



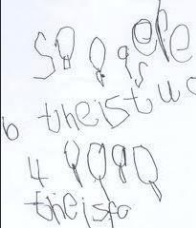





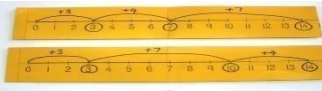
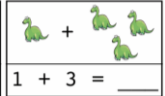
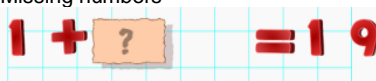


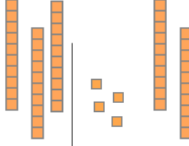


Year group	Addition Objective	Method	Practical methods	Pictorial/written methods	Vocabulary	Mental recall
EYFS	<p>Add one more to a group of objects 0-5 then 0-10.</p> <p>Addition as 'combining 2 groups' using single digit numbers in range 0-5 then 0-10.</p> <p>Addition as 'counting on' in range 0-5 then 0-10</p> <p>Real life problems in range 0-10</p>	<p>Practical / recorded using ICT (eg digital photos / pictures on IWB)</p>	<p>Frogs on logs, Toys, Books, Beads, Rhymes, Counters, Number tiles, objects (stationary and moving) number lines, stories, Role play, part/whole model, Numicon, ten frames.</p>  <p>Adding one more</p>  <p>Combining groups</p>  <p>Counting on</p>	<p>Drawings of problems</p>  <p>Begin to record using marks they can explain</p> 	<p>add, more than, equals, altogether, same as, plus, number bonds, number sentences,</p>	<p>What is one more than...? Number bonds in range 0-10</p>
Y1	<p>Consolidation of EYFS</p> <p>Read, write and interpret mathematical statements involving addition (+) and equals (=) signs</p> <p>Adding U+U (bridging 10)</p> <p>TU + U by counting on in range 0-20</p> <p>TU + U (bridging 20)</p> <p>Concept of addition in any order</p> <p>Concept of addition and subtraction as inverse operations</p> <p>Solve real life/missing number 1 step problems in range 0-20</p>	<p>Practical / recorded using ICT</p> <p>Informal written methods</p> <p>Horizontal recording</p>	<p>Objects, Number lines, 100 squares, Multilink, Lego, beads, tape measures, bead strings, fingers, whiteboards, role play,</p>   <p>Counting on</p>  <p>U+U</p> <p>TU+U</p> 	<p>Jumps along a number line in 1s</p>  <p>Jumps on a number line in bigger jumps</p>  <p>Horizontal layout</p>  <p>Missing numbers</p> 	<p>As previous.</p> <p>Total, equal to, most, least, put together, more than</p>	<p>Consolidation of EYFS</p> <p>Number bonds in range 0-20</p>

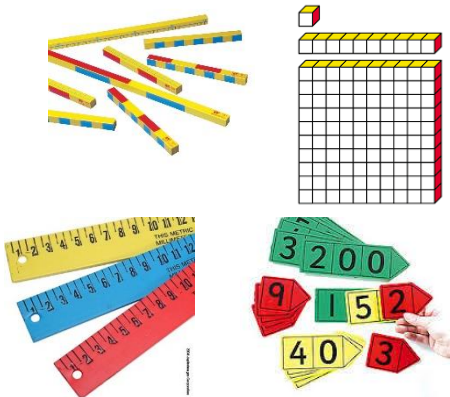

Salford C of E Primary School – Progression in Addition, Subtraction, Multiplication and Division

Y2	<p>Consolidation of Y1</p> <p>TU+T</p> <p>TU + TU (bridging 10s / 100)</p> <p>U + U + U</p> <p>Add 9 and 11 by adding 10, then one less or one more</p> <p>Recognise addition and use in problem solving including numbers, quantities and measures</p>	<p>Practical</p> <p>Informal written methods</p> <p>Horizontal recording</p>	<p>bead strings, number lines, 100 squares, Dienes, place value cards</p>    <p style="text-align: center;"><math>34 + 20 = 54</math></p>	<p>1 digit + 1 digit <math>6 + 3 = 9</math></p> <p>2 digit + 1 digit <math>15 + 4 = 19</math> (chips + peas)</p> <p>2 digit + 10 <math>27 + 10 = 37</math> (count 10s, then)</p> <p>2 digit + 2 digit <math>23 + 45 = 68</math> OR (count chips, then peas)</p> <p>Partition and recombine</p> <p><math>33 + 42</math></p> <p><math>40 + 30 = 70</math></p> <p><math>3 + 2 = 5</math></p> <p><math>70 + 5 = 75</math></p> <p>Beginning to record in columns</p>	<p>As previous.</p> <p>inverse, sum, partition</p>	<p>Increase fluency of number bonds to 20</p> <p>Derive and use related facts up to 100</p>
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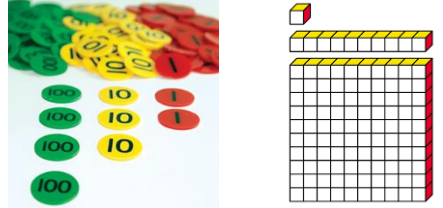

Salford C of E Primary School – Progression in Addition, Subtraction, Multiplication and Division

				<table border="1"><thead><tr><th>Tens</th><th>Ones</th></tr></thead><tbody><tr><td>2</td><td>5</td></tr><tr><td>4</td><td>7</td></tr><tr><td></td><td></td></tr></tbody></table>	Tens	Ones	2	5	4	7				
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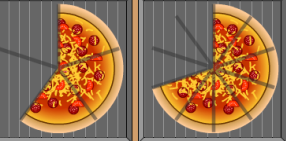
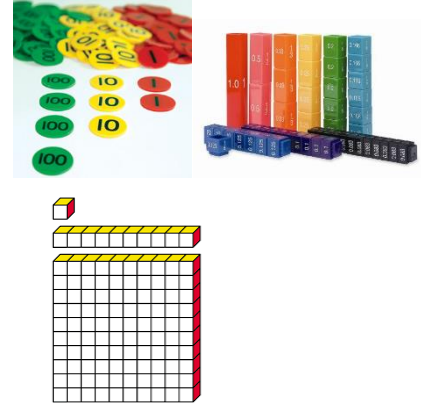
Salford C of E Primary School – Progression in Addition, Subtraction, Multiplication and Division

<p>Y3</p>	<p>Consolidation of Y2</p> <p>Add up to 3 digit numbers using formal written methods (column)</p> <p>Add up to 3-digit numbers including bridging 100 (carrying 10s)</p> <p>Add fractions with the same denominator within one whole</p> <p>Estimate answers using approximation</p> <p>Using inverse to check</p> <p>Application into problem solving TU + TU including bridging 100, HTU + TU not bridging 1000, HTU + HTU not bridging 1000</p>	<p>Practical</p> <p>Informal written methods</p> <p>Horizontal recording</p> <p>Formal written method</p>	<p>Counting sticks, dienes, number lines, hundred square, tape measures, place value cards.</p> 	<p>Partitioning</p> <p>Column addition (with carrying)</p> $\begin{array}{r} 458 \\ + 479 \\ \hline 937 \\ 11 \end{array}$ <p>Column addition (no carrying)</p> $\begin{array}{r} 243 \\ + 126 \\ \hline 369 \end{array}$ <p>Adding fractions</p> $\frac{3}{5} + \frac{1}{5} = \frac{4}{5}$ 	<p>As previous.</p> <p>column addition</p>	<p>HTU + <b>O</b></p> <p>HTU + T</p> <p>HTU + H</p> <p>TU + near multiple of 10</p> <p>Multiples of 50 and 100 that total 1000</p>
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Salford C of E Primary School – Progression in Addition, Subtraction, Multiplication and Division





