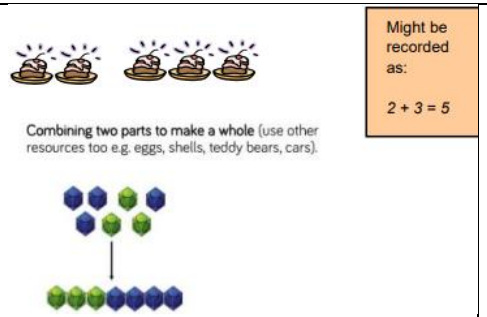
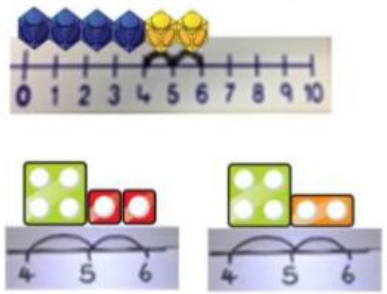
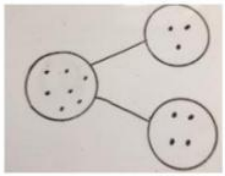
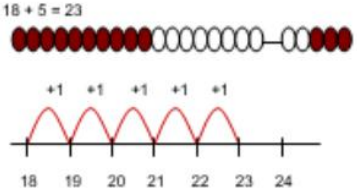
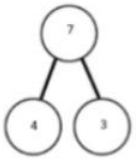
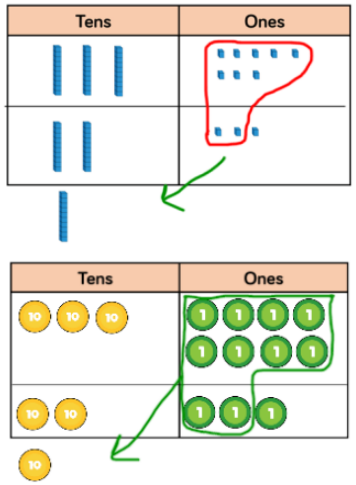
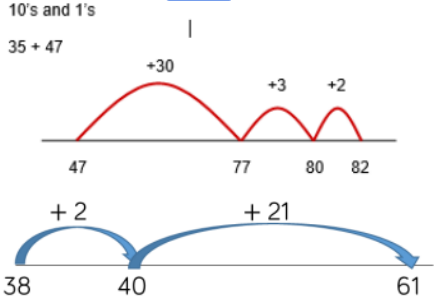
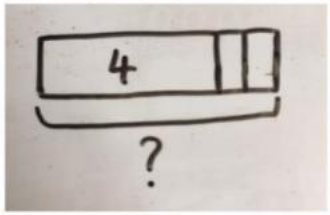
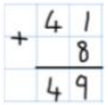
Tintagel Primary School Written Calculation Policy

ADDITION:

	CONCRETE	PICTORIAL	ABSTRACT	MENTALL RECALL	KEY VOCABULARY
Reception *Addition as 'combining 2 groups'*	**EYFS Framework** **ELG:** -Have a deep understanding of number to 10, including the composition of each number -Subitise (recognise quantities without counting) up to 5 -Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts -Verbally count beyond 20, recognising the pattern of the counting system -Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity` -Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally				

		8 people are on the bus. 5 more get on at the next stop. How many people are on the bus now?  [Might be recorded as: 8 + 5 = 13] Use of Numicon to support simple number sentences	Recording their own number sentences with the correct symbols e.g. 5 + 2 = 7 OR 7 = 5 + 2 (This can be done in a number of ways – chalk outside, moving number tiles to make number sentences etc)	1 more (up to 20) Counting up to 20 Number Bonds	add, more, make, sum, total, altogether, double, one more, two more . . . ten more, how many more to make . . .? how many more is . . .than . . .? how much more is . . .?
Year 1 *Addition as 'counting on' □+ □ (bridging 10) □□ +□ (bridging 20)*	**<u>National Curriculum Statutory Requirements</u>** **<u>Pupils should be taught to:</u>** -Read, write and interpret mathematical statements involving addition (+) and equals (=) signs -Represent and use number bonds and related subtraction facts within 20 -Add one-digit and two-digit numbers to 20, including zero -Solve one-step problems that involve addition, using concrete objects and pictorial representations, and missing number problems such as 9 = ? + 7				

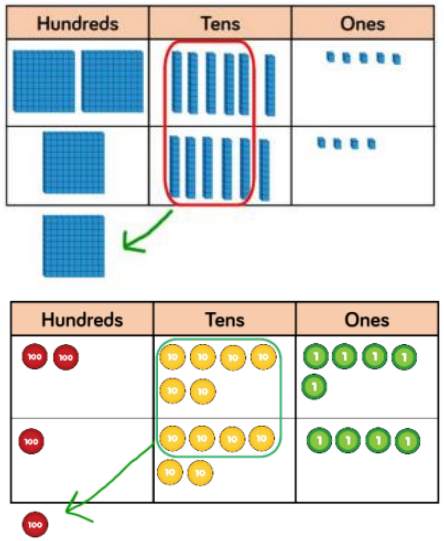
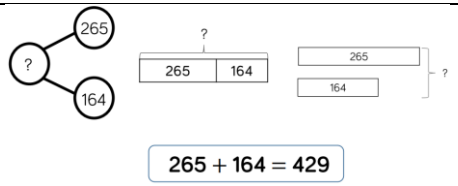
	Counting on using number lines using cubes or Numicon  	Children to represent the cubes using dots or crosses. They could put each part on a part whole model too.  Number line – jumps of 1 (modelled using bead strings) 18 + 5 = 23  	The abstract number line: What is 2 more than 4? What is the sum of 2 and 4? What is the total of 4 and 2? 4 + 2  4 + 3 = 7 Four is a part, 3 is a part and the whole is seven.  No number line 18 + 5 18 + 2 = 20 20 + 3 = 23	Pairs to 20 Facts up to 20 1 / 10 more than a number Derive related facts	number bonds, number line, add, more, plus, make, sum, total, altogether, inverse, double, near double, equals, is the same as (including equals sign) How many more to make..? How many more is…than..? How much more is..?
Year 2 □□ +□□ *(bridging 10s)*	**<u>National Curriculum Statutory Requirements</u>** **<u>Pupils should be taught to:</u>** -Solve problems with addition: -Using concrete objects and pictorial representations, including those involving numbers, quantities and measures -Applying their increasing knowledge of mental and written methods -Recall and use addition facts to 20 fluently, and derive and use related facts up to 100 -Add numbers using concrete objects, pictorial representations, and mentally, including: a two-digit number and ones, a two-digit number and tens, two two-digit numbers, adding three one-digit numbers -Show that addition of two numbers can be done in any order (commutative) -Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems				

	TO + O and TO + TO using base 10 and place value counters – continue to develop understanding of partitioning and place value 	Number line (efficient jumps) (can also make jumps of 10's and 1's 35 + 47  A bar model which encourages the children to count on, rather than count all. 	The abstract number line: What is 2 more than 4? What is the sum of 2 and 4? What is the total of 4 and 2? 4 + 2  No number line 35 + 47 47 + 30 = 77 77 + 3 = 80 80 + 2 = 82 Partitioning and recombining 35 + 47 40 + 30 = 70 7 + 5 = 12 70+12 = 82 41 + 8  1 + 8 = 9 40 + 9 = 49  38 + 23 61 1	Bonds up to 20 Pairs to 100	addition, add, more, and make, sum, total, altogether, commutative, double, near double, one more, two more … ten more … one hundred more, how many more to make …? how many more is … than …? how much more is …?

