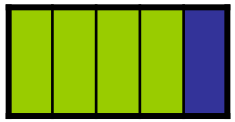
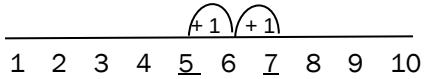
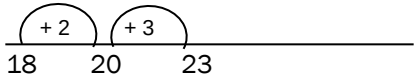
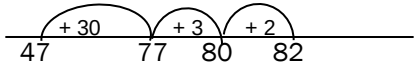
Wessex Primary School

Maths Calculation Policy : **Addition Strategies**

	FS2	Year 1	Year 2
Age related expectations	Addition as combining 2 groups. 1 more to 5 (point scale 3) 1 more to 10 (point scale 7)	Addition as counting on. U + U (bridging 10) TU + U (bridging 20)	TU + TU (bridging 10s/100s)
Recording strategies	**Practical methods using pictures and objects through play.** **Expose to / introduce + and = sign.** Jane was given 4 balloons. She was given 1 more. How many does she have altogether?  4 + 1 = 5  4 + 1 = 5	**Practical methods using pictures and objects (less able), bead strings, fingers and number line (counting on in 1's).**  5 + 2 = 7 Cover the number you are starting on (largest number first) and jump on. **Written Methods**  2 + 1 = 3	**Number lines (efficient jumps) Dienes blocks and hundred squares.** 18 + 5 = 23  47 + 35 = 82  **Partitioning** 47 + 35 40 + 30 = 70 7 + 5 = 12 70 + 12 = 82

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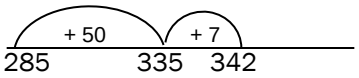
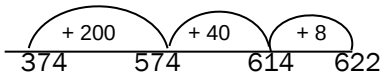
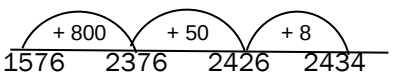
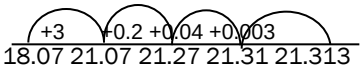
Number lines can be horizontal or vertical.

U = Units, T = Tens, H= Hundreds, r = remainder

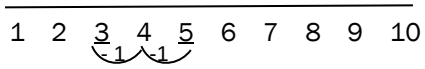
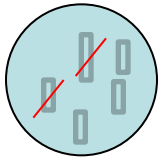
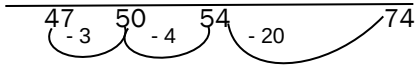
Wessex Primary School

Maths Calculation Policy : **Addition Strategies**

	Year 3	Year 4	Year 5	Year 6
Age related expectations	TU + TU (bridging 100) HTU + TU (not bridging 1000) HTU + HTU (not bridging 1000)	HTU + HTU (including bridging 1000) Decimals : money (£7.85 + £3.49)	ThHTU + HTU Decimals up to 2dp (23.7 + 48.56)	Consolidate / extend Y5 including decimals up to 3dp. Children encouraged to use the most efficient method for the question.
Recording strategies	**Number line (efficient jumps)** 285 + 57 = 342  **Partitioning** 248 + 132 = 200 + 100 = 300 40 + 30 = 70 8 + 2 = 10 300 + 70 + 10 = 380 **Expanded Column Method** (for more able mathematicians) 336 + 124 = 300 30 6 + 100 20 4 400 + 50 + 10 = 460	**Number line (efficient jumps)** 374 + 248 = 622  **Partitioning** 374 + 248 = 300 + 200 = 500 70 + 40 = 110 4 + 8 = 12 500 + 110 + 8 = 622 **Expanded Column Method** 374 + 248 = 300 70 4 + 200 40 8 500 + 110 + 12 = 622 **Expanded Vertical Method** 374 + 248 12 110 500 622	**Number line (efficient jumps)** 1576 + 858 = 2434  **Partitioning** 1576 + 1858 = 3434 1000 + 1000 = 2000 500 + 800 = 1300 70 + 60 = 130 6 + 8 = 14 2000 + 1300 + 130 + 14 = 3434 **Compact Vertical Method** 23.70 + 48.56 72.26 1 1	**Number line (efficient jumps)** 18.07km + 3.243 km = 21.313km  **Compact Vertical Method** 18.070 + 3.243 21.313 1 1