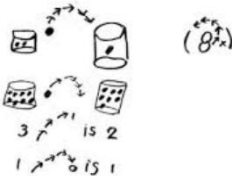
<p>Y4</p>	<p>Consolidation of Y3</p> <p>Add 4 digit numbers using formal written methods including bridging 1000</p> <p>Add fractions with the same denominator</p> <p>Add decimals in the context of money</p> <p>Estimate using rounding and use inverse to check</p> <p>Solve 2 step problems including money and fractions</p>	<p>Practical</p> <p>Informal written methods</p> <p>Horizontal recording</p> <p>Formal written method</p>	<p>Dienes, tape measures, place value counters, coins, fraction cards/pictures</p>  	<p>Partitioning</p> $1234 + 3472$ $1000 + 3000 = 4000$ $200 + 400 = 600$ $30 + 70 = 100$ $4 + 2 = 6$ $4000 + 600 + 100 + 6 = 4706$ <p>Column addition (with carrying)</p> <table style="border-collapse: collapse;"> <tr> <td style="padding-right: 20px;">2358</td> <td>£3.48</td> </tr> <tr> <td>+1874</td> <td>+ £2.41</td> </tr> <tr> <td style="border-top: 1px solid black;">4232</td> <td style="border-top: 1px solid black;">£5.89</td> </tr> <tr> <td style="border-top: 1px solid black; border-bottom: 1px solid black;">111</td> <td></td> </tr> </table> <p>Adding fractions</p> $3/5 + 1/5 = 4/5$ 	2358	£3.48	+1874	+ £2.41	4232	£5.89	111		<p>As previous.</p> <p>Increase, decimal point, denominator, numerator</p>	<p>As previous with increasing fluency</p>
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**Salford C of E Primary School – Progression in Addition, Subtraction, Multiplication and Division**

<p align="center"><b>Y5</b></p>	<p>Consolidation of Y4</p> <p>Add numbers of more than 4 digits using column addition</p> <p>Addition of numbers with up to 3 decimal places</p> <p>Add fractions with the same denominator, and denominators that are multiples of the same number where answer exceeds 1</p> <p>Solve multi-step problems deciding on appropriate operation</p>	<p>Practical</p> <p>Informal written methods</p> <p>Horizontal recording</p> <p>Formal written method</p>	<p>Dienes, place value counters, coins, fraction cards/pictures</p> 	<p>Column addition (with carrying)</p> $\begin{array}{r} 5.761 \\ +3.725 \\ \hline 9.486 \\ \hline 1 \end{array}$ <p>Adding fractions</p> $\frac{3}{5} + \frac{7}{10} = \frac{13}{10} = 1 \frac{3}{10}$ 	<p>As previous.</p> <p>tenths, hundredths, thousandths, partition, near multiples, denominator</p>	<p>Add mentally with increasingly large numbers</p> <p>Bonds up to 1 (one dp)</p> <p>U + U.t</p>
<p align="center"><b>Y6</b></p>	<p>Consolidation of Y5</p> <p>Application of all prior skills learnt to increase fluency</p> <p>Solve multi-step problems deciding on appropriate operation</p> <p>Explore the order of operations using brackets</p> <p>Add fractions with different denominators/ mixed numbers</p>	<p>Practical</p> <p>Informal written methods</p> <p>Formal written method</p>	<p>Dienes, place value counters, fraction cards/cubes</p> 	<p><math>\frac{3}{4} + \frac{2}{3}</math></p> <p>↓ ↓</p> $\frac{9}{12} + \frac{8}{12} = \frac{17}{12} = 1 \frac{5}{12}$	<p>As previous.</p> <p>Common denominator</p>	<p>As previous with increasing fluency</p> <p>Add mentally with increasingly large numbers and mixed operations.</p>




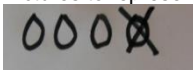

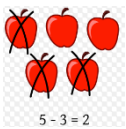
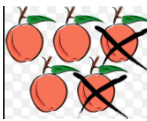
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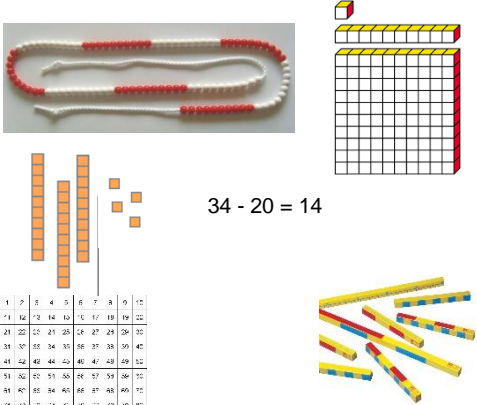
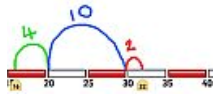
Year group	Objective	Method	Practical methods	Pictorial/written methods	Vocabulary	Mental recall
EYFS	<p>Compare sets of objects</p> <p>Remove objects from a set</p> <p>Say what is one less than a given number within 5 then 10</p> <p>Use quantities and objects to subtract using single digit numbers</p>	<p>Practical / recorded using ICT (eg digital photos / pictures on IWB)</p>	<p>Frogs on logs, Toys, Books, Beads, Rhymes, Counters, Number tiles, objects (stationary and moving) number lines, stories, Role play part/whole model, Numicon, ten frames.</p>  <p>Taking away one</p>  <p>Counting back numbers</p> <p>Comparing groups</p>  <p>Subtracting single digits</p>	<p>Drawings of problems</p>  <p>Begin to record using marks they can explain</p> <p>to t i s p (2 + 1 + 1 + 1)</p> 	<p>Take away, left, left over, gone, one less, fewer, difference between, count back(wards), find the difference, equals</p>	<p>What is one less than... (numbers up to 10)</p>



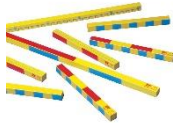
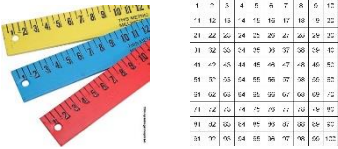

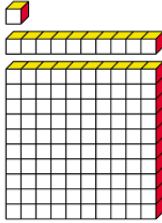
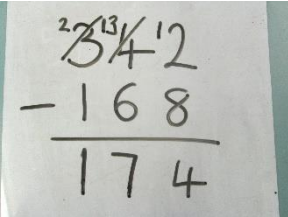
**Salford C of E Primary School – Progression in Addition, Subtraction, Multiplication and Division**