<table>
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<td rowspan="2">Year 3

□□+□□
(bridging 100)

□□□ +□□ (not bridging 1000)

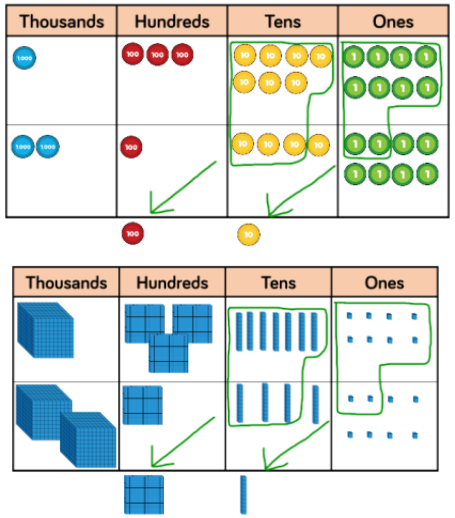
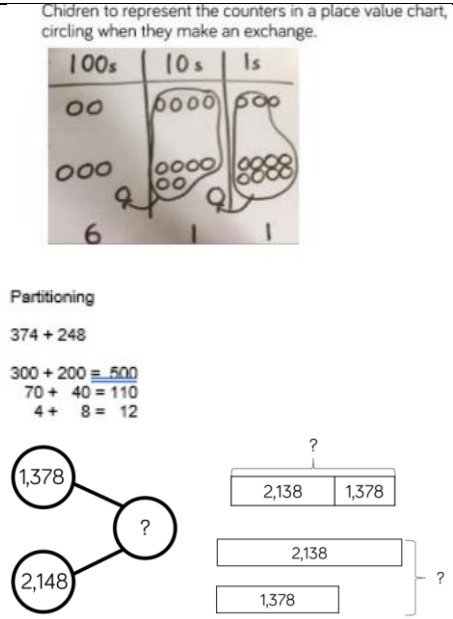
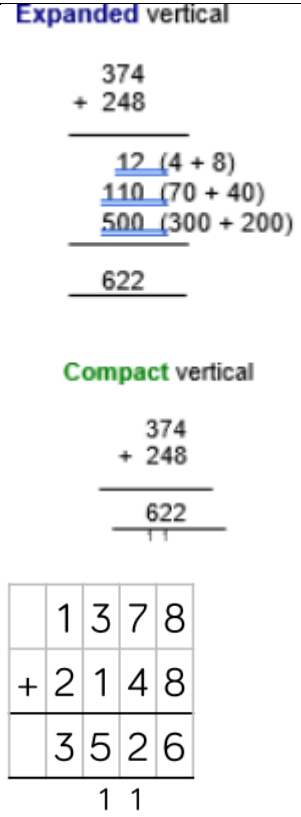
□□□+ □□□ (not bridging 1000)</td>
<td colspan="5"><u>National Curriculum Statutory Requirements</u>
<u>Pupils should be taught to:</u>
-Add numbers mentally, including: a three-digit number and ones, a three-digit number and tens, a three-digit number and hundreds, a three-digit number and thousands
-Add numbers with up to three digits, using –
-Formal written methods of columnar addition
-Estimate the answer to a calculation and use inverse operations to check answers
-Solve problems, including missing number problems, using number facts, place value, and more complex addition</td>
</tr>
<tr>
<td>TO + O, HTO + TO and HTO + HTO using base 10 and place value counters – continue to develop understanding of partitioning and place value

</td>
<td>
</td>
<td>Partitioning
57 + 285
200 + 0 = 200
80 + 50 = 130
5 + 7 = 12

Expanded vertical
336 + 87 = 423
300 and 30 and 6
+ 80 and 7
300 and 110 and 13

Expanded vertical
336
+ 87
13 (6+7)
110 (30+80)
300 (300+0)
423

265
+ 164
429
1</td>
<td>Bonds to 20 / 100
Pairs of two-digit multiples of 10

Multiples of 50 that total 1000</td>
<td>All of the above + expanded column addition, column addition, estimate, nearly, roughly, close to approximate, approximately about the same as just over, just under</td>
</tr>
</table>

Year 4 □□□ +□□ □□□ + □□□ □□□□ + □□□ □□□□ + □□□□ *Decimals: money (£7.85 + £3.49*)	**National Curriculum Statutory Requirements** **Pupils should be taught to:** -Add with up to 4 digits using the formal written methods of columnar addition where appropriate -Estimate and use inverse operations to check answers to a calculation -Solve addition two-step problems in contexts, deciding which operations and methods to use and why				
				Bonds to 1000 Derive sums of pairs of multiples of 10 / 100 / 1000 (Multiples of 50 that total 1000) Pairs of fractions to 1	All of the above + column addition, estimate, nearly roughly, close to approximate, about the same as, just over, just under

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□□□□+□□□□
(and beyond)

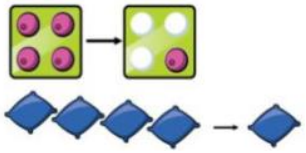
Decimals up to 2dp (23.7 + 48.56)</td><td colspan="5"><u>National Curriculum Statutory Requirements</u>
<u>Pupils should be taught to:</u>
<u>:</u>
-Add whole numbers with more than 4 digits, including using formal written methods (columnar addition)
-Add numbers mentally with increasingly large numbers
-Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy
-Solve addition multi-step problems in contexts, deciding which operations and methods to use and why</td></tr>
<tr><td></td><td>As previous year groups – using place value counters, Base 10, Numicon as necessary</td><td>As previous year groups – use part part whole models, bar models as necessary
Expanded vertical
23.70
+ 48.56
0.06 (0 + 0.06)
1.20 (0.7 + 0.5)
11.00 (3 + 8)
60.00 (20 + 40)
72.26</td><td>Compact vertical
23.70
+ 48.56
72.26
1 1</td><td>(derive) Bonds up to 1 (2dp)

(derive) Bonds up to 10 (1dp)</td><td>All of the above + efficient written method</td></tr>
<tr><td>Year 6

