Respect, Motivation, Cooperation, Kindness, Pride, Perseverance

Bromesberrow St Mary's C of E (VA) Primary School and Preschool

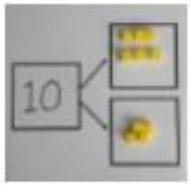
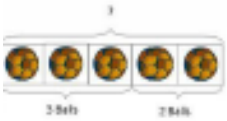
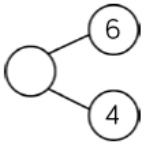
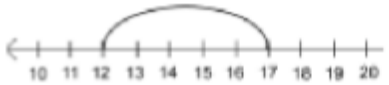
Calculation Policy

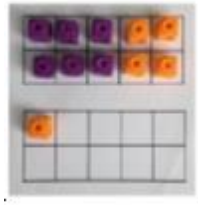
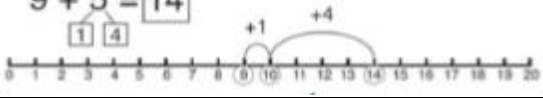
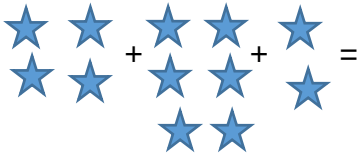
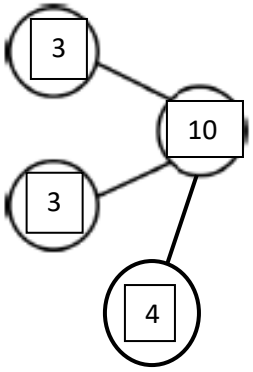
November 2025
Review: 2026

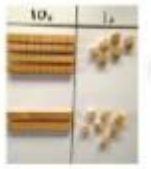
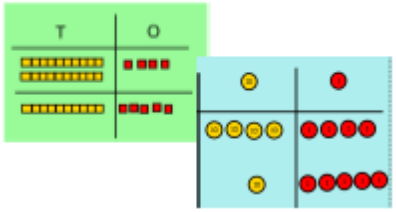
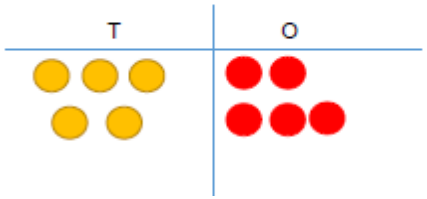
At Bromesberrow St Mary's Primary school, we believe that all children are capable of doing and understanding mathematics with the right teaching and support. Through building a 'can do' attitude, with high-quality teaching, resources and effort; all children can enjoy and achieve within maths. Throughout our school, we are driven to provide children with the key concepts and building blocks to be brilliant and aspirational mathematicians.

At Bromesberrow, Mastery is the 'knowing' and 'understanding' of key concepts combined; it is not just about being able to answer questions quickly and accurately. Mastery is knowing why and how and being able to select the most appropriate methods for them. All of our children are provided with these examples during their teacher input whilst following a sequence of **concrete, pictorial and abstract questioning and learning** (outlined within this calculation policy), which are appropriate to their learning need and to enhance their fluency, reasoning and problem solving learning. We aim to see our children being able to use their knowledge appropriately, flexibly and creatively; applying their knowledge to new and unfamiliar situations.

Below is the schools calculation policy, including examples of concrete, pictorial and abstract questions.

Objective and strategies Addition.	Concrete	Pictorial	Abstract
Combining two parts to make a whole: part-whole model. Reception/ year 1 and year 2.	    Use cubes to add two numbers together as a group or a bar.	   Use pictures to add two numbers together in a group or in a bar.	4 + 3 = 7 10 = 6 + 4  Use the part-part whole diagram as shown above to move into the abstract.
Starting at the larger number and counting on. Year 1 and Year 2.	 Start with the larger number on the bead string and then count on to the smaller number 1 by 1 to find the answer.	12 + 5 = 17  Start at the larger number on the number line and count on in ones or in one jump to find the answer.	5 + 12 = 17 Place the larger number in your head and count on the smaller number to find your answer.

