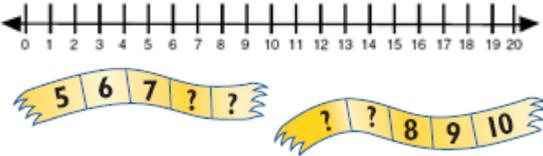
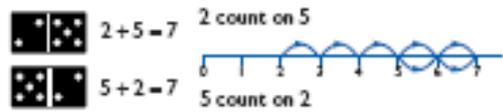
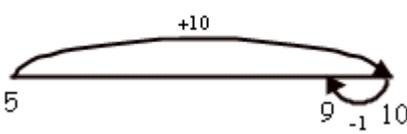
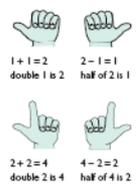
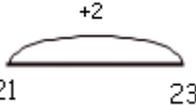
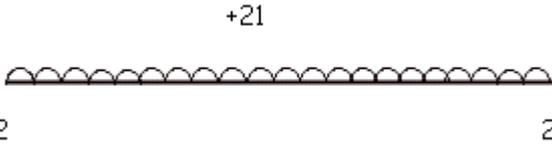
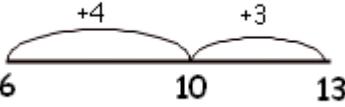
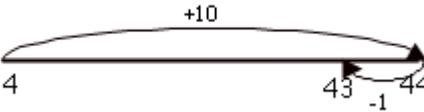
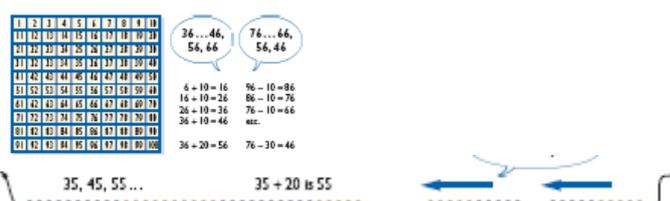
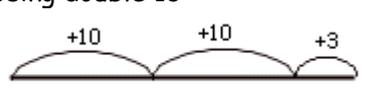
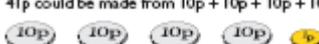
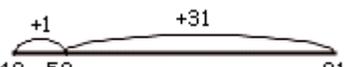
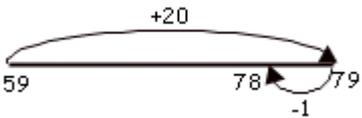


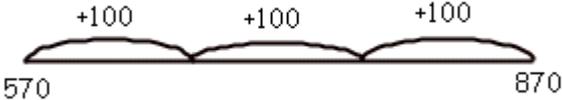
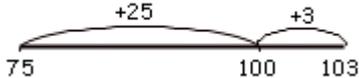
<p>Year 1</p>	<p>Addition</p>
<p>Counting forwards & backwards</p>	<p>(single digit) + (single digit) e.g. 4+8 (double digit) + (single digit) e.g. 13+4 begin using a labelled number line then progress to a blank number line children must be shown relationship between +/- inverses</p> 
<p>Re-ordering</p>	<p>putting largest number first e.g. 2+7 becomes 7+2 or 5+13 becomes 13+5 grouping number bonds 3+4+7 = 7+3+4</p> 
<p>Partitioning Using multiples of 10 & 100</p>	<p>N/A</p>
<p>Partitioning Bridging multiples of 10 & 100</p>	<p>N/A</p>
<p>Compensating</p>	<p>5+9 = 5+10-1 This strategy is useful for adding numbers that are close to multiple of 10</p> 
<p>Using near doubles</p>	<p>5+6 = double 5 + 1 or double 6 - 1 This strategy can be used when adding two numbers which are very close to each other</p> 
<p>Partitioning Bridging through numbers other than 10</p>	<p>1 week = 7 days Children need to learn that bridging through 10 or 100 isn't always appropriate 1 hour - How long is it from 2 o'clock to 6 o'clock? It is half past 7 what time was it 3 hours ago? It's 7 o'clock in the morning how many hours is it till midday?</p>

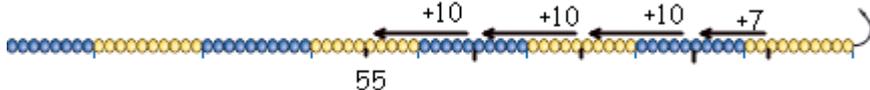
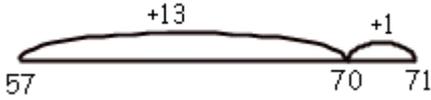
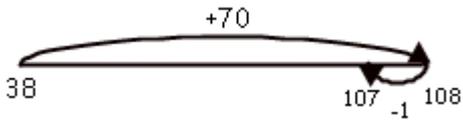
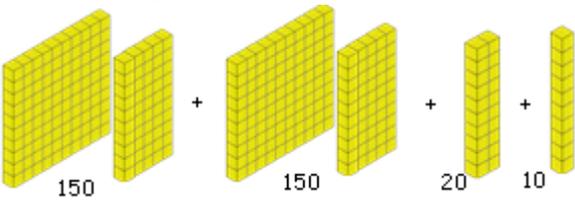
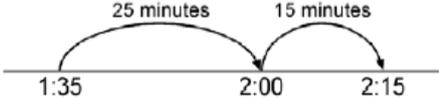
Year 2	Addition
Counting forwards & backwards	<p>(double digit) + (single digit) e.g. $14+3$ Using a multiple of 10 plus a single digit e.g. $30+3$</p>  <p>Encourage children to see the patterns and relationships with numbers and therefore use known facts.</p>
Re-ordering	<p>$2+36 = 36+2$</p>   <p>$5+7+5 = 5+5+7$</p> <p>Begin talking to children about finding the most efficient methods to use. Which one is quickest? Which one is most effective?</p>
Partitioning Using multiples of 10 & 100	<p>$30+47 = 30+40+7$</p> <p>Children need to know that numbers can be partitioned into tens and ones e.g. $25+14 = 20+10+5+4$</p> <p>41p could be made from 10p + 10p + 10p + 10p + 1p</p>  <p>or 20p + 20p + 1p</p>  <p>or lots of other ways with 20p, 10p and 1p coins.</p>
Partitioning Bridging multiples of 10 & 100	<p>$6+7 = 6+4+3$ or $15+7 = 15+5+2$</p>  <p>NB: Children need to be able to split numbers in different ways</p>
Compensating	<p>$34+9 = 34+10-1$ $52+21 = 52+20+1$</p>  <p>By using a number line in the early stages of this method it should help children avoid the confusion of whether to add one more or subtract one more when compensating later.</p>