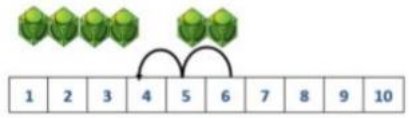
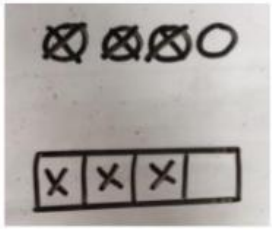
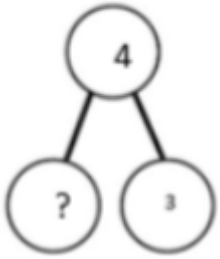
Consolidate / extend Y5 including:
Three numbers
Decimals up to 3dp (context: measures)</td><td colspan="5"><u>Curriculum 2014 Statutory Requirements</u>
<u>Pupils should be taught to:</u>
-Solve addition multi-step problems in contexts, deciding which operations and methods to use and why</td></tr>
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	As previous year groups – using place value counters, Base 10, Numicon as necessary	As above	As above	As above	All of the above + order of operations

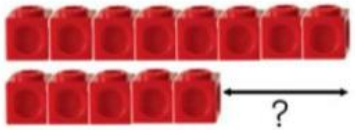
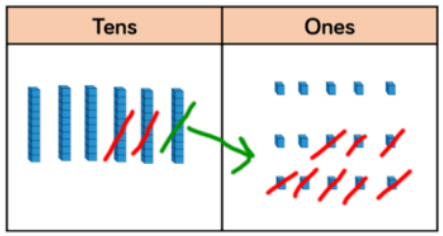
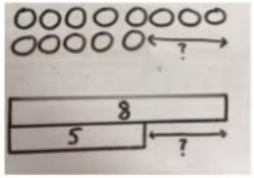
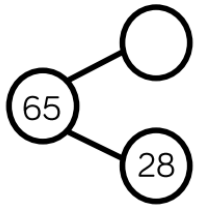
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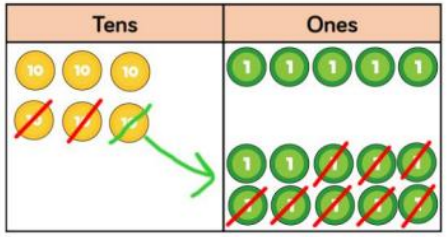
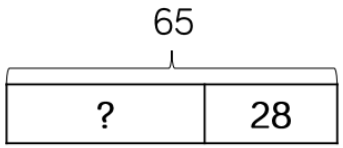
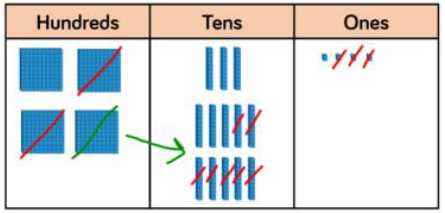
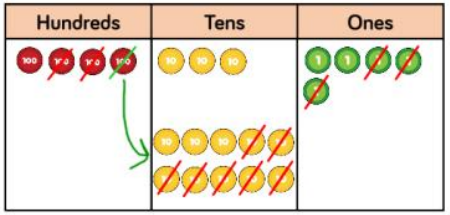
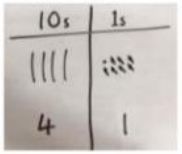
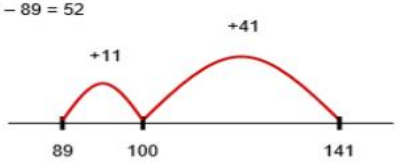
	CONCRETE	PICTORIAL	ABSTRACT	MENTAL RECALL	KEY VOCABULARY
Reception *Subtraction as 'taking away' from a group*	**EYFS Framework 2021** **ELG:** -Have a deep understanding of number to 10, including the composition of each number -Subitise (recognise quantities without counting) up to 5 -Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts -Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity`				
	Pictures / Objects I have five cakes. I eat two of them. How many do I have left?  Physically taking away and removing objects from a whole (ten frames, Numicon, cubes and other items such as beanbags could be used). 4 – 3 = 1 	Symbols Mum baked 9 biscuits. I ate 5. How many were left?  Might be recorded as: 9 – 5 = 4	Recording their own number sentences with the correct symbols e.g. 6 - 4 = 2 OR 2 = 6 - 4 (This can be done in a number of ways – chalk outside, moving number tiles to make number sentences etc)	1 less (numbers up to 20)	take away, how many are left/left over? how many have gone? one less, two less, ten less … how many fewer is … than …? how much less is …? difference between

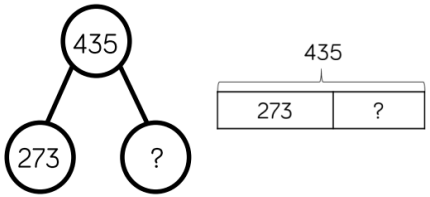
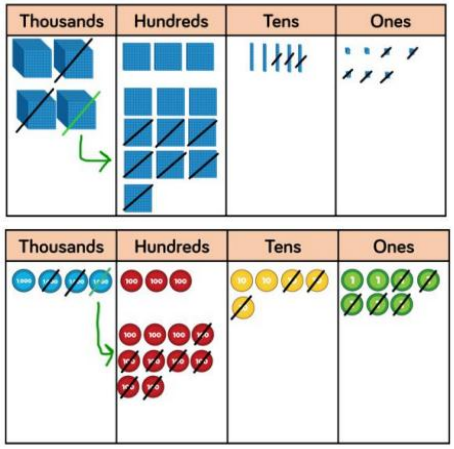
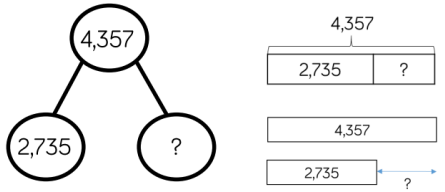
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Subtraction as ‘taking away’ and ‘difference’ (by counting on) □ – □
□□– □
(bridging 10)</td><td colspan="5"><u>Curriculum 2014 Statutory Requirements</u>
<u>Pupils should be taught to:</u>
-Read, write and interpret mathematical statements involving subtraction (-) and equals (=) signs
-Represent and use number bonds and related subtraction facts within 20
-Subtract one-digit and two-digit numbers to 20, including zero -Solve one-step problems that involve subtraction, using concrete objects and pictorial representations, and missing number problems such as 9 = __ - 7</td></tr>
<tr><td>Counting back (using number lines or number tracks) children start with 6 and count back 2.
6 - 2 = 4

</td><td>Children to draw the concrete resources they are using and cross out the correct amount. The bar model can also be used.
</td><td>4 – 3 =

</td><td>Subtraction facts to 10

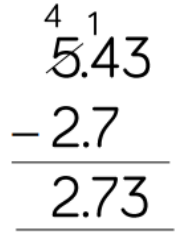
1 / 10 less than a number</td><td>half, halve, equals, is the same as (including equals sign) difference between, how many more to make..? how many more is…than..? how much more is..?</td></tr>
</table>