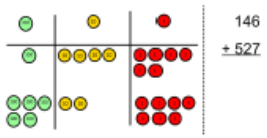
Regrouping to make 10. Year 2.	6 + 5 = 11  Use the bigger number and then the smaller number to make 10. e.g. recognise number bonds to 10 to support.	 3 + 9 = Use pictures or a number line. Regroup or partition the smaller number to make 10. 9 + 5 = 14 1 4 +1 +4 	7 + 4= 11 If I am at seven, how many more do I need to make 10. How many more do I add on now?
Adding three single digit numbers. Year 1 and Year 2.	4 + 7 + 6= 17 Put 4 and 6 together to make 10. Add on 7.  Following on from making 10, make 10 with 2 of the digits (if possible) then add on the third digit.	 Add together three groups of objects. Draw a picture to recombine the groups to make 10 then add on.	4 + 6 + 2 = 4 + 6 = 10 10 + 2 = 12 

			Combine the two numbers to make 10 and count on the final digit.
Adding two 2 digit numbers mentally with resources to support. Year 2 and Year 3.	46 + 27 = 	 46 + 27=	Using number bonds and facts to add two 2 digit numbers mentally 46 + 27= 40 + 20 = 60 6 + 7 = 13 60 + 13 = 73 OR 46 + 20 = 66 67 + 7 = 73
Column method – no regrouping Year 3/4/5/6 Using same methods with numbers of different digits depending on year group objective.	24 + 15= Add together the ones first then add the tens. Use the Base 10 blocks first before moving onto place value counters. 	After practically using the base 10 blocks and place value counters, children can draw the counters to help them to solve additions. 	Calculations 21 + 42 = 21 + 42

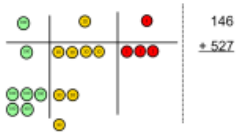
Column method – regrouping.
Year 3/4/5/6

Using same methods with numbers of different digits depending on year group objective.

Make both numbers on a place value grid.

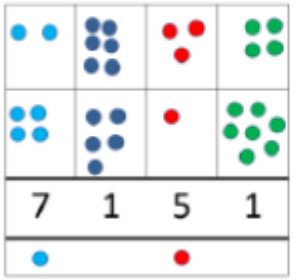


Add up the units and exchange 10 ones for one 10.



Add up the rest of the columns, exchanging the 10 counters from one column to the next place value column until every column has been added.

Children can draw a pictoral representation of the columns and place value counters to further support their learning and understanding.



Start by partitioning the numbers before moving on to clearly show the exchange below the addition.

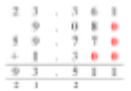
$$\begin{array}{rcrl} 20 & + & 5 & \\ 40 & + & 8 & \\ \hline 60 & + & 13 & = 73 \end{array}$$

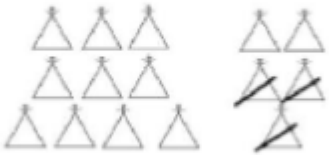
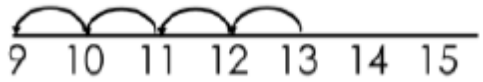
$$\begin{array}{r} 536 \\ +\ 85 \\ \hline 621 \\ \ 1\ 1 \end{array}$$

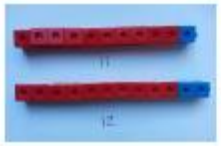
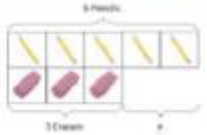
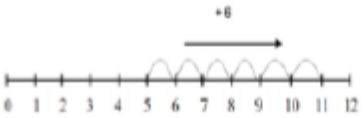
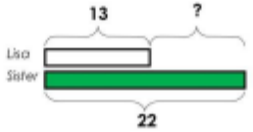
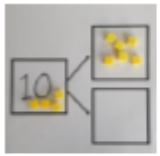
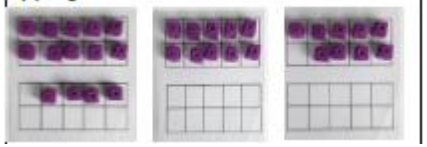
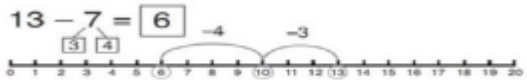
As the children move on introduce decimals with the same number of decimal places and different. Money can be used here.