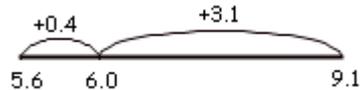
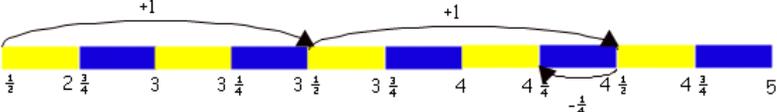
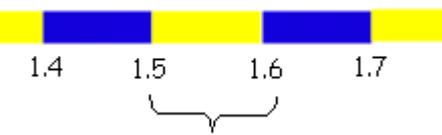
Using near doubles	$13 + 14 = \text{double } 13 + 1 \text{ or double } 14 - 1$ $40 + 39 = \text{double } 40 - 1$ Using near multiples of 10  Children should be encouraged to look for near doubles at the beginning of their development.
Partitioning Bridging through numbers other than 10	$1 \text{ year} = 12 \text{ months}$ $1 \text{ week} = 7 \text{ days}$ $1 \text{ day} = 24 \text{ hours}$ $1 \text{ hour} = 60 \text{ minutes}$ What time will it be 1 hour after 9 o'clock $10.30 - 10.45$ $9.45 - 10.15$ Use blank number lines to support this.

Year 3	Addition
Counting forwards & backwards	$40 + 30$ Counting in multiples of 10 
Re-ordering	$23 + 54 = 54 + 23$ Putting largest number first so there is a smaller step to count on. $13 + 21 + 13 = 13 + 13 + 21$ Using double 13 
Partitioning Using multiples of 10 & 100	$23 + 45 = 20 + 40 + 3 + 5$ Use place value knowledge and images to support this and encourage children to see that when adding or subtracting by a multiple of 10 the ten column is the only one affected. $41p$ could be made from $10p + 10p + 10p + 10p + 1p$  or $20p + 20p + 1p$  or lots of other ways with 20p, 10p and 1p coins.
Partitioning Bridging multiples of 10 & 100	$49 + 32 = 49 + 1 + 31$ Children should be encouraged to use a number line and identify the landmark number through which they should bridge. 

<p>Compensating</p>	<p> $58+19 = 58+20-1$ $19+32 = 20+32-1$ $53+11 = 53+10+1$ </p>  <p>Use resources such as numicon or unifix to demonstrate that too many have been subtracted so in order to correct we must add one.</p> <p>This can be extended to adding 8 by adding 10 and subtracting 2.</p>																																																																																																				
<p>Using near doubles</p>	<p> $18+16 = D18-2$ or $D16 +2$ $36+35 = D36-1$ or $D35+1$ $60+70 = D60+10$ or $D70-10$ </p> <table border="1" data-bbox="603 658 879 920"> <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>(Use a number square to identify numbers that are close to each other and therefore use the near doubles strategy.)</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
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<p>Partitioning Bridging through numbers other than 10</p>	<p> 40 minutes after 3.30 50 minutes before 1pm It is 10.40 how many minutes to 11.00 It is 9.45 how many minutes to 10.00 Use a blank number line or blank clock face to support skills. </p>																																																																																																				

<p>Year 4</p>	<p>Addition</p>
<p>Counting forwards & backwards</p>	<p> $570 + 300$ Counting in hundreds </p> 
<p>Re-ordering</p>	<p> $6+13+4+3 = 6+4+13+3$ $28+75 = 75+28$ (thinking of 28 as 25+3) </p>  <p>At all stages children should be encouraged and given opportunities to partition numbers in ways other than tens units etc.</p>

<p>Partitioning Using multiples of 10 & 100</p>	<p>$55+37 = 55+30+7 \rightarrow 85+7$</p> <p>41p could be made from 10p + 10p + 10p + 10p + 1p</p>  <p>or 20p + 20p + 1p </p> <p>or lots of other ways with 20p, 10p and 1p coins.</p> 
<p>Partitioning Bridging multiples of 10 & 100</p>	<p>$57+14 = 57+3+11 = 57+13+1$</p>  <p>Children should be becoming more familiar with landmark numbers and should be encouraged to look for whether numbers are close to them.</p>
<p>Compensating</p>	<p>$38+69 = 38+70-1$ $53+29 = 53+30-1$ $64+31 = 64+30+1$</p>  <p>Can be extended to numbers such as 28 also. Make connections to buying items in a shop for 99p.</p>
<p>Using near doubles</p>	<p>$38+35 = D35+3$ $160+170 = D150+10+20 = D160+10$ $380+380 = D400-20-20$</p>  <p>Children are best at this when they are able to see numbers within numbers and partition them accordingly.</p>
<p>Partitioning Bridging through numbers other than 10</p>	<p>It is 8.35 how many minutes to 9.15? It is 12.50 how many minutes till 1.30</p>  <p>Using the blank number line is always better than trying to accomplish the column method. Clock faces can also be used but take more time to draw.</p>

Year 5	<h2 style="text-align: center;">Addition</h2>
Counting forwards & backwards	$1\frac{1}{2} + \frac{3}{4} =$ Counting on fraction $1.6 + 0.8 =$ count step of 0.2  <p>Counting in fractions and decimals should be regularly used within then mental and oral section to support skills in this process.</p>
Re-ordering	$3+8+7+6+2 = 3+7+8+2+6$ Children should always be encouraged to look for number bonds or 10, 100, 1000 etc to support mental calculation. $200+567 = 567+200$ Encouraging putting largest number first helps children to add more efficiently. $25+36+75 = 75+25+36$ $1.7+2.8+0.3 = 1.7+0.3+2.8$ Encourage using the same skills using different number sets. So the children are looking for numbers which add to make 1.
Partitioning Using multiples of 10 & 100	$43+28+51 = 40+20+50+3+8+1$ $5.6+3.7 = 5.6+3+0.7$  <p>Children have developed good capability in partitioning to 10s and 100s now so extend their understanding and confidence in this method applying it to decimal numbers.</p>
Partitioning Bridging multiples of 10 & 100	$3.8 + 2.6 = 3.8 + 0.2 + 2.4$ $5.6 + 3.5 = 5.6 + 0.4 + 3.1$  <p>Emphasis on breaking number apart into numbers which support quick mental calculation.</p>
Compensating	$138 + 69 = 138 + 70 - 1$ $2.5 + 1\frac{3}{4} = 2\frac{1}{2} + 2 - \frac{1}{4}$  <p>Children who are confident in compensating whole numbers should be given opportunities to extend and use the same method with fraction and decimal numbers.</p>
Using near doubles	$1.5+1.6 = \text{D}1.5 + 0.1 \text{ or } \text{D}1.6 - 0.1$  <p>Recognising the double is the most important part of this strategy and the bit that needs to be encouraged for children who can double numbers mentally with confidence.</p>