Year 2 *Subtraction as inverse of addition □□ – □□ (bridging 10s)*	**<u>Curriculum 2014 Statutory Requirements</u>** **<u>Pupils should be taught to:</u>** -Solve problems with subtraction: using concrete objects and pictorial representations, including those involving numbers, quantities and measures -Applying their increasing knowledge of mental and written methods -Recall and use subtraction facts to 20 fluently, and derive and use related facts up to 100 -Subtract numbers using concrete objects, pictorial representations, and mentally, including: a two-digit number and ones, a two-digit number and tens, two two-digit numbers, subtracting three one-digit numbers -Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot -Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems				
	Finding the difference (using cubes, Numicon or Cuisenaire rods, other objects can also be used). Calculate the difference between 8 and 5.   	Children to draw the cubes/other concrete objects which they have used or use the bar model to illustrate what they need to calculate.   	Find the difference between 8 and 5. 8 – 5, the difference is _____ Children to explore why 9 - 6 = 8 – 5 = 7 – 4 have the same difference Partitioning 74 – 27 74 – 20 = 54 54 – 4 = 50 50 – 3 = 47 5 1 6 5 – 2 8 3 7	Subtraction facts to at least 10	subtract, take away, how many are left/left over? how many have gone? one less, two less, ten less … one hundred less, how many fewer is … than …? how much less is …? difference between, equals is the same as, number

					bonds/pairs/facts, tens boundary
Year 3 □□ –□□ □□□– □□ □□□ – □□□	**<u>Curriculum 2014 Statutory Requirements</u>** **<u>Pupils should be taught to:</u>** -Subtract numbers mentally, including: a three-digit number and ones, a three-digit number and tens, a three-digit number and hundreds a three-digit number and thousands -Subtract numbers with up to three digits, using formal written methods -Estimate the answer to a calculation and use inverse operations to check answers -Solve problems, including missing number problems, using number facts, place value, and more complex subtraction				
	Column strategy using base 10/place value counters 435 – 237 = 262  	Children to represent the base 10 pictorially.  Number line – **counting on for small differences** 141 – 89 = 52 	Partitioning 272 – 48 272 - 40 = 232 232 - 8 = 224 3 1 435 – 273 262	Subtraction facts to 20 Differences of multiples of 10	All of the above + expanded column subtraction, exchanging

					
Year 4 □□□ – □□ □□□ – □□□ *Decimals: money (£7.85 - £3.49)*	**<u>Curriculum 2014 Statutory Requirements</u>** **<u>Pupils should be taught to:</u>** -Subtract with up to 4 digits using the formal written methods of columnar subtraction where appropriate -Estimate and use inverse operations to check answers to a calculation -Solve subtraction two-step problems in contexts, deciding which operations and methods to use and why				
	Column strategy using base 10/place value counters 4357 – 2735 = 1622 	Represent the base 10 pictorially, remembering to show the exchange.  	$\begin{array}{r} {}^{3}\not{4}\,{}^{1}\not{3}57 \\ -\ 2735 \\ \hline 1622 \end{array}$	Derive differences of pairs of multiples of 10 / 100 / 1000	All of the above + Compact column subtraction, decomposition, inverse operation

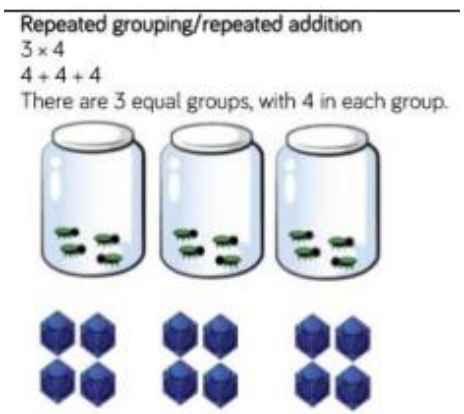
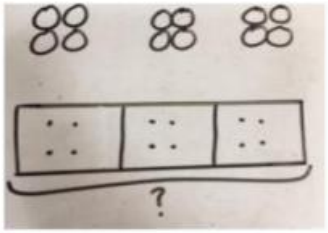
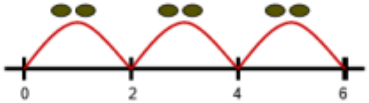
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<tr><td>Year 5

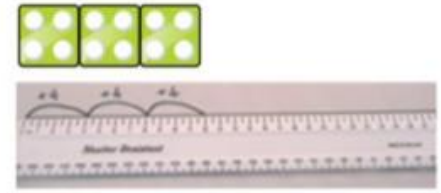
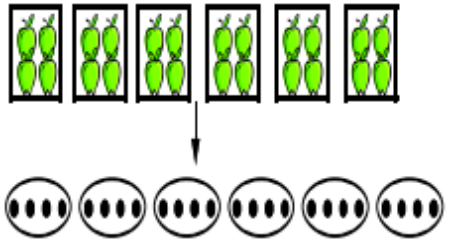
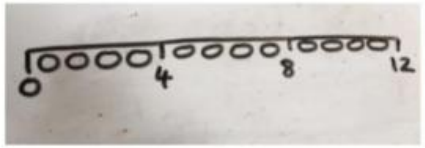
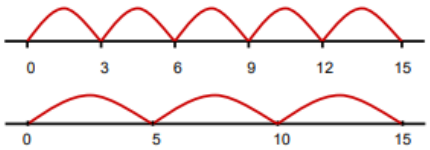
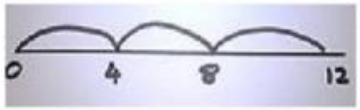
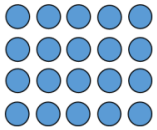
□□□□ – □□□□
Decimals up to 2dp (72.5 – 45.7)</td><td colspan="5"><u>Curriculum 2014 Statutory Requirements</u>
<u>Pupils should be taught to:</u>
-Subtract whole numbers with more than 4 digits, including using formal written methods (columnar subtraction)
-Subtract numbers mentally with increasingly large numbers
-Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy
-Solve subtraction multi-step problems in contexts, deciding which operations and methods to use and why</td></tr>
<tr><td></td><td>As previous year groups – using place value counters, Base 10, Numicon as necessary</td><td>As above</td><td>As above and compact strategy with decimal numbers as below
</td><td>Use number facts for mental subtraction 9 – 2 = 7 0.9 – 0.2 = 0.7 0.09 – 0.02 = 0.07</td><td>All of the above + efficient written method</td></tr>
<tr><td>Year 6

