
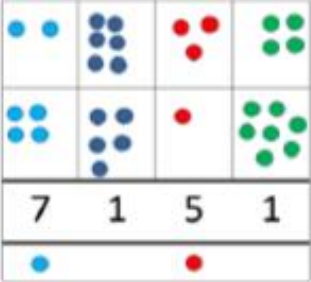
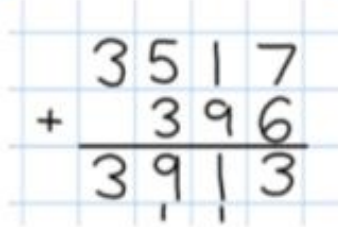
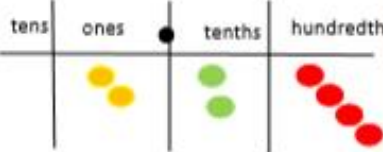
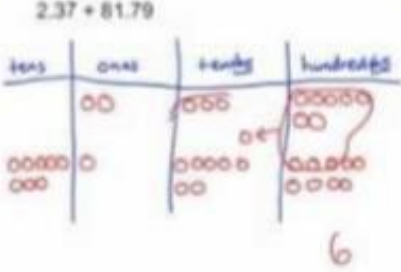
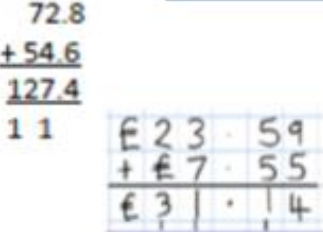
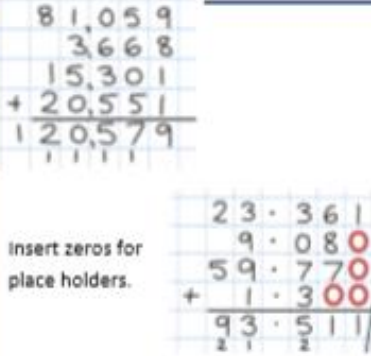


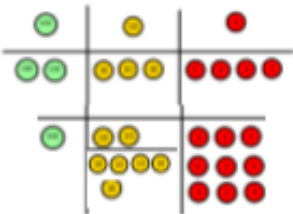
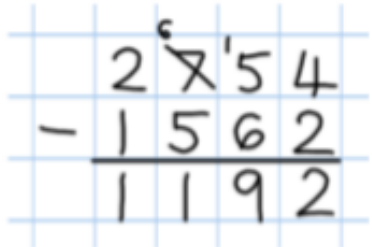
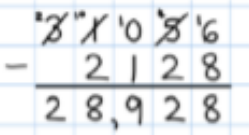
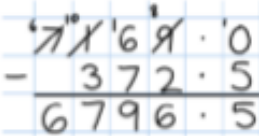
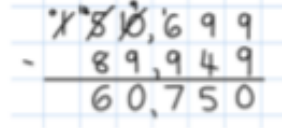
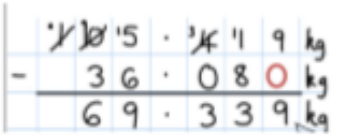
Objective & Strategy	Concrete	Pictorial	Abstract
Y4—add numbers with up to 4 digits	<p>Children continue to use dienes or pv counters to add, exchanging ten ones for a ten and ten tens for a hundred and ten hundreds for a thousand.</p> 	 <p>Draw representations using pv grid.</p>	 <p>Continue from previous work to carry hundreds as well as tens. Relate to money and measures.</p>
Y5—add numbers with more than 4 digits. Add decimals with 2 decimal places, including money.	<p>As year 4</p>  <p>introduce decimal place value counters and model exchange for addition.</p>		
Y6—add several numbers of increasing complexity Including adding money, measure and decimals with different numbers of decimal points.	<p>As Y5</p>	<p>As Y5</p>	 <p>Insert zeros for place holders.</p>

Y4-6 ADDITION +

Key vocabulary: *add, more, plus, and, make, altogether, total, equal to, equals, double, most, count on, number line, sum, tens, units, partition, plus, addition, column, tens boundary, hundreds boundary, increase, vertical, 'carry', expanded, compact, **thousands, hundreds, digits, inverse***

Key skills for addition at Y4:

- Select most appropriate method: mental, jottings or written and explain why.
- Recognise the place value of each digit in a four-digit number.
- Round any number to the nearest 10, 100 or 1000.
- Estimate and use inverse operations to check answers.
- Solve 2-step problems in context, deciding which operations and methods to use and why.
- Find 1000 more or less than a given number.
- Continue to practise a wide range of mental addition strategies, ie. number bonds, add the nearest multiple of 10, 100, 1000 and adjust, use near doubles, partitioning and recombining.
- Add numbers with up to 4 digits using the formal written method of column addition
- Solve 2-step problems in contexts, deciding which operations and methods