Partitioning
Bridging
through
numbers other
than 10

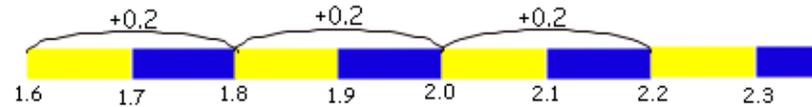
It is 11.30 how many minutes till 15.40?
Other e.g.(s) using 24 hour clock
Model this using a blank number line and reinforce the changes in landmark numbers.

Year 6

Addition

Counting
forwards &
backwards

$1.6 + 0.6 =$
Counting on in tenths or in steps of 0.2 etc



Children can count in twos and need to be able to use the numbers patterns they know elsewhere to improve their calculations.

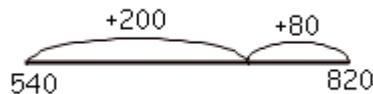
Re-ordering

$4.6 + 3.8 + 2.4 = 4.6 + 2.4 + 3.8$
 $34 + 27 + 46 = 46 + 34 + 27$

Reordering the numbers frequently can give children the opportunity to look closer at the numbers before they begin calculating so that they are able to spot any relationships, bonds, doubles etc and therefore help them select the most efficient method.

Partitioning
Using multiples
of 10 & 100

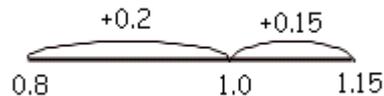
$540 + 280 = 540 + 200 + 80$



Children should be confident in this method by now so it can be extended to adding decimal number and partitioning these through units and tenths etc.

Partitioning
Bridging
multiples of 10
& 100

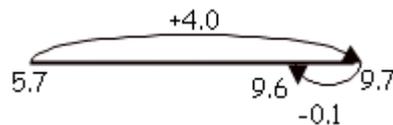
$296 + 134 = 296 + 4 + 130$
 $0.8 + 0.35 = 0.8 + 0.2 + 0.15$



Begin combining strategies such as looking for number bonds and bridging through multiples of 10.

Compensating

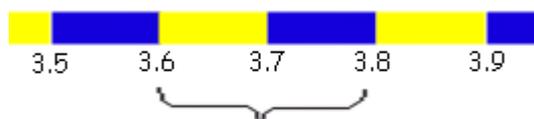
$5.7 + 3.9 = 5.7 + 4 - 0.1$



Extend compensating to decimal numbers. Use a blank number line to provide visual support.

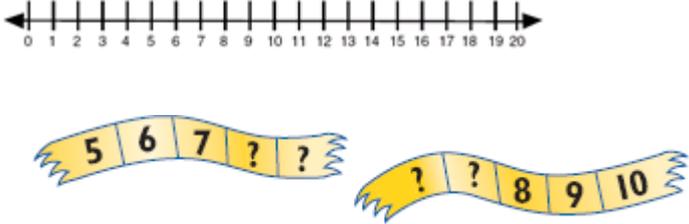
Using near
doubles

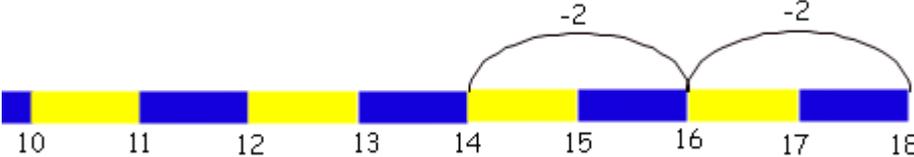
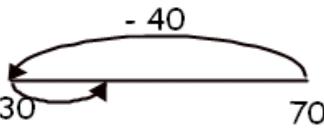
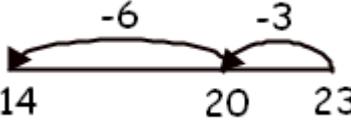
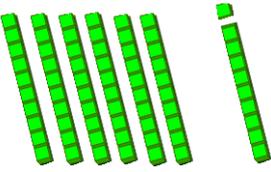
$3.6 + 3.8 = 3.5 + 0.1 + 0.3$ or $3.6 + 0.2$

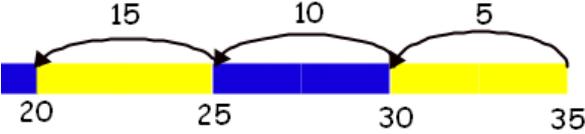
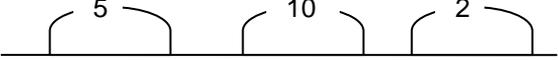
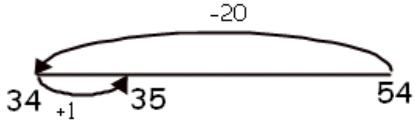


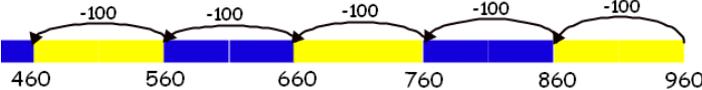
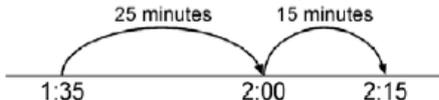
Extend the scope of numbers which are near doubles so they

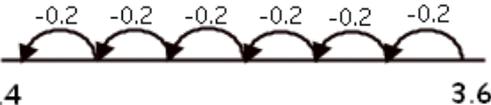
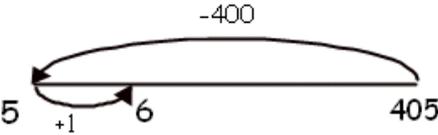
	may be three numbers away but it is still efficient to use the doubling strategy.
Partitioning Bridging through numbers other than 10	It is 10.45 how many minutes to 13.20? Children need to develop the ability to bridge through 60 and 24 and to know when it is appropriate.