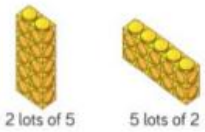
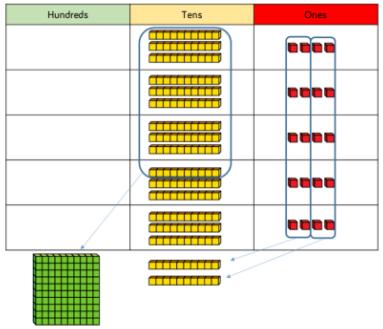
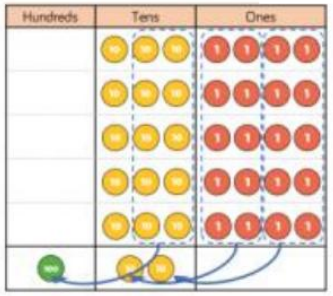
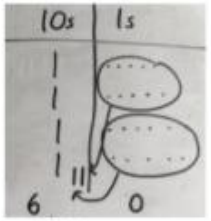
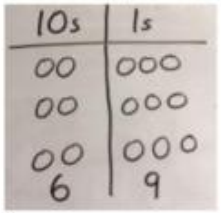
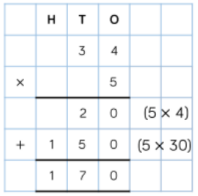
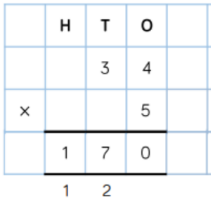
Consolidate / extend Y5 including: Decimal to 3 dp relating to measures</td><td colspan="5"><u>Curriculum 2014 Statutory Requirements</u>
<u>Pupils should be taught to:</u>
-Solve subtraction multi-step problems in contexts, deciding which operations and methods to use and why</td></tr>
<tr><td></td><td>As previous year groups – using place value counters, Base 10, Numicon as necessary</td><td>As above</td><td>As above
Recognise when one written method is more efficient
➢ There was 2.5 litres in the jug. Stuart drank 385 ml. How much was left?
➢ 18.07 km – 3.243 km</td><td>As above</td><td>All of the above + Order of operations</td></tr>
</table>

MULTIPLICATION:

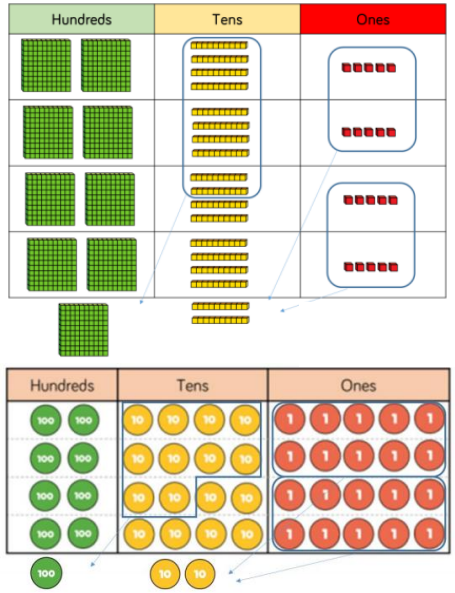
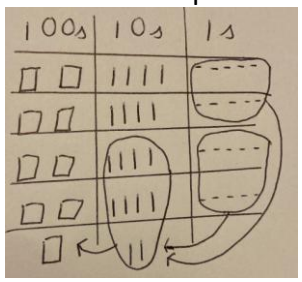
	CONCRETE	PICTORIAL	ABSTRACT	MENTAL RECALL	KEY VOCABULARY
Reception *Count repeated groups of the same size (1s / 2s / 5s / 10s)*	**EYFS Framework 2021** **ELG:** -Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts -Verbally count beyond 20, recognising the pattern of the counting system -Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally				
	Pictures / Objects 3 plates, 2 cakes on each plate: 	Symbols 3 plates, 2 cakes on each plate: 	Repeated addition: 2 + 2 + 2 = 6	Counting on in 1s and 2s	doubling, groups of, lots of
Year 1 *Solve (practical) problems*	**Curriculum 2014 Statutory Requirements** **Pupils should be taught to:** -Solve one-step problems involving multiplication, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher				

	Pictures / Symbols There are three sweets in one bag. How many sweets are there in five bags?   Repeated grouping/repeated addition 3 × 4 4 + 4 + 4 There are 3 equal groups, with 4 in each group.	Children to represent the practical resources in a picture and use a bar model.  Number line (modelled using bead strings) 2 x 3 or 3 x 2 [two, three times] or [three groups of two]  	$3 \times 4 = 12$ $4 + 4 + 4 = 12$	Count on in 1s, 2s, 5s and 10s Doubles of numbers to 20	Multiplication, multiply, multiplied by, multiple, division, dividing, grouping, odd, even, count in twos, threes, fives, count in tens (forwards from/backwards from) How many times? lots of, groups of, once, twice, three times, five times, multiple of, times, multiply, multiply by
Year 2 *Multiplication as repeated addition and arrays*	**<u>Curriculum 2014 Statutory Requirements</u>** **<u>Pupils should be taught to:</u>** -Recall and use multiplication facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers -Calculate mathematical statements for multiplication within the multiplication tables and write them using the multiplication (×) and equals (=) signs -Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot -Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts				

	Number lines to show repeated groups- 3 × 4  Cuisenaire rods can be used too. Pictures / Symbols There are four apples in each box. How many apples in six boxes? 	Represent this pictorially alongside a number line e.g.:  Repeated addition 5 x 3 or 3 x 5 	Abstract number line showing three jumps of four. 3 × 4 = 12  Arrays  5 + 5 + 5 + 5 = 20 4 × 5 = 20 5 × 4 = 20	Count in 2s, 5s and 10s Derive multiples of 2, 5 & 10 Relate to x facts (and derive related ÷ facts) Doubles of numbers to 100	Count in twos, threes, fives Count in tens (forwards from/backwards from) How many times? lots of, groups of, once, twice, three times, five times multiple of, times, multiply, multiply by, repeated addition, array, row, column, double
Year 3 □□*x* □ *(e.g. 13 x 4)*	**<u>Curriculum 2014 Statutory Requirements</u>** **<u>Pupils should be taught to:</u>** -Recall and use multiplication facts for the 3, 4 and 8 multiplication tables -Write and calculate mathematical statements for multiplication using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to written methods -Solve problems involving missing number problems involving multiplication including positive number scaling problems and correspondence problems where n objects are connected to m objects				

	Use arrays to illustrate commutativity counters and other objects can also be used. $2 \times 5 = 5 \times 2$    	Arrays – represent pictorally 13 x 4  10 x 4 = 40 3 x 4 = 12 Children to represent the concrete manipulatives pictorially.  Children to represent the counters pictorially.  	Partitioning (possible use of number line to record steps) 13 x 4 = 52 10 x 4 = 40 3 x 4 = 12 **Compact** grid method 13 x 4    	Derive / recall 2, 3, 4, 5, 6, 8 and 10 times tables (Derive related division facts) Recognise multiples of 2, 5 and 10 up to 1000	All of the above + product, multiples of four, eight, fifty and one hundred, scale up