Wessex Primary School

Maths Calculation Policy : **Subtraction Strategies**

	FS2	Year 1	Year 2
Age related expectations	Subtraction as 'taking away' from a group. 1 less from 5 (point scale 3) 1 less than 10 (point scale 7)	Subtraction as 'taking away' and 'difference' (by counting on) U – U TU – U (bridging 10)	Subtraction as the inverse of addition TU – TU (bridging 10s)
Recording strategies	**Practical methods, use of songs and rhymes e.g. 10 in the bed, expose to / introduce symbol -.** Jane was given 6 balloons. 1 blew away in the wind. How many does she have now?  6 – 1 =5 For most able children do 2 less.	**Practical methods, using objects and physically taking away.** **Number lines (jumping back under the line, starting with the largest number, jumps of 1)** 5 – 2 = 3  **Use of number stories** e.g.. Gerald has 5 sweets and eats 2, how many has he got left? **Written Method** 5 - 2 = 3 	**Hundred squares, counting back in 10s and 1s. Dienes blocks.** **Number lines (jumping back under the line, starting with the largest number, jumps of 10s and 1s)** 74 – 27 = 47  **Partitioning** 74 – 27 74 – 20 = 54 54 – 4 = 50 50 - 3 = 47

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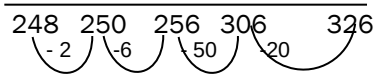
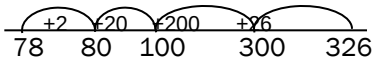
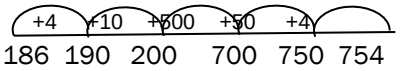
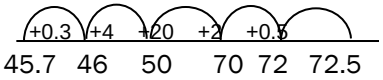
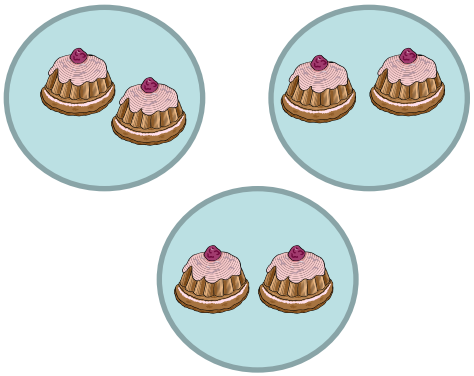
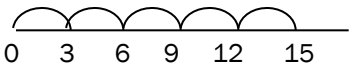
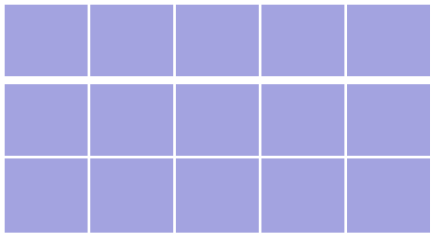
Wessex Primary School

Maths Calculation Policy : **Subtraction Strategies**

	Year 3	Year 4	Year 5	Year 6
Age related expectations	TU – TU HTU – TU HTU - HTU	HTU – TU HTU – HTU Decimals : money (£7.85 - £3.49)	ThHTU – HTU Decimals up to 2 dp.	Consolidate / extend, including decimals to 3 dp.
Recording strategies	**Number lines** **1) Taking away** 326 – 78 = 248  **2) Counting on** 326 – 78  **Decomposition** (for more able mathematicians) 274 – 48 = 200 70 2 - 40 8 200 60 12 - 40 8 200 20 4 = 224	**Number lines (counting on)** 754 – 186 = 568  **Decomposition** 723 – 458 = 700 20 3 -400 50 8 600 110 13 - 400 50 8 200 60 5 = 265	**Number lines (counting on)** 72. 5 – 45.7 = 26.8  **Decomposition (compact method)** 452 – 143 = 41 452 - 143 309	**Word problems involving changing units.** E.g. There was 2.5 litres in the jug. Stuart drank 385ml. How much was left? **Decomposition (compact method)** 72. 5 – 45.7 = 6 11 1 ~~7~~2. 5 - 45 . 7 26 .8