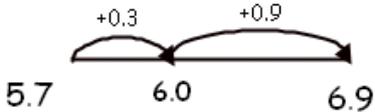
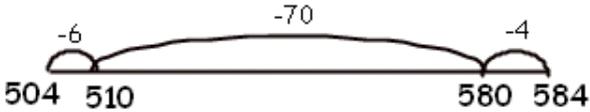
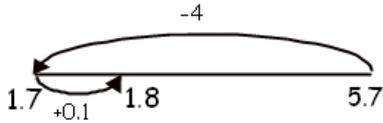
Year 1	Subtraction
Counting forwards & backwards	<p>7-3 15-3 Counting on and back in 1's</p> 
Re-ordering	<p>N/A It is important for children to know when numbers can and when they can't be reordered.</p>
Partitioning Using multiples of 10 & 100	<p>N/A</p>
Partitioning Bridging multiples of 10 & 100	<p>N/A</p>
Compensating	<p>N/A</p>
Partitioning Bridging through numbers other than 10	<p>See examples from addition 1 week = 7 days Children need to learn that bridging through 10 or 100 isn't always appropriate 1 hour - How long is it from 2 o'clock to 6 o'clock? It is half past 7 what time was it 3 hours ago? It's 7 o'clock in the morning how many hours is it until midday?</p>

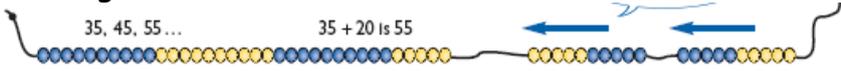
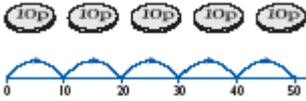
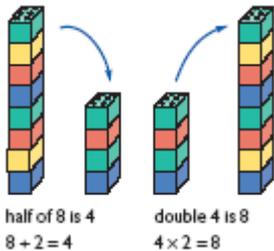
Year 2	Subtraction
Counting forwards & backwards	<p>27-4 Count on or back in 1's from any 2 digit number. 18-4 counting back in 2's from 18</p> 
Re-ordering	<p style="text-align: center;">N/A</p> <p>It is important for children to know when numbers can and when they can't be reordered.</p>
Partitioning Using multiples of 10 & 100	<p>$78-40 = 70-40+8$</p>  <p>It is important for pupils to know that numbers can be partitioned into units tens and hundreds. It is one of the most efficient methods and will support them when they come to written methods.</p>
Partitioning Bridging multiples of 10 & 100	<p>$23-9 = 23-3-6$</p>  <p>Children need to know when a number is close to a multiple of ten to be able to use this method efficiently and accurately.</p>
Compensating	<p>$70-9 = 70-10+1$</p>  <p>A useful strategy for adding and subtracting numbers that are close to 10 or a multiple of 10, such as numbers that end in 1, 2, 8 or 9. This forms the basis of rounding numbers but some children will be able to do this before they are taught to round numbers.</p>
Partitioning Bridging through numbers other than 10	<p>1 week = 7 days</p> <p>Children need to learn that bridging through 10 or 100 isn't always appropriate</p> <p>1 hour - How long is it from 2 o'clock to 6 o'clock? It is half past 7 what time was it 3 hours ago? It's 7 o'clock in the morning how many hours is it till midday?</p>

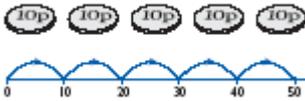
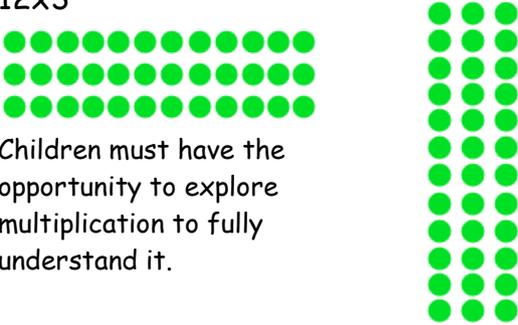
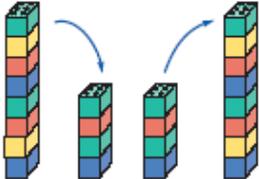
Year 3	Subtraction
<p>Counting forwards & backwards</p>	<p>90-40 = Counting on & back in 10's 35-15</p>  <p>Count on in steps of 3, 4 or 5 to at least 50 e.g. 24-8</p>
<p>Re-ordering</p>	<p>12-7-2 = 12-2-7</p>  <p>The way in which numbers are re-ordered will depend on what numbers the children have readily available to them.</p>
<p>Partitioning Using multiples of 10 & 100</p>	<p>68-32 = 60+8-30-2 or 60-30+8-2</p> <p>By partitioning them into units, tens and hundreds across the page children are able to see the numbers as wholes rather than single digits in columns.</p>
<p>Partitioning Bridging multiples of 10 & 100</p>	<p>55-17 = 55-5-10-2</p>  <p>55 50 40 38</p> <p>When adding or subtracting mentally it is often useful to make use of the fact that one number is close to 10 or a multiple of 10 by partitioning another number to give the difference.</p>
<p>Compensating</p>	<p>54-19 = 54-20+1</p>  <p>34 35 54</p> <p>45-11 = 45-10-1</p> <p>The number to be added or subtracted is rounded to a multiple of 10, plus or minus a small number.</p>
<p>Partitioning Bridging through numbers other than 10</p>	<p>40 minutes after 3.30 50 minutes before 1pm It is 10.40 how many minutes to 11.00 It is 9.45 how many minutes to 10.00 Use a blank number line or blank clock face to support skills.</p>

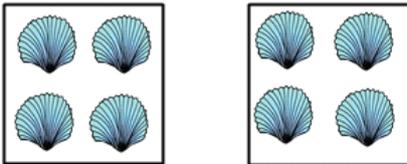
Year 4	<h2 style="text-align: center;">Subtraction</h2>
<p>Counting forwards & backwards</p>	<p>73-68 =</p> <p>Recognising numbers which are close</p> <p>86-30 = counting on/back in 10's</p> <p>960-500= counting on/back in 100's</p> 
<p>Re-ordering</p>	<p>$17+9-7 = 17-7+9$</p> <p>The strategy of reordering will apply mostly when the numbers are presented in written form or during a problem solving activity.</p>
<p>Partitioning Using multiples of 10 & 100</p>	<p>$365-40 = 300+60-40+5$</p> <p>Both numbers can be partitioned but as children become more confident they may only need to partition the second number and then will be able to clearly see how it subtracts from the larger number.</p>
<p>Partitioning Bridging multiples of 10 & 100</p>	<p>$85-37 = 85-5-30-2$</p>  <p>The use of an empty number line where the multiples of 10 are seen as landmark numbers is helpful and enable pupils to have an image of jumping backwards to these landmarks.</p>
<p>Compensating</p>	<p>$64-19 = 64-20+1$</p> <p>$34-11 = 34-10-1$</p> <p>The number to be added or subtracted is rounded to a multiple of 10, plus or minus a small number.</p>
<p>Partitioning Bridging through numbers other than 10</p>	<p>It is 8.35 how many minutes to 9.15?</p> <p>It is 12.50 how many minutes till 1.30</p>  <p>Using the blank number line is always better than trying to accomplish the column method. Clock faces can also be used but take more time to draw.</p>