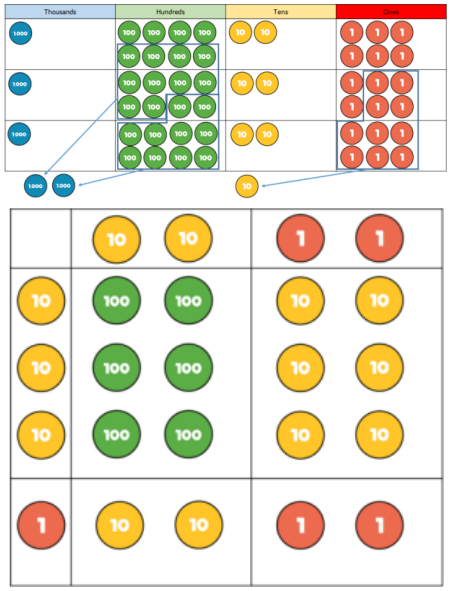
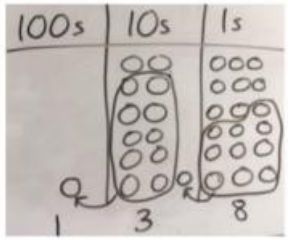
<table>
<tr>
<td rowspan="2">Year 4

Record, support and explain:
□□x □
□□□ x □</td>
<td colspan="5"><u>Curriculum 2014 Statutory Requirements</u>
<u>Pupils should be taught to:</u>
-Recall and use multiplication facts for multiplication tables up to 12 x 12
-Use place value, known and derived facts to multiply mentally, including: x0 x1 and multiplying together three numbers
-Recognise and use factor pairs and commutativity in mental calculations
-Multiply two-digit and three-digit numbers by a one-digit number using formal written layout
-Solve problems involving multiplying, including the distributive law to multiply two-digit numbers by one digit including positive number scaling problems and correspondence problems where n objects are connected to m objects</td>
</tr>
<tr>
<td>
</td>
<td>Children to represent the concrete manipulatives pictorially

</td>
<td>Compact grid method
43 x 6
<table>
<tr><td>X</td><td>40</td><td>3</td></tr>
<tr><td>6</td><td>240</td><td>18</td></tr>
</table>
Expanded vertical
43
x 6
18 (3 x 6)
240 (40 x 6)
258
Compact vertical
43
x 6
258
1
<table>
<tr><td></td><td>H</td><td>T</td><td>O</td></tr>
<tr><td></td><td>2</td><td>4</td><td>5</td></tr>
<tr><td>×</td><td></td><td></td><td>4</td></tr>
<tr><td></td><td>9</td><td>8</td><td>0</td></tr>
</table>
1 2</td>
<td>Derive / recall facts to 12 x 12

Multiples of numbers to 12 up to the 12th multiple</td>
<td>All of the above +

multiple, factor, multiplication facts (up to 12x12) inverse, derive</td>
</tr>
</table>

<table>
<tr>
<td>Year 5

Refine and use efficient methods:
□□□ x □
□□□□ x □
□□ x □□
□.□ x □</td>
<td colspan="5"><u>Curriculum 2014 Statutory Requirements</u>
<u>Pupils should be taught to:</u>
-Identify multiples and factors: all factor pairs of a number, common factors of two numbers, establish whether a number up to 100 is prime and recall prime numbers up to 19
-Multiply numbers up to four digits by a one- or two-digit number using a formal written method
-Multiply whole numbers and those involving decimals by 10, 100 and 1000</td>
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<tr>
<td></td>
<td>
</td>
<td>Children to represent the counters/base 10, pictorially e.g. the image below.


Grid method

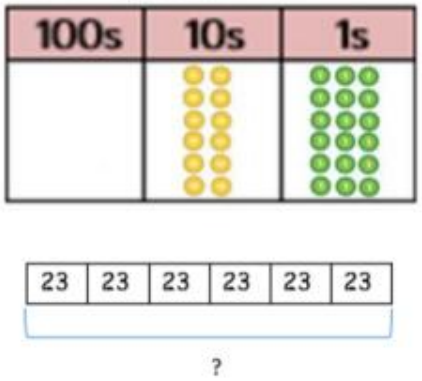
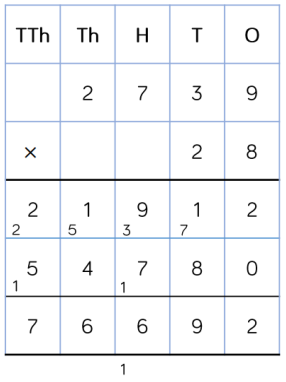
47 × 36
(estimate: 50 × 40 = 2000)
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<tr><td>×</td><td>40</td><td>7</td><td></td></tr>
<tr><td>30</td><td>1200</td><td>210</td><td>1410</td></tr>
<tr><td>6</td><td>240</td><td>42</td><td>282</td></tr>
<tr><td></td><td></td><td></td><td>1692</td></tr>
</table></td>
<td><table>
<tr><td></td><td>H</td><td>T</td><td>O</td></tr>
<tr><td></td><td></td><td>2</td><td>2</td></tr>
<tr><td>×</td><td></td><td>3</td><td>1</td></tr>
<tr><td></td><td></td><td>2</td><td>2</td></tr>
<tr><td></td><td>6</td><td>6</td><td>0</td></tr>
<tr><td></td><td>6</td><td>8</td><td>2</td></tr>
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<table>
<tr><td>Th</td><td>H</td><td>T</td><td>O</td></tr>
<tr><td></td><td>2</td><td>3</td><td>4</td></tr>
<tr><td>×</td><td></td><td>3</td><td>2</td></tr>
<tr><td></td><td>4</td><td>6</td><td>8</td></tr>
<tr><td>1 7</td><td>1 0</td><td>2</td><td>0</td></tr>
<tr><td>7</td><td>4</td><td>8</td><td>8</td></tr>
</table></td>
<td>Recall quickly facts to 12 x 12

Use facts to multiply pairs of multiples of 10 / 100

Use known facts to derive other facts [Find common multiples of two numbers]</td>
<td>All of the above +

factor pairs, composite numbers, prime number, prime factors, square number, cubed number, formal written method</td>
</tr>
</table>

<table>
<tr><td rowspan="2">Year 6

Use efficient methods:
Integer x Ones (eg 2307 x 8)
Decimal x Ones (eg 31.6 x 7)
TO x TO
HTO x TO
ThHTO x TO</td><td colspan="5"><u>Curriculum 2014 Statutory Requirements</u>
<u>Pupils should be taught to:</u>
-Identify multi-digit numbers up to 4 digits by a two-digit number using formal, long multiplication
-Identify common factors, common multiples and common prime numbers -Use their knowledge of the order of operations to carry out calculations involving the four operations</td></tr>
<tr><td>As previous year groups – using place value counters, Base 10, Numicon as necessary</td><td>What is the calculation?
What is the product?

