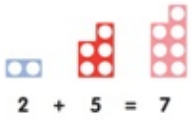
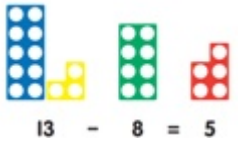
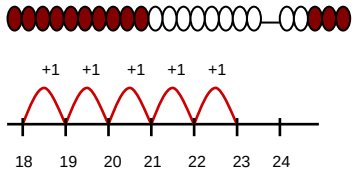
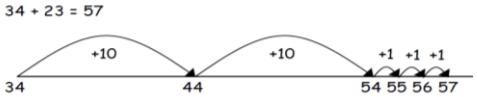
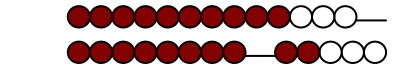
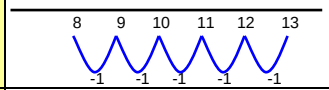
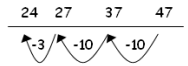
Pucklechurch Calculation Strategy

<table>
<tr><td>Progression In Addition – always check using the inverse</td><td>Manipulatives</td><td>Progression in Subtraction – always check using the inverse</td></tr>
<tr><td>Symbols/Pictures

8 people are on the bus. 5 more get on at the next stop. How many people are on the bus now?
 
[Might be recorded as: 8 + 5 = 13]
 
2 + 5 = 7</td><td>Counters
Number lines
Numicon
  </td><td>Symbols and Pictures

Mum baked 9 biscuits. I ate 5. How many were left?
 
Might be recorded as: 9 – 5 = 4]
 
13 – 8 = 5</td></tr>
<tr><td>Number track / Number line and Beads

18 + 5 = 23
 
  </td><td>Counters
Number lines
Numicon
Bead String
Dienes
 
  </td><td>Number track / Number line and Beads

13 – 5 =8
 
 
47 - 23 = 24
  </td></tr>
<tr><td>Column Addition - Expand to include decimals

Model partitioning for expanded written method first.

12 + 25 = 7 + 30 = 37

18 + 25 = 13 + 30 = 43

Use the language of carrying

12 +25 ----- 37

18 +25 ----- 43 (1)

43 +91 ----- 134 (1)

74 +67 ----- 141 (1 1)</td><td>Dienes
Place Value Counters
Place Value Cards
 
 
  </td><td>Column Subtraction- Expand to include decimals

38 -12 = 6 +20 = 26

Use the language of exchanging

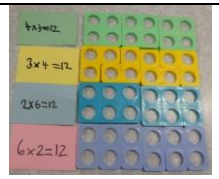
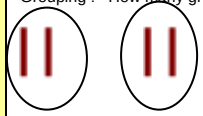
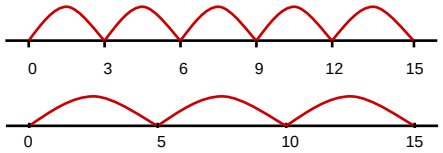
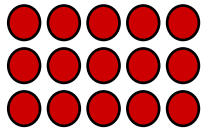
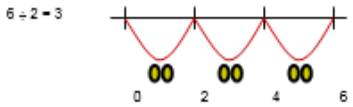
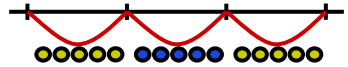
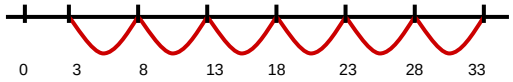
38 -12 ----- 26

513 -15 ------ 498

5213 - 59 -------- 4654

8010 - 43 ------- 7567</td></tr>
</table>

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
May buys 8 red apples and 6 green apples from the fruit shop. How many apples does she buy altogether? Rebeena has 8 ice lollies. She gives 5to her friends. How many does Rebeena have left?	Victoria has drawn 10 pictures in her sketch pad. Javeria has also drawn 10 pictures. How many pictures have they drawn altogether? Alfie buys a lolly for 12p and a packet of crisps for 20p. How much money has he spent?	Alicia collected 97 badges. Her mum bought her 45 more badges. How many badges does she have now? Alicia collected 97 badges. She gave 53 away to her friend. How many has she got left ?	At a netball match, there are 126 people supporting the blue team and 178 supporting the yellow team. How many people are watching the game altogether? Tom , sells 1535 pies on Monday and 1219 on Tuesday. How many more pies did he sell on Monday compared to Tuesday ?	There are 3257 people at the rugby match. This is 1138 people more than last week. How many people were at the match last week? There were 5834 guests staying at the holiday resort during one week. The next week, there were 3425 guests staying. How many more people stayed at the resort during the first week?	There are 1250 letters in Post Box A and 2350 letters in Post Box B. a) How many letters are there altogether? b) The postman delivers 2640 letters. How many letters still need to be delivered?

Progression In Multiplication – always check using the inverse	Manipulatives	Progression in Division – always check using the inverse
Symbols/pictures/objects 3 lots of 2 sticks. = 3 x 2  	Counters Number lines Numicon 	Symbols/pictures/objects 4 sticks shared between 2 children.   Grouping : How many groups of 2 in 4? 
Repeated addition Number lines 5 x 3 or 3 x 5  0 3 6 9 12 15 0 5 10 15 Arrays 5 x 3 or 3 x 5 	Counters Number lines Numicon Bead String Dienes  	Repeated subtraction Number lines  6 ÷ 2 = 3 0 2 4 6 15 ÷ 5  33 ÷ 5 = 6 r3  0 3 8 13 18 23 28 33
Short method – ensure pupils can partition into tens and ones before introducing grid Expand to include decimals Grid 43 x 6 x | 6 3 | 18 40 | 240 | 258 Expanded 43 6 x 18 240 258 Compact 43 6 x 258 1	Dienes, numicon Place Value Counters   	**Short** method – chunking then move to compact Expand to include decimals Expanded 1 2 3 | 3 6 3 0 6 6 0 Compact 1 2 3 | 3 6 1 5 3 6 | 9 3 1 8
Long method Expand to include decimals Expanded 32 24 x 8 120 40 600 768 Compact 32 24 x 128 640 768	Dienes Place Value Counters  	**Long Method** Expand to include decimals Use the language of exchanging Expanded 2 3 r3 or 23.12 25 | 5 7 8 5 0 0 78 75 3 Compact 2 3 r3 or 23.12 25 | 5 7 8 5 7 5 3

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Liam counts on in fives from the number 22. What are the next 2 numbers he counts? Poppy eats 6 grapes. Alice eats half as many. How many grapes does Alice eat?	2 teams are playing basketball. There are 5 players in each team. How many people are playing basketball altogether? 15 sweets, shared between 5 . How many each ?	One bag holds 4 tomatoes. How many tomatoes are in 2 bags? I have 48 apples, how many can each child have if there are 8 children in the group ?	Charlotte drew a line 3 cmlong. Then she made the line 3 times longer. How long would 6 of these longer lines be, drawn end to end? Dominic's grandma and grandad always give him £36 on his birthday. He shares this between 5 friends ? How much does he have left over ?	In Mr Pott's garden, there are 7 rows of tomato plants. Each row has 435 tomato plants. How many tomato plants are in the garden altogether? There are 386 apples that need to be put into boxes containing 5 apples per box. How many full boxes of apples can be made altogether? How many apples are left?	There are 98 junior children in Daisyhill School. In assembly, children sit in rows of 18. a) How many full rows can be made? b) How many children are left over? We need 143 rows of chairs. Each row needs 19 chairs. How many chairs are needed ?