<p><b>Y1</b></p>	<p>Consolidation of EYFS</p> <p>Use subtraction (-) and equals (=) signs</p> <p>Represent and use subtraction facts within 20</p> <p>Subtract one-digit and two-digit numbers to 20, including 0</p> <p>Solve one-step problems that involve subtraction and missing number problems</p> <p>Concept of addition and subtraction as inverse operations</p>	<p>Practical / recorded using ICT</p> <p>Informal written methods</p> <p>Horizontal recording</p>	<p>Counting sticks, 100 Squares, Dienes, coins, cubes, bead strings, dominoes, dice, peg boards</p>  <p align="center">Counting back</p>  <p align="center">Finding the difference</p>  <table border="1" data-bbox="840 606 996 758"> <tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td></tr> <tr><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td><td>16</td><td>17</td><td>18</td><td>19</td><td>20</td></tr> <tr><td>21</td><td>22</td><td>23</td><td>24</td><td>25</td><td>26</td><td>27</td><td>28</td><td>29</td><td>30</td></tr> <tr><td>31</td><td>32</td><td>33</td><td>34</td><td>35</td><td>36</td><td>37</td><td>38</td><td>39</td><td>40</td></tr> <tr><td>41</td><td>42</td><td>43</td><td>44</td><td>45</td><td>46</td><td>47</td><td>48</td><td>49</td><td>50</td></tr> <tr><td>51</td><td>52</td><td>53</td><td>54</td><td>55</td><td>56</td><td>57</td><td>58</td><td>59</td><td>60</td></tr> <tr><td>61</td><td>62</td><td>63</td><td>64</td><td>65</td><td>66</td><td>67</td><td>68</td><td>69</td><td>70</td></tr> <tr><td>71</td><td>72</td><td>73</td><td>74</td><td>75</td><td>76</td><td>77</td><td>78</td><td>79</td><td>80</td></tr> <tr><td>81</td><td>82</td><td>83</td><td>84</td><td>85</td><td>86</td><td>87</td><td>88</td><td>89</td><td>90</td></tr> <tr><td>91</td><td>92</td><td>93</td><td>94</td><td>95</td><td>96</td><td>97</td><td>98</td><td>99</td><td>100</td></tr> </table> <p align="center">TU - U</p>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	<p>Pictures to represent working out</p>  <p>Jumps along a number line in 1s</p>  <p>Horizontal layout</p>  <p align="center"><math>5 - 3 = 2</math></p> <p>Missing numbers</p>  <p align="center"><math>5 - ? = 3</math></p>	<p>As previous.</p> <p>Subtract, minus, leave, how much/many less,</p>	<p>Consolidation of EYFS</p> <p>Subtraction facts linked to number bonds to 20, e.g. <math>10 - 7 = 3</math></p>
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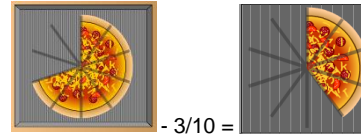
<p><b>Y2</b></p>	<p>Consolidation of Y1</p> <p>Solve problems with subtraction, including those involving numbers, quantities and measures</p> <p>TU – U</p> <p>TU – T</p> <p>TU – TU</p> <p>Know that subtraction cannot be done in any order</p> <p>Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems</p>	<p>Practical</p> <p>Informal written methods</p> <p>Horizontal recording</p>	<p>Counting sticks, bead strings, number lines, 100 squares, Dienes,</p>  <p><math>34 - 20 = 14</math></p> <table border="1" data-bbox="656 558 801 710"> <tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td></tr> <tr><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td><td>16</td><td>17</td><td>18</td><td>19</td><td>20</td></tr> <tr><td>21</td><td>22</td><td>23</td><td>24</td><td>25</td><td>26</td><td>27</td><td>28</td><td>29</td><td>30</td></tr> <tr><td>31</td><td>32</td><td>33</td><td>34</td><td>35</td><td>36</td><td>37</td><td>38</td><td>39</td><td>40</td></tr> <tr><td>41</td><td>42</td><td>43</td><td>44</td><td>45</td><td>46</td><td>47</td><td>48</td><td>49</td><td>50</td></tr> <tr><td>51</td><td>52</td><td>53</td><td>54</td><td>55</td><td>56</td><td>57</td><td>58</td><td>59</td><td>60</td></tr> <tr><td>61</td><td>62</td><td>63</td><td>64</td><td>65</td><td>66</td><td>67</td><td>68</td><td>69</td><td>70</td></tr> <tr><td>71</td><td>72</td><td>73</td><td>74</td><td>75</td><td>76</td><td>77</td><td>78</td><td>79</td><td>80</td></tr> <tr><td>81</td><td>82</td><td>83</td><td>84</td><td>85</td><td>86</td><td>87</td><td>88</td><td>89</td><td>90</td></tr> <tr><td>91</td><td>92</td><td>93</td><td>94</td><td>95</td><td>96</td><td>97</td><td>98</td><td>99</td><td>100</td></tr> </table>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	<p>Number line progressing to efficient jumps</p> <p><math>32 - 16 = 16</math></p>  <p>1 digit - 1 digit <math>9 - 3 = 6</math></p> <p>2 digit - 1 digit <math>17 - 5 = 12</math> (add up jumps)</p> <p>2 digit - 10 <math>57 - 10 = 47</math> (find the difference)</p> <p>2 digit - 2 digit <math>17 - 11 = 6</math></p> <p><math>54 - 22 = 32</math> (count up jumps)</p>	<p>As previous.</p> <p>inverse, partition</p>	<p>Increase fluency of subtraction facts to 10 then 20</p> <p>Derive and use related facts up to 100</p>
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Salford C of E Primary School – Progression in Addition, Subtraction, Multiplication and Division

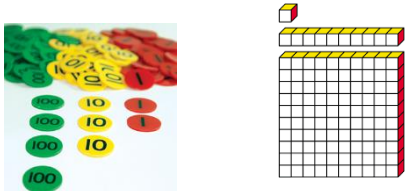

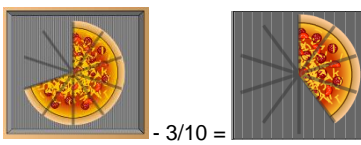
<p><u>Y3</u></p>	<p>Consolidation of Y2</p> <p>Subtract numbers with up to 3 digits, using formal written method (column) without decomposition</p> <p>Subtract numbers with up to 3 digits, using formal written method (column) with decomposition using term EXCHANGE</p> <p>Estimate the answer to a calculation and use inverse operations to check answers</p> <p>Subtract fractions with the same denominator within one whole</p> <p>Solve problems, including missing number problems, using number facts, place value, and more complex subtraction</p>	<p>Practical</p> <p>Informal written methods</p> <p>Horizontal recording</p> <p>Formal written method</p>	<p>Counting sticks, dienes, number lines, hundred square, tape measures, fraction pictures</p>    	<p>Partitioning</p> <p>573 - 261</p> <p>500 - 200 = 300</p> <p>70 - 60 = 10</p> <p>3 - 1 = 2</p> <p>300+10+2=312</p> <p>Column subtraction (no decomposition)</p> <p>243</p> <p><u>122</u></p> <p><u>121</u></p> <p>Column subtraction (with decomposition)</p>  <p>Subtract fractions</p>	<p>As previous.</p> <p>column subtraction, exchange, common denominators, decomposition</p>	<p>HTO - O</p> <p>HTU - T</p> <p>HTU - H</p> <p>TU - near multiple of 10</p>
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Salford C of E Primary School – Progression in Addition, Subtraction, Multiplication and Division

$$7/10 - 3/10 = 4/10$$



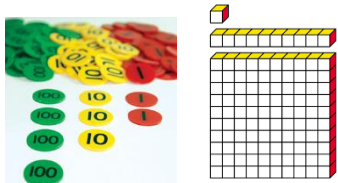

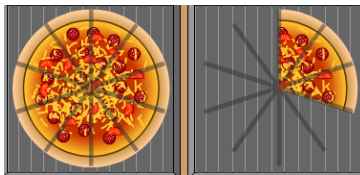
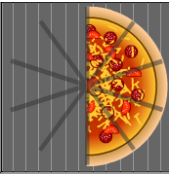
Salford C of E Primary School – Progression in Addition, Subtraction, Multiplication and Division