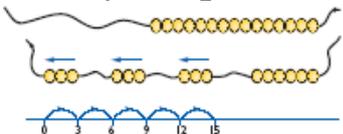
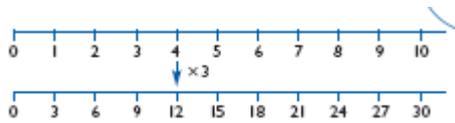
Year 5	Subtraction
Counting forwards & backwards	<p>$963-400 =$ Count on/back in 100s $3.6 - 2.4 =$ count on/back in step of 0.2</p> 
Re-ordering	<p>$58+47-38 = 58-38+47$ Giving the children a string of numbers to add mentally and encouraging them to look for bonds to 10, 100, doubles, near doubles or numbers which can be split to make bonds or landmark numbers; will help them practise this skill.</p>
Partitioning Using multiples of 10 & 100	<p>$4.7-3.5 = 4.7-3-0.5$ When you keep the first number whole and partition the smaller number then a blank number line becomes a good visual representation.</p>
Partitioning Bridging multiples of 10 & 100	<p>$£1.27-58p = £1.27-7p-50p-1p$ In the case of subtraction, bridging through the next 10 multiple of 10 is a very useful method (often called 'shopkeeper's subtraction', it is the method use almost universally when giving change with money). The use of coins helps keep track of the subtraction.</p>
Compensating	<p>$405-399 = 405-400+1$</p>  <p>The number to be added or subtracted is rounded to a multiple of 10, plus or minus a small number. This method can be extended to using a multiple of 100 or 1000.</p>
Partitioning Bridging through numbers other than 10	<p>It is 11.30 how many minutes till 15.40? Other e.g.(s) using 24 hour clock Model this using a blank number line and reinforce the changes in landmark numbers.</p>

Year 6	Subtraction
Counting forwards & backwards	<p>$6.9 - 5.7 =$</p> <p>Counting on/back when numbers are close together.</p> 
Re-ordering	<p>$8.7 + 5.6 - 6 - 7 = 8.7 - 6.7 + 5.6$</p> <p>$4.8 + 2.5 - 1.8 = 4.8 - 1.8 + 2.5$</p> <p>Pupils should learn that it is worth looking at all the numbers to see if there are pairs that subtract to multiples of ten. Reordering gets children looking at numbers and analysing how they are best used.</p>
Partitioning Using multiples of 10 & 100	<p>$276 - 153 = 276 - 100 - 50 - 3$</p> <p>Keep the larger number whole, partition the smaller number and use a blank number line to support the subtraction. They will be able to develop efficiency and jump back in increasingly larger steps. Remind the children the landmark numbers can also be whole numbers when dealing with decimal numbers or fractions.</p>
Partitioning Bridging multiples of 10 & 100	<p>$584 - 76 = 584 - 4 - 70 - 2$</p>  <p>The empty number line can give an image for the subtraction and pupils can also use the empty number line and build it up as an addition or by counting on as they would do when giving change in a shop.</p>
Compensating	<p>$5.7 - 3.9 = 5.7 - 4 + 0.1$</p>  <p>The number to be added or subtracted is rounded to a multiple of 10, plus or minus a small number. This method needs to be extended to rounding to the nearest whole number.</p>
Partitioning Bridging through numbers other than 10	<p>It is 10.45 how many minutes to 13.20?</p> <p>Children need to develop the ability to bridge through 60 and 24 and to know when it is appropriate.</p>

Year 1	<h2>Multiplication</h2>
<h3>Knowing facts</h3>	<p>Counting in 2,5 & 10s</p>  <p>Instant recall of multiplication and division facts is a key objective in developing pupils' numeracy skills. But learning them and being fluent at recalling them quickly is a gradual process that takes place over time.</p>
<h3>Using multiples of 10</h3>	<p>Make links to counting in steps of 10.</p> 
<h3>Multiplication by a single digit</h3>	<p>Make links to counting in steps of 2 and 5.</p>
<h3>Multiplication by a two digit number</h3>	<p>N/A</p>
<h3>Doubling and halving</h3>	<p>Making links to doubling.</p>  <p>Most people and children find doubling facts the easiest to remember so learning these facts will start early.</p>
<h3>Fractions decimals and percentages</h3>	<p>Knowing doubles to 10 and corresponding halves.</p>

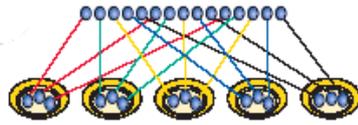
Year 2	<h2>Multiplication</h2>
Knowing facts	<p>Counting in 5s. Recall of 2, 5s and 10s times tables. Recall of division facts 2, 5 and 10</p>  <p>The ability to work out the facts and knowing them by heart are linked and support each other. It is important that at this stage children have the opportunity to work out the facts and see multiplication visually so that they understand it. Too many children struggling with recalling multiplication facts at KS2 do not fully understand the meaning of the facts they are learning.</p>
Using multiples of 10	<p>5×10 or 10×5</p>  <p>Encourage children to combine strategies such as doubling and multiplying by 10 for multiplying by 20 etc. Look at the pattern created by multiplying numbers by ten. Discuss this pattern but do not fall into misconceptions of adding a zero.</p>
Multiplication by a single digit	<p>12×3</p>  <p>Children must have the opportunity to explore multiplication to fully understand it.</p>
Multiplication by a two digit number	N/A
Doubling and halving	<p>Double to 20 and corresponding halves.</p>  <p>half of 8 is 4 $8 \div 2 = 4$</p> <p>double 4 is 8 $4 \times 2 = 8$</p> <p>Doubling facts can be used to simplify other calculations.</p>

Fractions decimals and percentages	Find half of 8 Find half of 30 
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Year 3	Multiplication
Knowing facts	2,3,4,5 and 10 tables. Corresponding div facts.  <p>Pupils need a great deal of practice to know facts by heart. It is crucial that practice involves as wide a variety of activities as possible</p>
Using multiples of 10	6×100  26×10 Being able to multiply by 10 and multiples of 10 depends on an understanding of place value. This ability is fundamental to being able to multiply and divide larger numbers.
Multiplication by a single digit	4×3  7×8 Once pupils are familiar with some multiplication facts, they can use these facts to work out others.
Multiplication by a two digit number	23×2  Using the facts that they do know to draw out and then work out the part that they don't yet know. Number lines allow them to do this and then see the bit that they have to work out.
Doubling and halving	Double 18. Double 30. Double multiples of ten and 2 digit numbers. Sometimes it can be helpful to halve one of the numbers and double the other to draw on known facts.