Objective & Strategy	Concrete	Pictorial	Abstract
<p>Subtracting tens and ones</p> <p>Year 4 subtract with up to 4 digits.</p> <p><i>Introduce decimal subtraction through context of money</i></p>	<p>234 - 179</p>  <p>Model process of exchange using Numicon, base ten and then move to PV counters.</p>	<p>Children to draw pv counters and show their exchange—see Y3</p>	 <p>Use the phrase 'take and make' for exchange</p>
<p>Year 5- Subtract with at least 4 digits, including money and measures.</p> <p><i>Subtract with decimal values, including mixtures of integers and decimals and aligning the decimal</i></p>	<p>As Year 4</p>	<p>Children to draw pv counters and show their exchange—see Y3</p>	 <p>Use zeros for place-holders.</p> 
<p>Year 6—Subtract with increasingly large and more complex numbers and decimal values.</p>			 

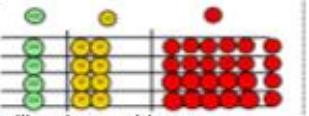
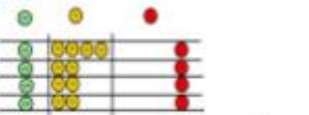

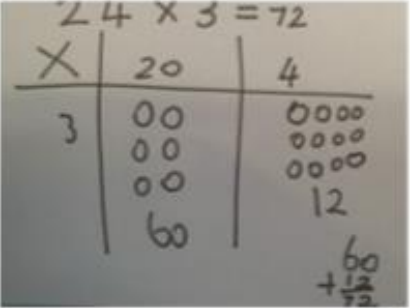
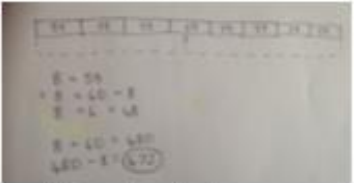
Y4-6 SUBTRACTION -

Y4

Key Vocabulary: equal to, take, take away, less, minus, subtract, leaves, distance between, how many more, how many fewer / less than, most, least, count back, how many left, how much less is_? difference, count on, tens, units, exchange, decrease, hundreds, value, digit, inverse

Key skills for subtraction at Y4:

- Subtract by counting on where numbers are close together or they are near to multiples of 100
- Children select the most appropriate and efficient methods for given subtraction calculations.
- Estimate and use inverse operations to check answers.
- **Reasoning** :Solve addition /subtraction 2-step problems, choosing which operations / methods to use.
- Solve simple measure and money problems involving fractions and decimals to two decimal places.
- Find 1000 more or less than a given number.
- Count backwards through zero, including negative numbers.
- Recognise place value of each digit in a 4-digit number; round any number to the nearest 10, 100 or 1000 and solve number and practical problems that involve the above.