Wessex Primary School

Maths Calculation Policy : **Multiplication Strategies**

	FS2	Year 1	Year 2
Age related expectations	Count repeated groups of the same size.	Solve practical problems that involve combining groups of 2, 5 or 10.	Multiplication as repeated arrays.
Recording strategies	**Practical activities with objects** 3 plates, 2 cakes on each   = 6	**Practical activities with objects** There are 3 sweets in one bag. How many are there in 5 bags?  3 + 3 + 3 + 3 + 3 = 15 **Using cubes / beads on a strings** 2 x 4 =8 	**Repeated Addition** 5 x 3 = 15  0 3 6 9 12 15 0r 3 x 5 = 15  0 5 10 15 **Arrays** (using pegboard / patterns on square paper) 5 x 3 or 3 x 5  **Practical** There are 4 apples in each box. How many apples in 6 boxes?

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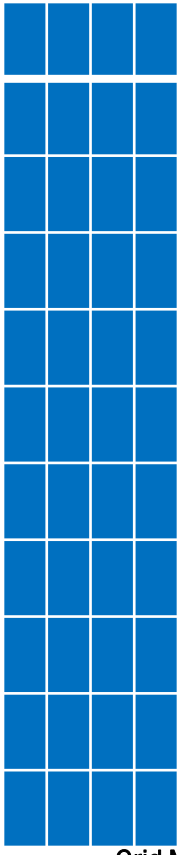
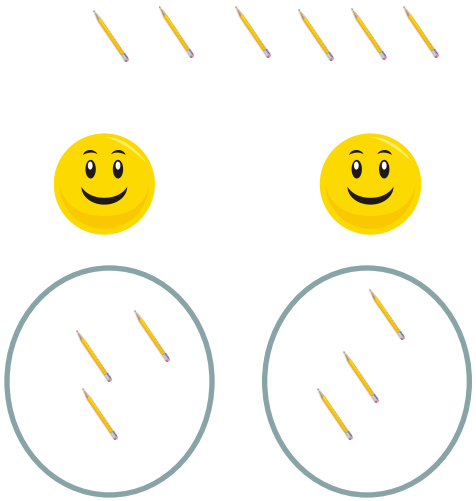
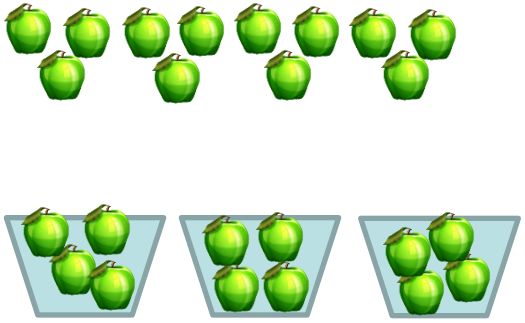
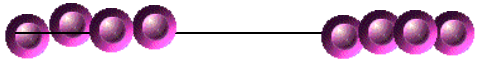
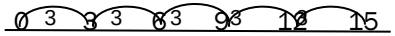
Wessex Primary School