Fractions
decimals and
percentages

Find one third of 18, one tenth 20 and one fifth of 15.

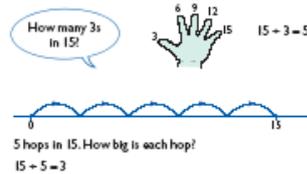


Year 4

Multiplication

Knowing facts

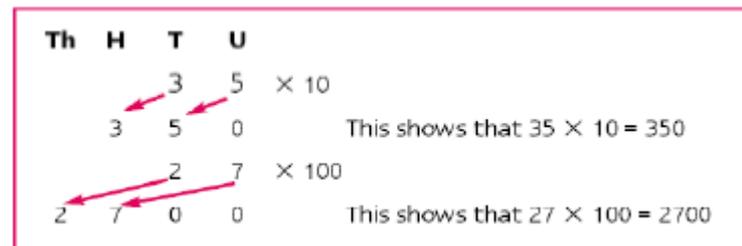
All multiplication facts up to 10x10 and corresponding division facts.



Arranging counters in rectangular arrays not only helps children to develop their understanding of multiplication facts but also gets them thinking about and learning the factor pairs for each number.

Using multiples
of 10

4x60
79x100
351x10



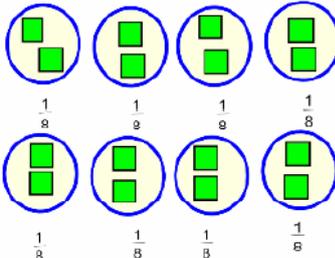
Being able to multiply by 10 and multiples of 10 depends on an understanding of place value. This ability is fundamental to being able to multiply and divide larger numbers.

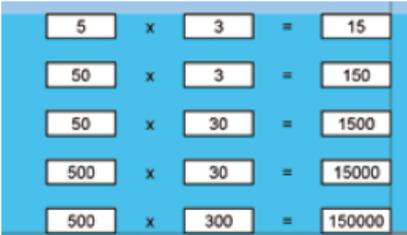
Multiplication
by a single digit

Reinforce multiplication facts
Use facts to partition numbers to make calculation more efficient.
e.g. $6 \times 7 = 6 \times (2 + 5) = 6 \times 2 + 6 \times 5$

Multiplication
by a two digit
number

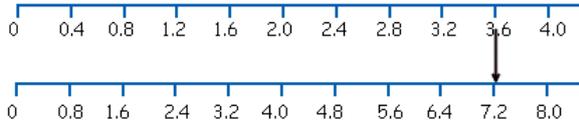
13x9
32x3
Children will need knowledge of other methods to draw on such as doubling or factors etc.

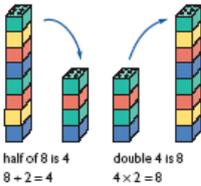
<p>Doubling and halving</p>	<p>$14 \times 5 = 14 \times 10 \div 2$ $12 \times 20 = 12 \times 2 \times 10$ $60 \times 4 = 60 \times 2 \times 2$</p> <p>Identify double of 2 digit numbers. Use these to work out doubles of multiple of 10 and 100 and corresponding halves. Larger numbers might need to be partitioned before doubling facts can be applied. This process may well be done mentally also or with jottings.</p>
<p>Fractions decimals and percentages</p>	<p>Find half of $9 = 4\frac{1}{2}$ Know 0.5 is $\frac{1}{2}$. Knowing equivalent decimals and fractions. 0.5, 0.25, 0.10, 0.01.</p> 

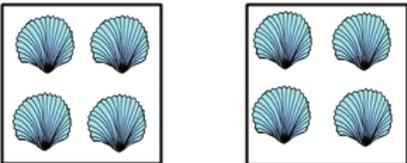
<p>Year 5</p>	<p>Multiplication</p>																																				
<p>Knowing facts</p>	<p>Recall quickly multiplication facts to 10×10. e.g 6×7, 60×7 and 600×7 etc. use them to multiply pairs of multiple of 10×100 derive corresponding divisional facts.</p>  <p>Children should be encouraged to identify relationships between numbers. So knowing the multiplication facts for 5 should help them to multiply 0.5.</p>																																				
<p>Using multiples of 10</p>	<p>9357×100</p> <table data-bbox="606 1624 1236 1769"> <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> </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> </tr> <tr> <td>100</td><td>200</td><td>300</td><td>400</td><td>500</td><td>600</td><td>700</td><td>800</td><td>900</td> </tr> <tr> <td>1000</td><td>2000</td><td>3000</td><td>4000</td><td>5000</td><td>6000</td><td>7000</td><td>8000</td><td>9000</td> </tr> </table> <p>Using the chart is very powerful. Children can clearly see the pattern and can use it in the early stages to support their recall. It demonstrates clearly that multiplication and division are inverse operations.</p>	1	2	3	4	5	6	7	8	9	10	20	30	40	50	60	70	80	90	100	200	300	400	500	600	700	800	900	1000	2000	3000	4000	5000	6000	7000	8000	9000
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10	20	30	40	50	60	70	80	90																													
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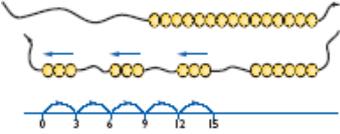
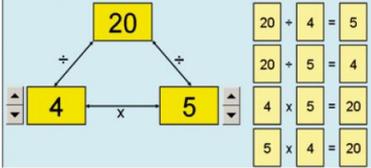
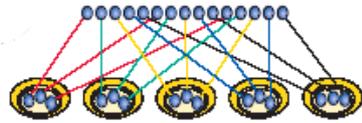
<p>Multiplication by a single digit</p>	<p>428x2 0.7x3</p>  <p>Make use of factors when multiplication so 7x6 is seen as 7x3x2 Refer children to the knowledge that they have and can surmise from the facts they already know and apply these to other facts such as decimals.</p>
<p>Multiplication by a two digit number</p>	<p>47x5 = (40x5) + (7x5) Being able to partition numbers into manageable chunks or being able to locate factors which can be worked out are method which the confident mathematician can use.</p>
<p>Doubling and halving</p>	<p>Derive double and halves of decimals. eg Double 6.5 Double 2.7 $\frac{1}{2}$ 5.6 Relating known fact again to support another method. Children must be secure in their knowledge of place value and the relationship between the numbers.</p>
<p>Fractions decimals and percentages</p>	<p>Derive tenths and hundredths 0.5 and 0.25. $\frac{1}{2}$ $\frac{1}{4}$ of numbers.</p>