<p><u>Y4</u></p>	<p>Consolidation of Y3</p> <p>Subtract numbers with up to 4 digits using the formal written methods (column)</p> <p>Subtract decimals in context of money</p> <p>Estimate and use inverse operations to check answers to a calculation</p> <p>Solve subtraction two-step problems in contexts, deciding which operations and methods to use and why</p> <p>Subtract fractions with the same denominator</p>	<p>Practical</p> <p>Informal written methods</p> <p>Horizontal recording</p> <p>Formal written method</p>	<p>Dienes, tape measures, place value counters, coins, fraction cards, pizzas</p>  	<p>Partitioning</p> <p>5678 - 3462</p> <p>5000 - 3000 = 2000</p> <p>600 - 400 = 200</p> <p>70 - 60 = 10</p> <p>8 - 2 = 6</p> <p>2000 + 200 + 10 + 6 = 2216</p> <p>Column subtraction (with decomposition)</p> $\begin{array}{r} 2\overset{3}{4}56 - \\ 1385 \\ \hline 1071 \end{array} \quad \begin{array}{r} \pounds 6\overset{3}{4}15 \\ - \pounds 4\overset{1}{7} \\ \hline \pounds 2\overset{2}{8} \end{array}$ <p>Subtract fractions</p> <p><math>7/10 - 3/10 = 4/10</math></p> 	<p>As previous.</p> <p>Increase, decimal point, denominator, numerator</p>	<p>As previous with increasing fluency</p> <p>Subtract mentally with increasingly large numbers</p>


**Salford C of E Primary School – Progression in Addition, Subtraction, Multiplication and Division**

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Salford C of E Primary School – Progression in Addition, Subtraction, Multiplication and Division




<p><u>Y5</u></p>	<p>Consolidation of Y4</p> <p>Subtract whole numbers with more than 4 digits, using formal written methods (column)</p> <p>Subtract numbers with up to 3 decimal places using formal written methods (column)</p> <p>Solve subtraction multi-step problems in contexts, deciding which operation and methods to use and why</p> <p>Subtract fractions with the same denominator, and denominators that are multiples of the same number</p>	<p>Practical</p> <p>Informal written methods</p> <p>Horizontal recording</p> <p>Formal written method</p>	<p>Dienes, place value counters, fraction cards</p>  	<p>Column subtraction (with decomposition)</p> <p>As in Year 4 but with 3 decimal places</p> <p>Subtract fractions</p> <p><math>13/10 - 4/5 = 5/10 = 1/2</math></p>   <p>TAKE AWAY <math>4/5 =</math></p>	<p>As previous.</p> <p>tenths, hundredths, thousandths, partition, near multiples</p>	<p>Subtract mentally with increasingly large numbers</p> <p>Subtraction facts linked to bonds up to 1 (one dp) eg <math>1.0 - 0.7 = 0.3</math></p> <p>U - U.t</p>
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Salford C of E Primary School – Progression in Addition, Subtraction, Multiplication and Division

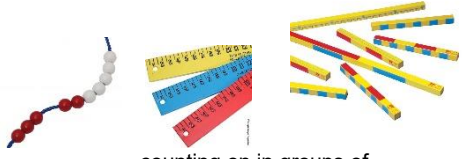

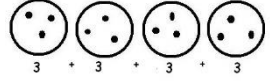
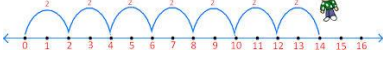
<p><b>Y6</b></p>	<p>Consolidation of Y5</p> <p>Application of all prior skills learnt to increase fluency</p> <p>Solve multi-step problems deciding on appropriate operation</p> <p>Pupils explore the order of operations using brackets</p> <p>Subtract fractions with different denominators/ mixed numbers</p>	<p>Practical</p> <p>Informal written methods</p> <p>Formal written method</p>	<p>Dienes, place value counters, fraction cards/cubes</p> 	<p><math>\frac{3}{4} - \frac{2}{3}</math></p> <p>↓ ↓</p> <p><math>\frac{9}{12} - \frac{8}{12} = \frac{1}{12}</math></p>	<p>As previous.</p> <p>Common denominator</p>	<p>As previous with increasing fluency</p> <p>Subtract mentally with increasingly large numbers and mixed operations.</p>
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**Salford C of E Primary School – Progression in Addition, Subtraction, Multiplication and Division**

Year group	Multiplication Objective	Method	Practical methods	Pictorial/written methods	Vocabulary	Mental recall
EYFS	Repeated grouping Counting in pairs Doubling	Practical / recorded using ICT (eg digital photos / pictures on IWB)	Toys, Beads, Rhymes, Counters, objects, number lines, stories, role play, number lines- hopping on, ten frames   Counting pairs	Drawings of problems   Begin to record using marks they can explain 	Double, pair, twos, fives, tens, group, set	Chanting of counting in 2s

Salford C of E Primary School – Progression in Addition, Subtraction, Multiplication and Division

<p>Y1</p>	<p>Consolidation of EYFS</p> <p>Begin to understand multiplication through grouping small quantities,</p> <p>Solve one-step problems involving multiplication</p> <p>Make connections between arrays and number patterns</p> <p>Double numbers and quantities</p> <p>Count in multiples of twos, fives and tens</p>	<p>Practical / recorded / using ICT</p> <p>Informal written methods</p> <p>Horizontal recording</p>	<p>long number lines, tapes, 100 square, counting sticks, Dienes, coins, cubes, bead strings, peg boards</p>  <p>counting on in groups of...</p>   <p>counting groups of objects</p>	<p>Pictures to represent working out</p>  <p>Jumps along a number line in 2s</p> 	<p>As previous.</p> <p>Count on in..., lots of, groups of pattern,</p>	<p>Consolidation of EYFS</p> <p>Chanting of counting in 2s, 5s 10s</p> <p>Double pairs to 10, then 20</p>
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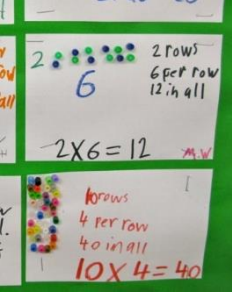

Salford C of E Primary School – Progression in Addition, Subtraction, Multiplication and Division



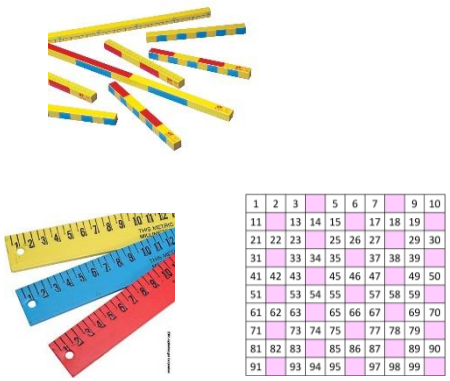
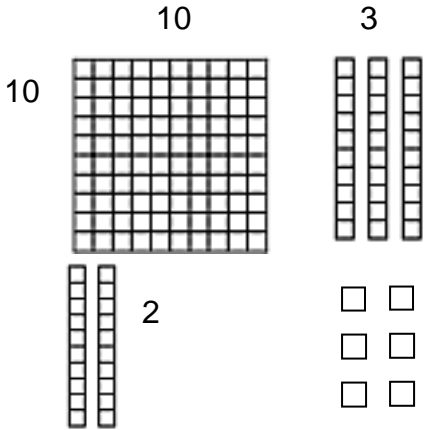
arranging objects in arrays