Objective & Strategy	Concrete	Pictorial	Abstract																													
<p>Grid method recap from year 3 for 2 digits x 1 digit</p> <p>Move to multiplying 3 digit numbers by 1 digit. (year 4 expectation)</p>	<p>Use place value counters to show how we are finding groups of a number. We are multiplying by 4 so we need 4 rows</p>  <p>Calculate: 4×126</p> <p>Fill each row with 126</p>  <p>Add up each column, making any exchanges needed</p> 	<p>Children can represent their work with place value counters in a way that they understand.</p> <p>They can draw the counters using colours to show different amounts or just use the circles in the different columns to show their thinking as shown below.</p> 	<p>Start with multiplying by one digit numbers and showing the clear addition alongside the grid.</p> <table border="1" data-bbox="1400 475 1668 555"> <tr> <td>x</td> <td>30</td> <td>5</td> </tr> <tr> <td>7</td> <td>210</td> <td>35</td> </tr> </table> <p>$210 + 35 = 245$</p>	x	30	5	7	210	35																							
x	30	5																														
7	210	35																														
<p>Column multiplication</p>	<p>Children can continue to be supported by place value counters at the stage of multiplication. This initially done where there is no regrouping. $321 \times 2 = 642$</p> <table border="1" data-bbox="465 997 739 1316"> <thead> <tr> <th>Hundreds</th> <th>Tens</th> <th>Ones</th> </tr> </thead> <tbody> <tr> <td>3 blocks</td> <td>2 rods</td> <td>1 unit</td> </tr> <tr> <td>3 blocks</td> <td>2 rods</td> <td>1 unit</td> </tr> <tr> <td>3 blocks</td> <td>2 rods</td> <td>1 unit</td> </tr> <tr> <td>3 blocks</td> <td>2 rods</td> <td>1 unit</td> </tr> </tbody> </table> <p>It is important at this stage that they always multiply the ones first.</p> <p>The corresponding long multiplication is modelled alongside</p>	Hundreds	Tens	Ones	3 blocks	2 rods	1 unit	3 blocks	2 rods	1 unit	3 blocks	2 rods	1 unit	3 blocks	2 rods	1 unit	<p>The grid method may be used to show how this relates to a formal written method.</p> <table border="1" data-bbox="963 901 1243 965"> <tr> <td>x</td> <td>300</td> <td>20</td> <td>7</td> </tr> <tr> <td>4</td> <td>1200</td> <td>80</td> <td>28</td> </tr> </table>  <p>Bar modelling and number lines can support learners when solving problems with multiplication alongside the formal written methods.</p>	x	300	20	7	4	1200	80	28	<table data-bbox="1355 877 1601 1364"> <tr> <td>327</td> </tr> <tr> <td>x 4</td> </tr> <tr> <td>1308</td> </tr> </table> <p>This may lead to a compact method.</p> <table border="1" data-bbox="1355 1220 1534 1364"> <tr> <td>327</td> </tr> <tr> <td>x 4</td> </tr> <tr> <td>1308</td> </tr> </table>	327	x 4	1308	327	x 4	1308
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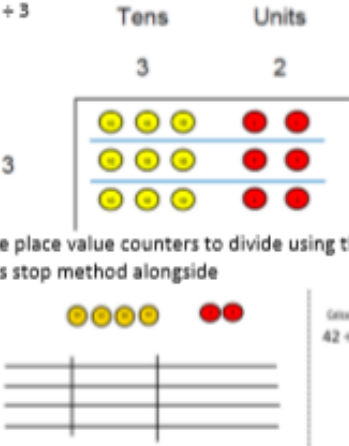
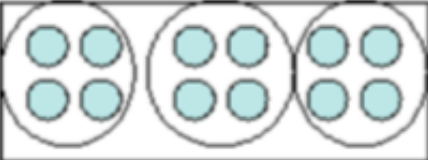
Y4 MULTIPLICATION X

Y4

Key Vocabulary: groups of, lots of, times, array, altogether, multiply, count, repeated addition, column, sets of, equal groups, times, partition, grid method, multiple, product, tens, units, value

Key Skills for multiplication:

- Count in multiples of 6, 7, 9, 25 and 1000
- Recall all multiplication facts 12 x 12
- Recognise inverse operation for multiplication and division
- Recognise place value of digits in a 4 digit number
- Use place value facts to multiply mentally
- Use commutativity law for mental strategies: $2 \times 6 \times 5 = 10 \times 6$ $39 \times 7 = 30 \times 7 + 9 \times 7$
- **Reasoning:** Solve problems with increasing complexity in range of contexts.

Objective & Strategy	Concrete	Pictorial	Abstract
<p>Divide at least 3 digit numbers by 1 digit.</p> <p>Short Division</p>	<p>$96 \div 3$</p> <p>Tens Units</p> <p>3 2</p>  <p>Use place value counters to divide using the bus stop method alongside</p> <p>$42 \div 3 =$</p> <p>Start with the biggest place value, we are sharing 40 into three groups. We can put 1 ten in each group and we have 1 ten left over.</p> <p>We exchange this ten for ten ones and then share the ones equally among the groups.</p> <p>We look how much in 1 group so the answer is 14.</p>	<p>Students can continue to use drawn diagrams with dots or circles to help them divide numbers into equal groups.</p>  <p>Encourage them to move towards counting in multiples to divide more efficiently.</p>	<p>Begin with divisions that divide equally with no remainder.</p> $\begin{array}{r} 218 \\ 4 \overline{) 872} \end{array}$ <p>Move onto divisions with a remainder.</p> $\begin{array}{r} 86 \text{ r } 2 \\ 5 \overline{) 432} \end{array}$ <p>Finally move into decimal places to divide the total accurately.</p> $\begin{array}{r} 14.6 \\ 35 \overline{) 511.0} \end{array}$ $\begin{array}{r} 0663 \text{ r } 5 \\ 8 \overline{) 5309} \end{array}$

Y4-6

DIVISION ÷

Y4 Key Vocabulary: share, share equally, one each, two each.., group, groups, lots of, array, divide, divided by, divided into, division, grouping, numberline, left, left over, inverse, short division, exchange, multiple divisible by, factor

Key skills for division at Y4:

- Recall all facts up to 12×12 .
- Use place value and derived facts to multiply and divide mentally, including multiplying and dividing by 10, 100 and 1.
- Pupils become fluent in the formal written methods of short division.
- Pupils practise mental methods extending to 3 digits: $200 \times 3 = 600$ so $600 \div 3 = 200$
- **Reasoning:** Solve division problems in context deciding which methods to use and why.