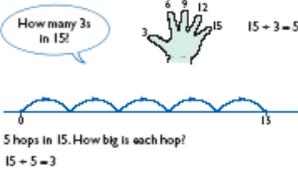
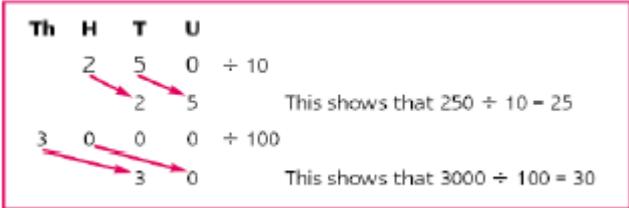
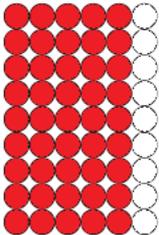
<p>Year 6</p>	<p>Multiplication</p>
<p>Knowing facts</p>	<p>Using facts to derive sq of numbers to 12x12 and corresponding sq of multiples of 10. 40x40 = 160 Extending the scope of the numbers they can multiply by drawing links and relationships between numbers. Children need to be shown how their recall of table facts can support their calculations beyond 12 x.</p>
<p>Using multiples of 10</p>	<p>23x50 = 637.6x10 =</p>  <p>Primary Numerical Strategy</p>

	<p>Children should be very clearly using the language of moving numbers rather than adding zeros.</p>												
<p>Multiplication by a single digit</p>	<p>8.6x6 2.9x9</p> <table border="1" data-bbox="592 387 778 562"> <tr><td>0</td><td>0.3</td><td>0.6</td></tr> <tr><td>0.9</td><td>1.2</td><td>1.5</td></tr> <tr><td>1.8</td><td>2.1</td><td>2.4</td></tr> <tr><td>2.7</td><td>3</td><td>3.3</td></tr> </table> <p>The use of factors often makes it easier for children to work out more complicated multiplication but sometimes they will need jottings to keep track of the numbers as they go.</p>	0	0.3	0.6	0.9	1.2	1.5	1.8	2.1	2.4	2.7	3	3.3
0	0.3	0.6											
0.9	1.2	1.5											
1.8	2.1	2.4											
2.7	3	3.3											
<p>Multiplication by a two digit number</p>	<p>13x50 14x50</p>  <p>At this stage children will have developed written methods and will want to use these; it is important to make sure that the children do still look at numbers and calculations carefully to ensure that they cannot use all the methods they have learn and calculate mentally as this will be quicker.</p>												
<p>Doubling and halving</p>	<p>Consolidate doubles and halves of decimals. Double 3.6 Half 12.8</p> 												
<p>Fractions decimals and percentages</p>	<p>Consolidate tenths & hundreds. $\frac{1}{2}$ $\frac{1}{4}$ of numbers.</p>												

Year 1	Division
Knowing facts	N/A
Using multiples of 10	N/A
Division by a single digit	N/A
Doubling and halving	<p>Corresponding halves.</p>  <p>half of 8 is 4 $8 \div 2 = 4$</p> <p>double 4 is 8 $4 \times 2 = 8$</p> <p>Most people and children find doubling facts the easiest to remember so learning these facts will start early. So links and recall of halving facts also need to be emphasised.</p>
Fractions decimals and percentages	Knowing doubles to 10 and corresponding halves.

Year 2	Division
Knowing facts	<p>Counting in 5s. Recall of 2, 5s and 10s times tables. Recall of division facts 2, 5 and 10</p>  <p>Instant recall of multiplication and division facts is a key objective in developing pupils' numeracy skills. But learning them and being fluent at recalling them quickly is a gradual process that takes place over time. But references and links should be made where appropriate. Children will need to do lots of practical sharing and grouping activities to fully understand division.</p>
Using multiples of 10	$60 \div 10$
Division by a single digit	$18 \div 2$ $16 \div 4$ Children must have the opportunity to explore multiplication to fully understand it.
Doubling and halving	<p>Knowing doubles and corresponding halves to 20 Halving facts can be used to simplify other calculations.</p>
Fractions decimals and percentages	<p>Finding halves of numbers to 20. Find half of 8 Find half of 30</p> 

Year 3	<h2 style="text-align: center;">Division</h2>
<h3>Knowing facts</h3>	<p>2,3,4,5 and 10 tables. Corresponding div facts.</p>  <p>Pupils need a great deal of practice to know facts by heart. It is crucial that practice involves as wide a variety of activities as possible</p>
<h3>Using multiples of 10</h3>	<p>$700 \div 100$ $300 \div 10$</p> <p>Being able to divide by 10 and multiples of 10 depends on an understanding of place value. This ability is fundamental to being able to multiply and divide larger numbers.</p>
<h3>Division by a single digit</h3>	<p>As above using known division facts.</p>  <p>Once pupils are familiar with some multiplication and division facts, they can use these facts to work out others.</p>
<h3>Doubling and halving</h3>	<p>Halving multiples of 10 to 100. e.g $\frac{1}{2}$ of 20 $\frac{1}{2}$ of 30</p> <p>Sometimes it can be helpful to halve one of the numbers and double the other to draw on known facts.</p>
<h3>Fractions decimals and percentages</h3>	<p>Find one third of 18, one tenth 20 and one fifth of 15.</p>  <p>Finding $\frac{1}{3}$ $\frac{1}{2}$ $\frac{1}{5}$ $\frac{1}{6}$ of $\frac{1}{3}$ of 18 $\frac{1}{10}$ $\frac{1}{4}$ $\frac{1}{10}$ of 20 $\frac{1}{5}$ of 15.</p> <p>Make sure they link to table facts.</p>