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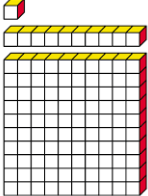
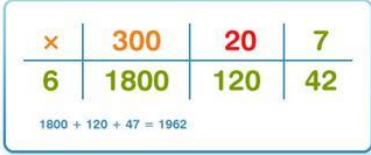
Salford C of E Primary School – Progression in Addition, Subtraction, Multiplication and Division

<p>Y2</p>	<p>Consolidation of Y1</p> <p>Count in steps of 2, 3, and 5 from 0, and in 10s from any number, forward and backward</p> <p>Recall and use multiplication facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers</p> <p>Calculate mathematical statements for multiplication within the multiplication tables and write them using the multiplication (x) and equals (=) signs</p> <p>Show that multiplication of two numbers can be done in any order (<b>commutativity</b>)</p> <p>Solve problems involving multiplication using materials, arrays, repeated addition, mental methods, and multiplication facts, including problems in contexts.</p> <p>Connect the 10 x multiplication table to place value</p> <p>Relate multiplication to grouping discrete and continuous quantities, to arrays and to repeated addition.</p> <p>Use <b>commutativity</b> and inverse relations to develop multiplicative reasoning (for example, <math>4 \times 5 = 20</math> and <math>20 \div 5 = 4</math>).</p>	<p>Practical</p> <p>Informal written methods</p> <p>Horizontal recording</p>	<p>Counting sticks, bead strings, number lines, 100 squares, Dienes, objects in groups and arrays</p>  <p>Counting groups of...</p> <table border="1" data-bbox="658 448 875 667"> <tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td></tr> <tr><td>2</td><td>4</td><td>6</td><td>8</td><td>10</td><td>12</td><td>14</td><td>16</td><td>18</td><td>20</td></tr> <tr><td>3</td><td>6</td><td>9</td><td>12</td><td>15</td><td>18</td><td>21</td><td>24</td><td>27</td><td>30</td></tr> <tr><td>4</td><td>8</td><td>12</td><td>16</td><td>20</td><td>24</td><td>28</td><td>32</td><td>36</td><td>40</td></tr> <tr><td>5</td><td>10</td><td>15</td><td>20</td><td>25</td><td>30</td><td>35</td><td>40</td><td>45</td><td>50</td></tr> <tr><td>6</td><td>12</td><td>18</td><td>24</td><td>30</td><td>36</td><td>42</td><td>48</td><td>54</td><td>60</td></tr> <tr><td>7</td><td>14</td><td>21</td><td>28</td><td>35</td><td>42</td><td>49</td><td>56</td><td>63</td><td>70</td></tr> <tr><td>8</td><td>16</td><td>24</td><td>32</td><td>40</td><td>48</td><td>56</td><td>64</td><td>72</td><td>80</td></tr> <tr><td>9</td><td>18</td><td>27</td><td>36</td><td>45</td><td>54</td><td>63</td><td>72</td><td>81</td><td>90</td></tr> <tr><td>10</td><td>20</td><td>30</td><td>40</td><td>50</td><td>60</td><td>70</td><td>80</td><td>90</td><td>100</td></tr> </table> <p>Counting on in...</p>  <p>Arranging objects in arrays</p>	1	2	3	4	5	6	7	8	9	10	2	4	6	8	10	12	14	16	18	20	3	6	9	12	15	18	21	24	27	30	4	8	12	16	20	24	28	32	36	40	5	10	15	20	25	30	35	40	45	50	6	12	18	24	30	36	42	48	54	60	7	14	21	28	35	42	49	56	63	70	8	16	24	32	40	48	56	64	72	80	9	18	27	36	45	54	63	72	81	90	10	20	30	40	50	60	70	80	90	100	<p>Arrays</p>  <p>Repeated addition in groups</p>  <p>Horizontal recording as repeat addition and using x and =</p> <p><math>2 \times 5 = 10</math></p> <p>“ Multiplying 2 is like adding lots of 2’s.”</p> <p><math>2 + 2 + 2 + 2 + 2</math></p> <p>Multiplying by 10 using place value</p> <table border="1" data-bbox="1167 1050 1525 1171"> <tr> <th>Tens</th> <th>Units</th> </tr> <tr> <td></td> <td>8</td> </tr> <tr> <td>8</td> <td>0</td> </tr> </table>	Tens	Units		8	8	0	<p>As previous.</p> <p>odd, even, every other, how many times, multiple of, sequence, times, multiply, multiplied by, multiple of, once, twice, three times, four times, five times... ten times... as (big, long, wide and so on), repeated addition, array, row, column, double</p>	<p>Consolidation of Y1</p> <p>Count in steps of 2, 3, and 5 from 0, and in 10s from any number, forward and backward</p> <p>Recall and use multiplication facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers</p>
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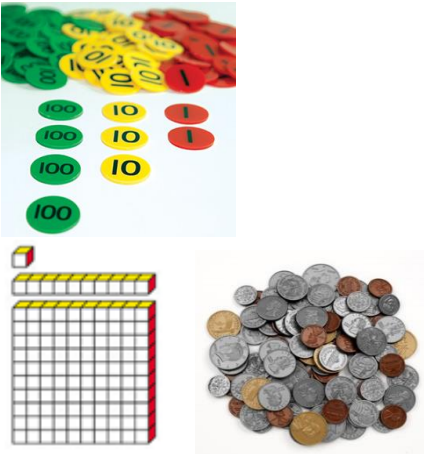
Salford C of E Primary School – Progression in Addition, Subtraction, Multiplication and Division

<p>Y3</p>	<p>Consolidation of Y2</p> <p>Count from 0 in multiples of 4, 8, 50 and 100</p> <p>Connect the 2, 4 and 8 multiplication tables through doubling.</p> <p>Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables</p> <p>Multiply TU x U using mental methods and progressing to formal written methods</p> <p>Solve problems, including missing number problems, involving multiplication including positive integer <b>scaling</b> problems and <b>correspondence</b> problems in which n objects are connected to m objects</p> <p>Pupils develop efficient mental methods, for example, using commutativity and <b>associativity</b> (for example, <math>4 \times 12 \times 5 = 4 \times 5 \times 12 = 20 \times 12 = 240</math>) and multiplication facts to derive related facts (for example, <math>3 \times 2 = 6</math>, <math>30 \times 2 = 60</math>).</p>	<p>Practical</p> <p>Informal written methods</p> <p>Horizontal recording</p> <p>Formal written method</p>	<p>Counting sticks, dienes, number lines, hundred square, tape measures,</p>  <p>13 x 12 =</p> 	<p>Partitioning</p> $32 \times 6 =$ $30 \times 6 = 180$ $2 \times 6 = 12$ $180 + 12 = 192$ <p>Written method: grid method</p> <table border="1" data-bbox="1176 478 1489 574"> <tr> <td>X</td> <td>30</td> <td>5</td> </tr> <tr> <td>7</td> <td>210</td> <td>35</td> </tr> </table> <p><math>210 + 35 = 245</math></p> <p>Introduce formal written method (expanded form):</p> $\begin{array}{r} 36 \\ \times 5 \\ \hline 30 \\ \hline 150 \\ \hline 180 \end{array}$	X	30	5	7	210	35	<p>As previous.</p> <p>Count on in hundreds, multiplication, product</p>	<p>Count from 0 in multiples of 4, 8, 50 and 100</p> <p>Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables</p> <p>Multiply TU x U using mental methods</p>
X	30	5										
7	210	35										


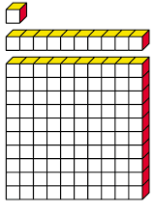
Salford C of E Primary School – Progression in Addition, Subtraction, Multiplication and Division