</td><td>Compact vertical
4.7 × 8
(estimate: 5 × 8 = 40)
4.7
× 8
37.6
5

</td><td>Use facts up to 12 x 12 to derive facts involving multiples of 10 / 100 (e.g. 80 x 30) and decimals (e.g. 0.8 x 7)

Derive squares of numbers to 12 x 12

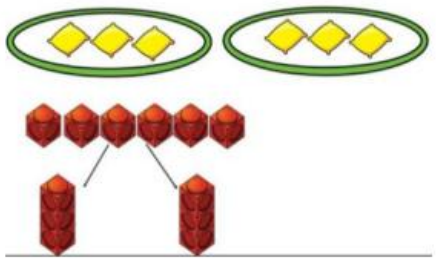
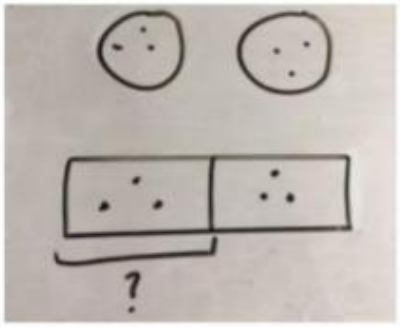
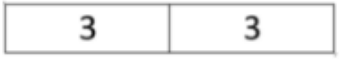
Derive corresponding squares of multiples of 10</td><td>All of the above +

Order of operations, common factors, common multiples</td></tr>
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DIVISION:

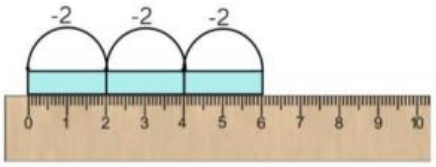
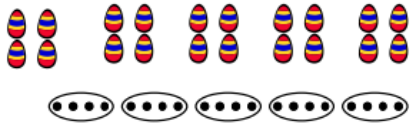
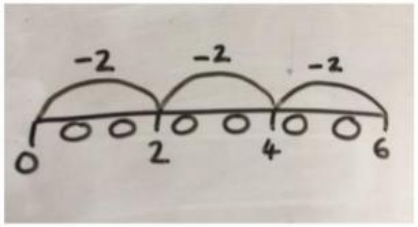
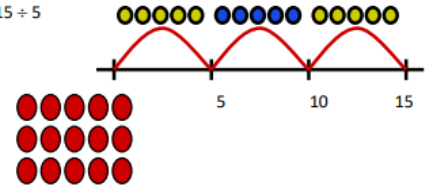
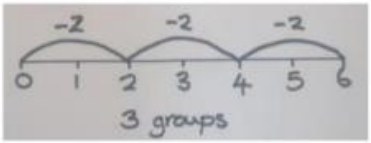
	CONCRETE	PICTORIAL	ABSTRACT	MENTAL RECALL	KEY VOCABULARY
Reception *Share objects into equal groups and count how many in each group*	**EYFS Framework 2021** **ELG:** -Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally				
	Pictures / Objects 6 cakes  shared between 2  6 cakes put into groups of 2 	Symbols 6 cakes shared between 2  6 cakes put into groups of 2 			sharing, halving

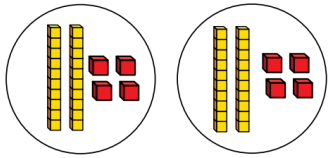
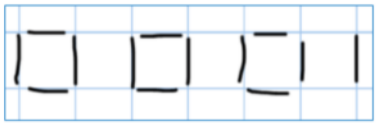
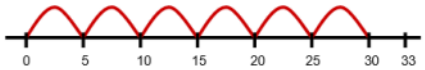
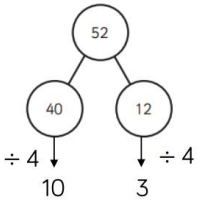
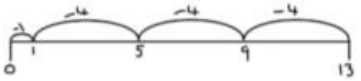
<table>
<tr><td>Year 1

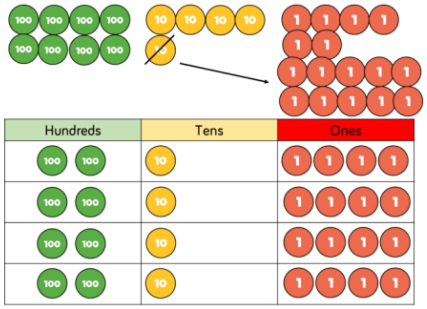
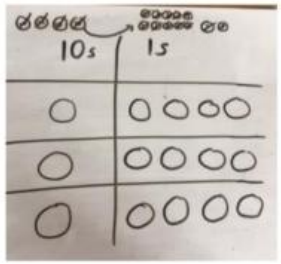
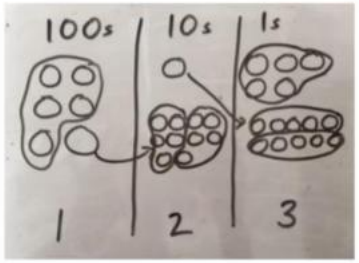
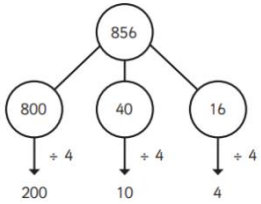
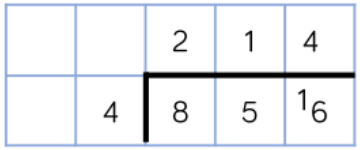
Solve (practical) problems that involve sharing into equal groups</td><td colspan="5"><u>Curriculum 2014 Statutory Requirements</u>
<u>Pupils should be taught to:</u>
-Solve one-step problems involving division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher</td></tr>
<tr><td></td><td>Sharing using a range of objects.
6 ÷ 2
</td><td>Represent the sharing pictorially.
</td><td>6 ÷ 2 = 3

Children should also be encouraged to use their 2 times tables facts.</td><td></td><td>division, dividing, grouping, sharing, halving, array, number patterns</td></tr>
<tr><td>Year 2

Division as sharing and grouping (including remainders)

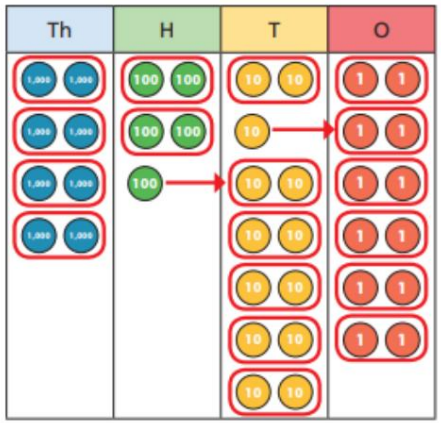
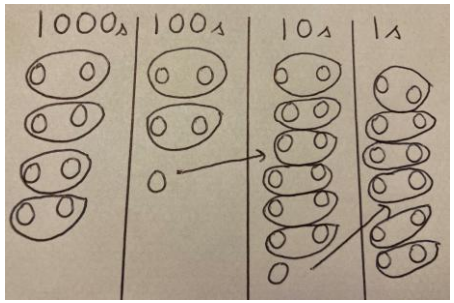
□□ ÷ □</td><td colspan="5"><u>Curriculum 2014 Statutory Requirements</u>
<u>Pupils should be taught to:</u>
-Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers
-Calculate mathematical statements for division within the multiplication tables and write them using the signs ÷ and =
-Show that multiplication of two numbers is commutative but division is not
-Solve problems involving division using materials, arrays, repeated addition, mental methods and division facts, including problems in contexts</td></tr>
</table>

