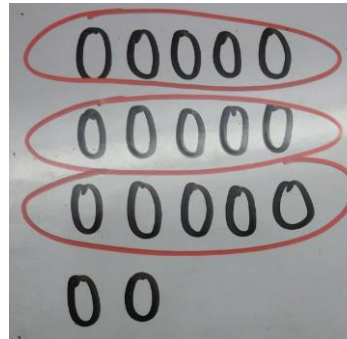
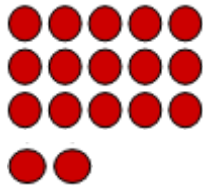
Objective and Strategies	Concrete	Pictorial	Abstract
Sharing objects into groups	 <p>The concrete representation shows 6 yellow diamonds grouped into two sets of three, each set circled in green. Below this, 6 red cubes are arranged in a row, with two arrows pointing from the first two cubes to a vertical stack of two cubes, and another two arrows pointing from the last two cubes to another vertical stack of two cubes, illustrating the process of grouping into two groups of three.</p>	 <p>The pictorial representation shows two circles, each containing three dots. Below them is a bar model divided into two equal sections, each containing three dots. A bracket under the first section is labeled with a question mark, indicating the unknown number of groups.</p>	$6 \div 2 = 3$
Y1 Division as grouping using repeated subtraction	 <p>The concrete representation shows a ruler from 0 to 10. A light blue bar is drawn from 0 to 6. Three arcs, each labeled '-2', are drawn above the bar, starting at 0, 2, and 4, and ending at 2, 4, and 6 respectively. Below the ruler, the text '3 groups of 2' is written.</p>	 <p>The pictorial representation shows a number line from 0 to 6. Three arcs, each labeled '-2', are drawn above the line, starting at 0, 2, and 4, and ending at 2, 4, and 6 respectively. Below the number line, the text '3 groups' is written.</p>	$6 \div 2 = 3$

Y1/2 Division within arrays



$$15 \div 3 = 5 \quad 5 \times 3 = 15$$
$$15 \div 5 = 3 \quad 3 \times 5 = 15$$

Y2: Division with a remainder (GDS)  
By 2, 5 and 10 only



$$17 \div 5 = 3 \text{ r } 2$$