<p>Y4</p>	<p>Consolidation of Y3</p> <p>Count in multiples of 6, 7, 9, 25 and 1000</p> <p>Recall multiplication facts for multiplication tables up to <math>12 \times 12</math></p> <p>Use place value, known and derived facts to multiply mentally, including: multiplying by 0 and 1 and multiplying together three numbers</p> <p>Recognise and use factor pairs and <b>commutativity</b> in mental calculations</p> <p>Multiply TU <math>\times</math> U using formal written layout</p> <p>Multiply HTU <math>\times</math> U using formal written layout</p> <p>Solve problems involving multiplying and adding, including using the <b>distributive law</b> to multiply two digit numbers by one digit, integer scaling problems and harder <b>correspondence</b> problems such as n objects are connected to m objects.</p>	<p>Practical</p> <p>Informal written methods</p> <p>Formal written method</p>	<p>Dienes, place value counters, coins</p>  	<p>Written method: grid method (to be used when introducing)</p>  <p>Formal written method (expanded form)</p> $\begin{array}{r} 327 \\ \times 6 \\ \hline 1962 \end{array}$ <p>Formal written method (compact form)</p> $\begin{array}{r} 327 \\ \times 6 \\ \hline 1962 \\ 14 \end{array}$	<p>As previous.</p> <p>factor</p>	<p>As previous with increasing fluency</p> <p>Count in multiples of 6, 7, 9, 25 and 1000</p> <p>Recall multiplication facts for multiplication tables up to <math>12 \times 12</math></p> <p>Use place value, known and derived facts to multiply mentally, including: multiplying by 0 and 1 and multiplying together three numbers</p> <p>Recognise and use factor pairs and commutativity in mental calculations</p>
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Salford C of E Primary School – Progression in Addition, Subtraction, Multiplication and Division



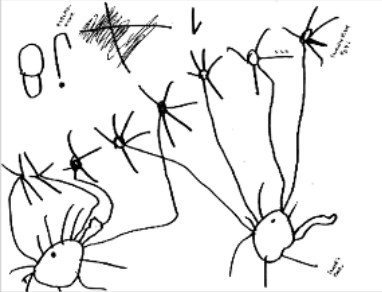

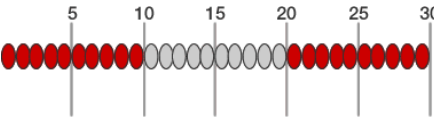

<p>Y5</p>	<p>Consolidation of Y4</p> <p>Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers</p> <p>Know and use the vocabulary of prime numbers, prime factors and composite (non- prime) numbers</p> <p>Establish whether a number up to 100 is prime and recall prime numbers up to 19</p> <p>ThHTU x U using a formal written method</p> <p>ThHTU x TU using a formal written method, including long multiplication for two-digit numbers</p> <p>Multiply numbers mentally drawing upon known facts</p> <p>Multiply whole numbers and those involving decimals by 10, 100 and 1000</p> <p>Recognise and use square numbers and cube numbers, and the notation for squared (<sup>2</sup>) and cubed (<sup>3</sup>)</p> <p>Solve problems involving multiplication including using their knowledge of factors and multiples, squares and cubes</p> <p>Solve problems involving multiplication.</p>	<p>Practical</p> <p>Informal written methods</p> <p>Formal written method</p>	<p>Dienes, place value counters, coins</p> 	<p>Formal written method (expanded form)</p> $\begin{array}{r} 1624 \\ \times 6 \\ \hline 24 \\ 120 \\ 3600 \\ \underline{6000} \\ 9744 \end{array}$ $\begin{array}{r} 1624 \\ \times 26 \\ \hline 24 \\ 120 \\ 3600 \\ \underline{6000} \\ 80 \\ 400 \\ 12000 \\ \underline{20000} \\ 42224 \\ 111 \end{array}$ <p>Formal written method (compact form)</p> $\begin{array}{r} 1624 \\ \times 6 \\ \hline 9744 \\ 312 \\ \hline 32480 \\ \underline{42224} \\ 111 \end{array}$	<p>As previous.</p> <p>Factorise, prime, prime factor</p>	<p>As previous with increasing fluency</p> <p>Multiply numbers mentally drawing upon known facts eg 300 x 6 = 1800</p>
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Salford C of E Primary School – Progression in Addition, Subtraction, Multiplication and Division

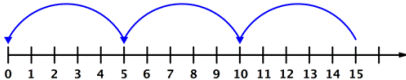
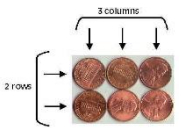

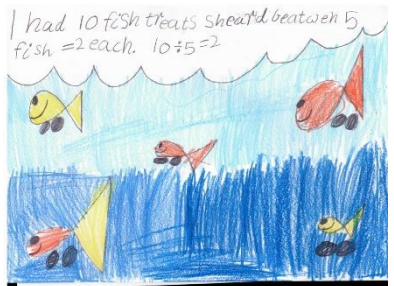

<p><b>Y6</b></p>	<p>Consolidation of Y5</p> <p>ThHTU x TU using the formal written method of long multiplication</p> <p>Identify common factors, common multiples and prime numbers</p> <p>Explore the order of operations using brackets; for example, <math>2 + 1 \times 3 = 5</math> and <math>(2 + 1) \times 3 = 9</math>.</p> <p>Use common factors to find equivalent fractions.</p> <p>Multiply simple pairs of proper fractions, writing the answer in its simplest form ( <math>1/2 \times 2/4 = 2/8 = 1/4</math> )</p>	<p>Practical</p> <p>Informal written methods</p> <p>Formal written method</p>	<p>Dienes, place value counters,</p>  	<p>As Year 5</p> <p>Equivalent Fractions:</p> $\frac{3}{5} \times 3 = \frac{9}{5}$ $\frac{5}{5} \times 3 = 15$ <p>Multiplying fractions</p> $\frac{1}{2} \times \frac{3}{8} = \frac{3}{16}$ <p>(multiply numerators) (multiply denominators)</p>	<p>As previous.</p> <p>Common denominator</p>	<p>As previous with increasing fluency</p> <p>Subtract mentally with increasingly large numbers and mixed operations.</p>
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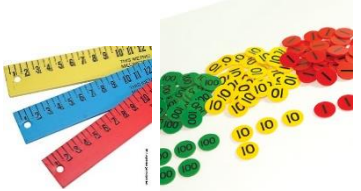
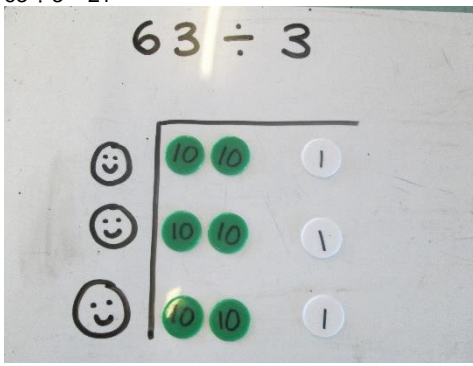
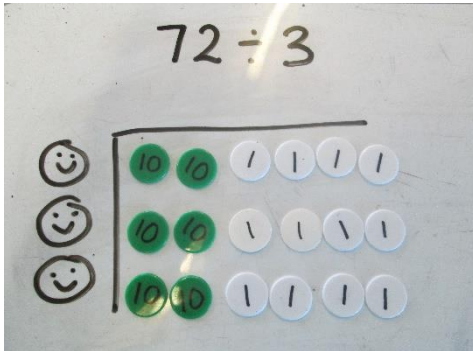
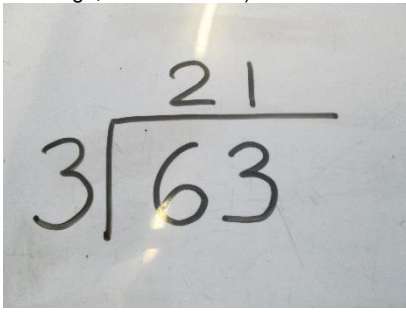
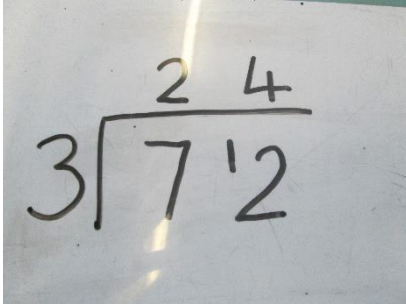
**Salford C of E Primary School – Progression in Addition, Subtraction, Multiplication and Division**