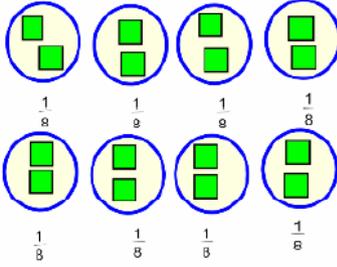
Year 4	<h2 style="text-align: center;">Division</h2>
<h3>Knowing facts</h3>	<p>All multiplication facts up to 10x10 and corresponding division facts.</p>  <p>How many 3s in 15? $15 \div 3 = 5$</p> <p>5 hops in 15. How big is each hop? $15 \div 5 = 3$</p> <p>Arranging counters in rectangular arrays not only helps children to develop their understanding of multiplication facts but also gets them thinking about and learning the factor pairs for each number.</p>
<h3>Using multiples of 10</h3>	<p>$580 \div 10$</p>  <p>Being able to multiply by 10 and multiples of 10 depends on an understanding of place value. This ability is fundamental to being able to multiply and divide larger numbers.</p>
<h3>Division by a single digit</h3>	<p>$36 \div 4$</p> <p>Link to known facts.</p> <p>$54 = 6 \times \square$</p>  <p>Reinforce division facts Use facts to partition numbers to make calculation more efficient.</p>
<h3>Multiplication or division by a two digit number</h3>	<p>$93 \div 3$.</p> <p>Extending beyond learnt multiplication facts.</p>
<h3>Doubling and halving</h3>	<p>$60 \div 4 = 60 \div 2 \div 2$</p> <p>Using halving as a strategy where appropriate.</p> <p>$120 \div 2$</p> <p>Identify halves of 2 digit numbers. Use these to work out halves of multiple of 10 and 100 and corresponding doubles. Larger numbers might need to be partitioned before halving facts can be applied. This process may well be done mentally also or with jottings.</p>

Fractions
decimals and
percentages

Find half of $9 = 4\frac{1}{2}$

Know 0.5 is $\frac{1}{2}$.

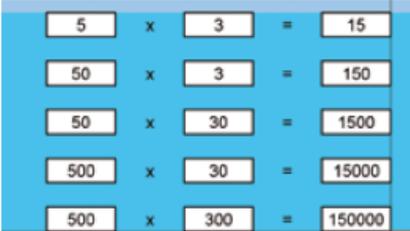
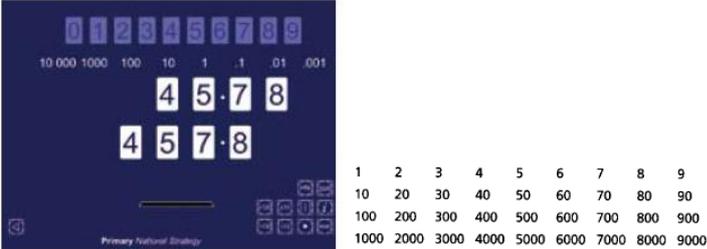
Knowing equivalent decimals and fractions. 0.5,
0.25, 0.10, 0.01.

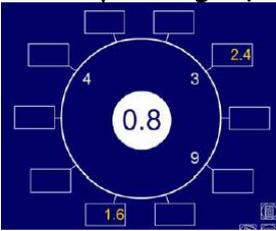
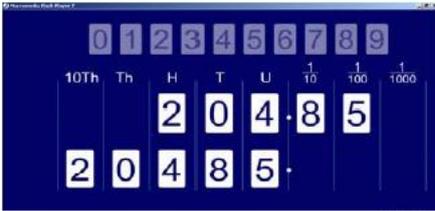
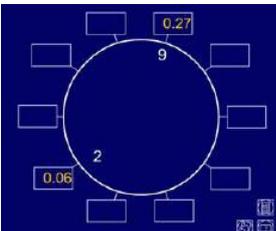


Finding $\frac{1}{2}$ of 150

$\frac{1}{2}$ of 21.60

$\frac{1}{2}$ of 9

Year 5	Division
Knowing facts	<p>Recall quickly multiplication facts to 10x10. e.g 6x7, 60x7 and 600x7 etc. use them to multiply pairs of multiple of 10x100 derive corresponding divisional facts.</p>  <p>Children should be encouraged to identify relationships between numbers. So knowing the division facts for 100 should help them to divide 1.0.</p>
Using multiples of 10	<p>9900÷10 737÷10 2360÷100</p>  <p>Using the chart is very powerful. Children can clearly see the pattern and can use it in the early stages to support their recall. It demonstrates clearly that multiplication and division are inverse operations.</p>
Division by a single digit	<p>154÷2 (100 ÷ 2) + (50 ÷ 2) + (4 ÷ 2) = 72 Make use of factors when multiplication so 7x6 is seen as 7x3x2. Knowledge of factors will support and strengthen division. Refer children to the knowledge that they have and can surmise from the facts they already know and apply these to other facts such as decimals.</p>
Doubling and halving	<p>$\frac{1}{2}$ of 960 $\frac{1}{4}$ of 64 Relating known fact again to support another method. Children must be secure in their knowledge of place value and the relationship between the numbers.</p>
Fractions decimals and percentages	<p>Derive tenths and hundredths 0.5 and 0.25. $\frac{1}{2}$ $\frac{1}{4}$ of numbers. 25% of 100 70% of 100cm $\frac{1}{2}$ of £71.30</p>

Year 6	Division
Knowing facts	<p>Using facts to derive sq of numbers to 12x12 and corresponding sq of multiples of 10.</p>  <p>$40 \times 40 = 160$</p> <p>Extending the scope of the numbers they can divide by drawing links and relationships between numbers.</p>
Using multiples of 10	<p>$135.40 \div 100$</p>  <p>Children should be very clear in their language of moving the numbers between the columns.</p>
Division by a single digit	<p>$45.9 \div 9$</p> <p>Look for links to known facts within the numbers. Use known facts to support division of decimals</p>  <p>The use of factors often makes it easier for children to work out more complicated multiplication but sometimes they will need jottings to keep track of the numbers as they go.</p>
Doubling and halving	<p>$1.6 \div 2$</p> <p>$36 \times 25 = 36 \times 100 \div 4 = 36 \div 4 \times 100$</p>
Fractions decimals and percentages	<p>Consolidate tenths & hundreds.</p> <p>$\frac{1}{2}$ $\frac{1}{4}$ of numbers.</p> <p>Find 17.5% of 5250</p> <p>25% of 360</p>