Maths Calculation Policy : **Multiplication Strategies**

	Year 3	Year 4	Year 5	Year 6
Age related expectations	TU X U	TU X U Record, support and explain	Refine and use efficient methods HTU X U, TU X TU & U.t X U	Use efficient methods TU X TU, HTU X TU, & decimals
Recording strategies	 **Arrays** 11 x 4 **Grid Method** 13 x 4 = 52 **x** | **10** | **3** **4** | 40 | 12	**Grid Method** 43 x 6 = 258 **x** | **40** | **3** **6** | 240 | 18 **Expanded Vertical (with all recordings)** 43 x 6 40 + 3 6 x 18 (3 x 6) + 240 (40 x 6) 258 And then 43 X 6 18 (3 x 6) + 240 (40 x 6) 258	**Grid Method** 47 x 36 (estimate 50 X 40 = 2000) **x** | **40** | **7** **30** | 1200 | 210 **6** | 240 | 42 1410 + 282 1692 **Expanded Vertical** 237 X 4 (estimate 250 x 4 = 1000) 237 X 4 28 (7 x4) 120 (30 x 4) + 800 (200 x 4) 948	**Grid Method** 5.65 x 9 (estimate 6 x 9 = 54) **X** | **5** | **0.6** | **0.05** **9** | 45 | 5.4 | 0.45 45.0 5.4 + 0.45 49.85 **Compact Vertical Method** 4.7 X 8 (estimate 5 X 8 = 40) 4.7 X 8 37.6 5 7x 8 equals 56. Carry the 5 tens. 40 x 8 equals 320, add on the 5 tens, equals 370.

Wessex Primary School

Maths Calculation Policy : **Division Strategies**

	FS2	Year 1	Year 2
Age related expectations	(This is not part of the EYFS profile but is frequently explored through play opportunities). Share objects into equal groups and count how many in each group.	Solve practical problems that involve sharing into equal groups.	Division as sharing and grouping including remainders. TU ÷ U (where divisor is 2, 5 or 10)
Recording strategies	**Practical activities** Sharing objects during role play time, physically getting into groups 6 pencils shared between 2 people 	**Practical activities** How many apples in each bowl if I share 12 apples equally between 3 bowls?  **Number lines / bead strings** 8 ÷ 2 = 4  **Use the vocabulary of halves and quarters.**	**Number lines** 15 ÷ 3 = 5 (3 groups of 5) 

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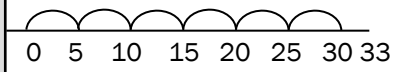
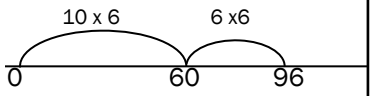
Wessex Primary School

Maths Calculation Policy : **Division Strategies**

	Year 3	Year 4	Year 5	Year 6
Age related expectations	TU ÷ U (where divisor is 2, 3, 4, 5 or 10) Round remainders up / down, depending on the context.	Record, support and explain. TU ÷ U	Refine and use efficient methods. HTU ÷ U	Use efficient methods. HTU ÷ U HTU ÷ TU Decimal ÷ U
Recording strategies	**Number lines (starting from zero)** 33 ÷ 5 = 6 r3  	**Number lines (starting from zero)** 96 ÷ 6 = 16  **Chunking** 96 ÷ 7 = 96 - 70 (7 x 10) 26 - 21 (7 x 3) 5 = 13 r 5	**Chunking** 196 ÷ 6 = 196 -120 (6 x 20) 76 - 60 (6 x 10) 16 - 12 (6 x 2) 4 = 32 r 4 **Short division (bus stop method)** 62 ÷ 4 = 15 r 2 4 ⟌ 62 - 40 (4 x 10) 22 -20 (4 x 5) 2 And then on to 15 r 2 4 ⟌ 62 2	**Chunking** 25.6 ÷ 8 = 25.6 - 24.0 (8 x 3) 1.6 - 1.6 (8 x 0.2) 0.0 = 3.2 **Short division (bus stop method)** 43.4 ÷ 7 = 6. 2 7 ⟌ 43.4 - 42.0 (7 x 6) 1.4 -1.4 (7 x 0.2) 0 Does 7 go into 4? No. Does 7 go into 43? Yes. 6 times with 1 left over. Does 7 go into 14? Yes, two.