Year group	Division Objective	Method	Practical methods	Pictorial/written methods	Vocabulary	Mental recall
EYFS	Division as sharing – one for me, one for you...  Halving	Practical / recorded using ICT (eg digital photos / pictures on IWB)	Concrete materials – counters, teddies etc... Real life situations - sharing out the milk, fruit, pencils.  	Drawings of problems   Begin to record using marks they can explain  	Group, pairs, left over, share, equal, half/halve, same, count out, share out, left, left over	Chanting of counting in 2s
Y1	Consolidation of EYFS  Solve one-step problems involving division in practical contexts  Concept of division as both grouping and sharing  Find simple fractions of objects, numbers and quantities in practical contexts.	Practical / recorded using ICT  Informal written methods  Horizontal recording	Objects, Multilink, Lego, beads, bead strings, whiteboards, role play.  Sharing objects                      Grouping objects   	Pictorial representations $20 \div 2 = 10$ 	As previous.	Consolidation of EYFS  Chanting of counting in 2s, 5s and 10s

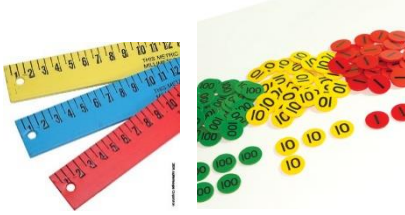
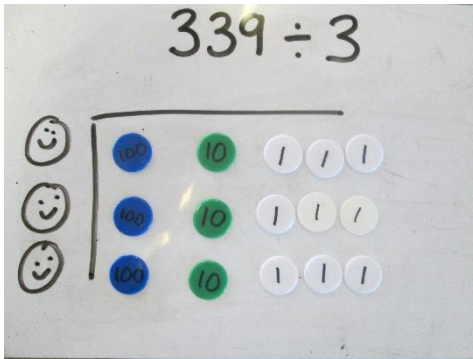
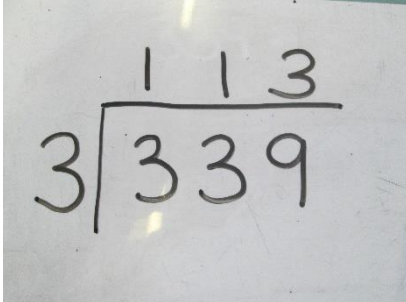
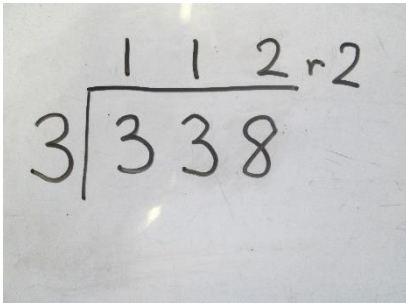
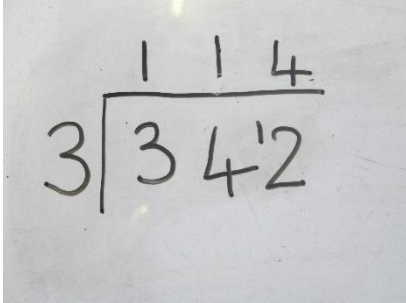
Salford C of E Primary School – Progression in Addition, Subtraction, Multiplication and Division

<p>Y2</p>	<p>Consolidation of Y1</p> <p>Recall and use division facts for the 2, 5 and 10 tables, including recognising odd and even numbers</p> <p>Calculate mathematical statements for division within the multiplication tables and write them using the division (<math>\div</math>) and equals (=) signs</p> <p>Know that division is not commutative i.e. cannot be done in any order.</p> <p>Solve problems involving division, using materials, arrays, mental methods, and division facts, including problems in contexts</p> <p>Recognise, find, name and write fractions <math>\frac{1}{4}</math>, <math>\frac{1}{3}</math>, <math>\frac{1}{2}</math> and <math>\frac{3}{4}</math> of a set of objects or quantity</p>	<p>Practical</p> <p>Informal written methods</p> <p>Horizontal recording</p>	<p>Number lines, hundred squares, multilink, counters, bead strings</p> <p><math>15 \div 3 = 5</math></p>  <p><math>6 \div 3 = 2</math></p>  <p>Find quarter of a quantity</p> 	<p>Pictorial representations</p>  <p>Division means sharing in equal</p> <p><math>15 \div 3 = 5 \rightarrow</math> Draw 3 people and</p>  <p>or count in 3s until you get to 15. <math>\rightarrow 3, 6, 9, 12, 15</math></p> <p>5 jumps</p> <p>Using multiplication facts</p> <p>Countings in 2s, 3s, 5s, 10s.</p>	<p>As previous.</p> <p>Groups of, times smaller, shorter etc, repeated subtraction, array, row, column, halve share, share equally, one each, two each, three each... group in pairs, threes... tens, equal groups of, divide, divided by, divided into, left, left over</p>	<p>Know division facts for 2, 5 and 10 times tables</p>
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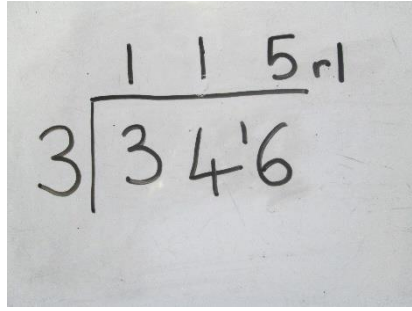
Salford C of E Primary School – Progression in Addition, Subtraction, Multiplication and Division