(where divisor is 2, 5 or 10)	**Repeated subtraction** using Cuisenaire rods above a ruler. 6 ÷ 2  3 groups of 2 Pictures / Symbols Four eggs fit in a box. How many boxes would you need to pack 20 eggs? 	Children to represent repeated subtraction pictorially.  Number lines / Arrays 15 ÷ 5  	Partitioning 28 ÷ 2 20 ÷ 2 = 10 8 ÷ 2 = 4 Abstract number line to represent the equal groups that have been subtracted.  	Derive / recall ÷ facts for 2, 5 and 10 tables Derive / recall halves of even numbers to 40	division, dividing, divide, divided by, divided into, grouping, sharing, share, share equally, left, left over, one each, two each, three each … ten each, group in pairs, threes … tens, equal groups of
Year 3 □□ ÷ □ (where divisor is 2, 3, 4, 5, 6, 8 or 10) Round remainders up / down,	**<u>Curriculum 2014 Statutory Requirements</u>** **<u>Pupils should be taught to:</u>** -Recall and use multiplication and division facts for the 3, 4 and 8 x tables -Write and calculate mathematical statements for division using the multiplication tables they know, including 2-digit divided by 1-digit using mental and progressing to formal written methods -Solve problems, involving missing number problems, involving division, including positive number scaling problems and correspondence problems where n objects are connected to m objects				

depending on the context	**2d ÷ 1d with remainders** using lollipop sticks. Cuisenaire rods, above a ruler can also be used. 13 ÷ 4 Use of lollipop sticks to form wholes- squares are made because we are dividing by 4.  There are 3 whole squares, with 1 left over. 	Children to represent the lollipop sticks pictorially.  Number lines (start from zero) 33 ÷ 5 = 6 r3  Partitioning (multiples of the divisor)  10 + 3 = 13	13 ÷ 4 = 3 remainder 1 Children should be encouraged to use their times table facts; they could also represent repeated addition on a number line. '3 groups of 4, with 1 left over'  Partitioning (multiples of the divisor) 50 ÷ 4 = 12 r2 10 x 4 = 40 2 x 4 = 8 (48)	Derive / recall ÷ facts for 2, 3, 4, 5, 6, 8 and 10 tables	All of the above + remainder, row, column, division facts
Year 4 Record, support and explain:	**<u>Curriculum 2014 Statutory Requirements</u>** **<u>Pupils should be taught to:</u>** -recall multiplication and division facts up to 12 x 12 use place value, known and derived facts to divide mentally, including dividing by 1 -solve problems involving dividing a three-digit number by one-digit and number using a formal layout				

□□ ÷ □ □□□ ÷ □	Sharing using concrete resources   	Children to represent the place value counters pictorially.  Represent the place value counters pictorially.  Partitioning (multiples of the divisor)  856 ÷ 4 = 214 800 ÷ 4 = 200 40 ÷ 4 = 10 16 ÷ 4 = 4	Short division  	Derive / recall ÷ facts up to the 12 times table	All of the above + inverse, derive

<table>
<tr><td>Year 5

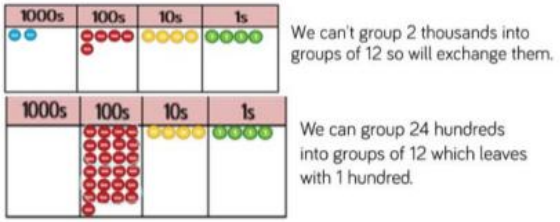
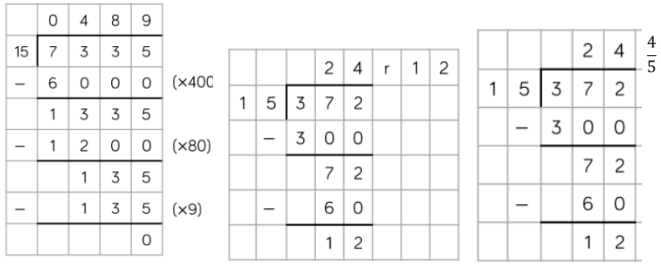
Refine and use efficient methods:
□□□ ÷ □
□□□□ ÷ □</td><td colspan="5"><u>Curriculum 2014 Statutory Requirements</u>
<u>Pupils should be taught to:</u>
-Identify multiples and factors, including finding all factor pairs of a number, common factors of two numbers, know and use the vocabulary of prime numbers and establish whether a number up to 100 is prime
-Multiply and divide numbers mentally drawing on known facts
-Divide numbers up to 4 digits by a one-digit number using a written method and interpret remainders appropriately for the context
-Divide whole numbers and those involving decimals by 10, 100 and 1000</td></tr>
<tr><td></td><td>Sharing using concrete resources as above with 3 digit numbers and below with 4 digit numbers

</td><td>Represent place value counters pictorially as above with 3 digit numbers and below with 4 digit numbers


a</td><td>Short division

</td><td>Recall quickly ÷ facts up to 12 times table</td><td>All of the above +

square, squared, cube, cubed, factor pairs, composite numbers, prime number, prime factors</td></tr>
</table>

<table>
<tr><td>Year 6

Use efficient methods:
Integer ÷ □
(e.g. 123 ÷7)
Decimal ÷□
(e.g. 27.6 ÷8)
□□□ ÷ □□
□□□□ ÷ □□</td><td colspan="4">Curriculum 2014 Statutory Requirements
Pupils should be taught to:
-Divide numbers up to 4 digits by a two-digit 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
-Divide numbers up to 4 digits by a two-digit number using the formal written method of short division as appropriate</td></tr>
<tr><td></td><td>Long division using place value counters
2544 ÷ 12

</td><td>'Short' division
43 .4 ÷ 7
(estimate: 42 ÷ 7 = 6)
6 .2
7 43 .'4
Long division

</td><td>Partitioning
43.4 ÷ 7 = 6.2
6 x 7 = 42
0.2 x 7 = 1.4 (43.4)</td><td>Derive ÷ facts involving multiples of 10 / 100 (e.g. 240 ÷ 30) and decimals (e.g. 4.8 ÷ 6)</td><td>All of the above +

order of operations, common factors, common multiples</td></tr>
</table>