<p>Y3</p>	<p>Consolidation of Y2</p> <p>Recall and use division facts for the 3, 4 and 8 multiplication tables</p> <p>Write and calculate mathematical statements for division using the multiplication tables that they know using mental and progressing to formal written methods</p> <p>Solve problems, including missing number problems, involving division, including positive integer scaling problems</p> <p>Recognise that tenths arise from dividing one-digit numbers or quantities by 10</p>	<p>Practical</p> <p>Informal written methods</p> <p>Horizontal recording</p> <p>Formal written method</p>	<p>Number line, hundred square, tape measures, dienes, place value counters</p>  <p>Practical division using place value counters or dienes</p> <p><math>63 \div 3 = 21</math></p>  	<p>TU <math>\div</math> U</p> <p>Horizontal recording</p> <p><math>63 \div 3 = 21</math></p> <p>Formal written method – short division (no, exchange, no remainders)</p>  <p>Formal written method – short division (with exchange, no remainders)</p> 	<p>As previous.</p> <p>Division, remainder, divisor, dividend, quotient</p>	<p>As previous with increasing fluency</p> <p>Know division facts for 3, 4 and 8 multiplication tables</p>
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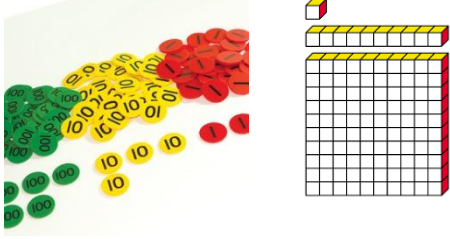
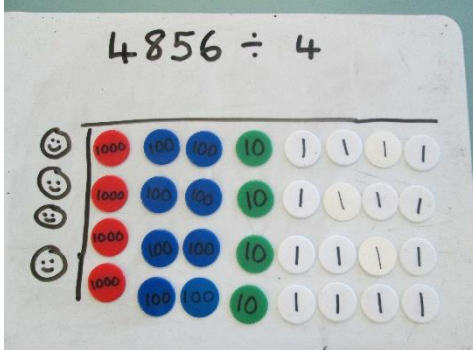
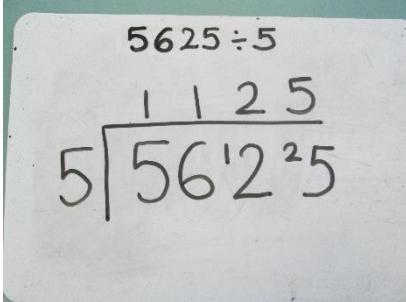
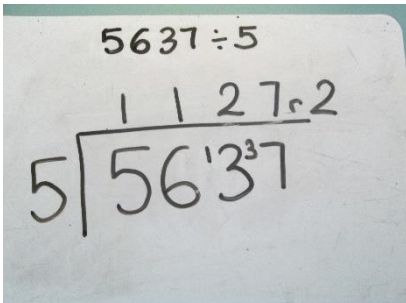
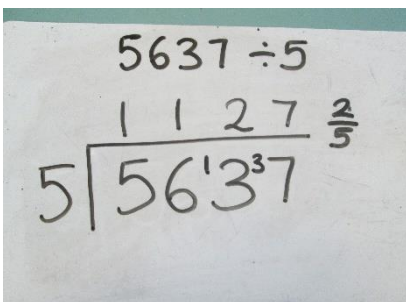
Salford C of E Primary School – Progression in Addition, Subtraction, Multiplication and Division

<p>Y4</p>	<p>Consolidation of Y3</p> <p>Recall division facts for multiplication tables up to 12 x 12</p> <p>Use place value and known and derived facts to divide mentally for example <math>600 \div 3 = 200</math> can be derived from <math>2 \times 3 = 6</math></p> <p>Practise to become fluent in the formal written method of short division with exact answers</p> <p>Recognise that hundredths arise when dividing a one- or two-digit number by 100 and dividing by dividing tenths by 10</p> <p>Find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths</p> <p>Solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number eg <math>\frac{4}{5}</math> of 25 = 20</p>	<p>Practical</p> <p>Formal written method</p>	<p>Number line, hundred square, tape measures, dienes, place value counters</p>  <p>Practical division using place value counters or dienes</p> <p><math>339 \div 3 = 113</math></p> 	<p>TU <math>\div</math> U, then HTU <math>\div</math> U</p> <p>Formal written method – short division (no exchange, first without, then with remainders)</p>   <p>Formal written method – short division (with exchange, first without, then with remainders)</p> 	<p>As previous.</p> <p>Exchange, factor, inverse, divisible by</p>	<p>As previous with increasing fluency</p> <p>Use know division facts to derive linked facts eg <math>600 \div 3 = 200</math></p>
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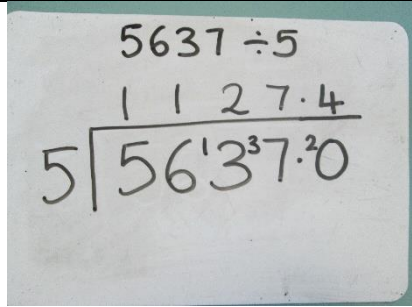
Salford C of E Primary School – Progression in Addition, Subtraction, Multiplication and Division

						
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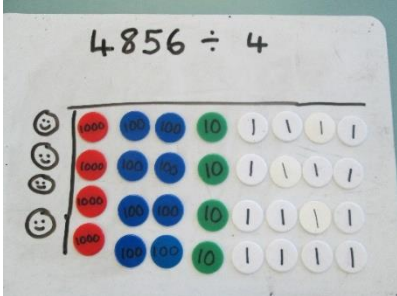
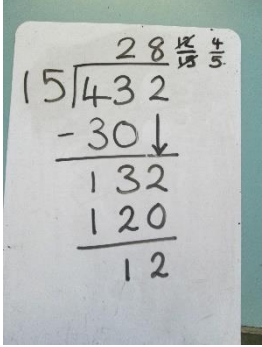
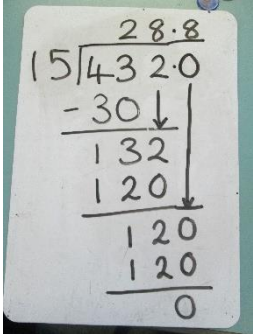
Salford C of E Primary School – Progression in Addition, Subtraction, Multiplication and Division

<p>Y5</p>	<p>Consolidation of Y4</p> <p>Multiply and divide numbers mentally, drawing upon known facts</p> <p>Divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context</p> <p>Divide whole numbers and those involving decimals by 10, 100 and 1,000</p> <p>Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers</p> <p>Establish whether a number up to 100 is prime and recall prime numbers up to 19</p> <p>Solve problems involving division, and a combination of all 4 operations, including understanding the meaning of the equals sign</p> <p>Solve problems involving division, including scaling by simple fractions and problems involving simple rates</p> <p>Interpret non-integer answers to division by expressing results in different ways according to the context, including with remainders, as fractions, as decimals or by rounding (for example, <math>98 \div 4 = 98/4 = 24 \text{ r } 2 = 24 \frac{1}{2} = 24.5 \approx 25</math>).</p>	<p>Practical</p> <p>Formal written method</p>	<p>Dienes, place value counters</p>  <p>Practical division using place value counters or dienes</p> 	<p>ThHTU ÷ U with and without remainders expressed as fractions and decimals</p>   	<p>As previous.</p> <p>Divisibility</p>	<p>As previous with increasing fluency</p> <p>Divide whole numbers by 10, 100 and 1000</p>
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Salford C of E Primary School – Progression in Addition, Subtraction, Multiplication and Division

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Salford C of E Primary School – Progression in Addition, Subtraction, Multiplication and Division

<p>Y6</p>	<p>Consolidation of Y5</p> <p>Application of all prior skills learnt to increase fluency</p> <p>Divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context</p> <p>Divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context</p> <p>Use written division methods in cases where the answer has up to 2 decimal places</p> <p>Divide proper fractions by whole numbers [for example, <math>1/3 \div 2 = 1/6</math>]</p> <p>Associate a fraction with division and calculate decimal fraction equivalents [for example, <math>0.375 = 3/8</math>]</p>	<p>Practical</p> <p>Informal written methods</p> <p>Formal written method</p>	<p>Dienes, place value counters</p>  <p>Practical division using place value counters or dienes</p> 	<p>ThHTU <math>\div</math> TU with remainders expressed as fractions and decimals</p> <p>Formal written method – long division</p>  	<p>As previous.</p>	<p>As previous with increasing fluency</p>
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