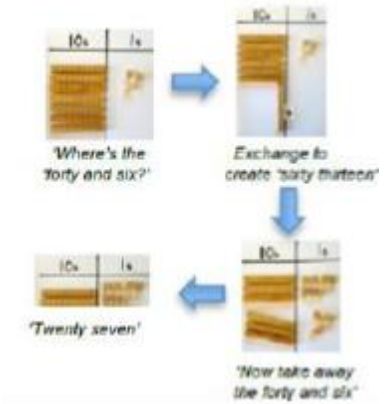
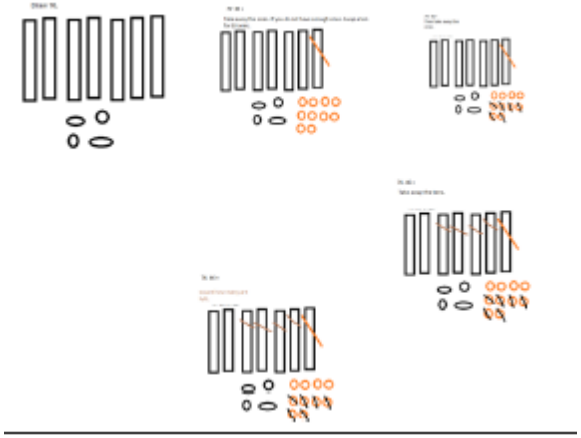
$$\begin{array}{r} 72.8 \\ +\ 54.6 \\ \hline 127.4 \\ 1\ 1 \end{array}$$

$$\begin{array}{r} £23.59 \\ +\ £\ 7.55 \\ \hline £31.14 \\ \ \ 1\ 1\ \ 1 \end{array}$$



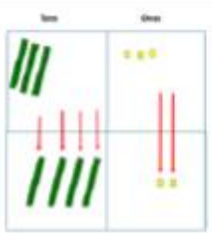
Objective and Strategies. Subtraction.	Concrete	Pictorial	Abstract
Taking away ones. Reception/ Year 1	Use physical objects, counters, cubes etc to show how objects can be taken away.  6 – 2 = 4 	Cross out drawn objects to show what has been taken away.  15 – 3 = 12	18 -3= 15 8 – 2 = 6
Counting back. Year 1 and Year 2.	Make the larger number in your subtraction. Move the beads along your bead string as you count backwards in ones.  13 – 4 Use counters and move them away from the group as you take them away counting backwards as you go. 	Count back on a number line or number track  9 10 11 12 13 14 15 Start at the bigger number and count back the smaller number showing the jumps on the number line.  -10 -10 -1 -1 -1 34 35 36 37 47 57 This can progress all the way to counting back using two 2 digit numbers.	Put 13 in your head, count back 4. What number are you at? Use your fingers to help.

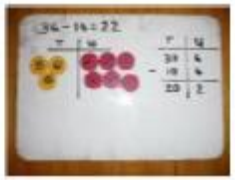
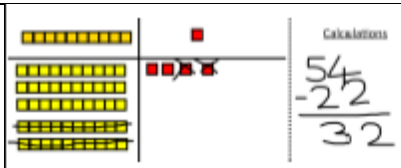
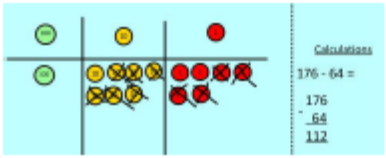
Counting on to find the difference. Year 1 and Year 2.	Compare amounts and objects to find the difference.  Use cubes to build towers or make bars to find the difference  Use basic bar models with items to find the difference	 Count on to find the difference. **Comparison Bar Models** Draw bars to find the difference between 2 numbers. *Lisa is 13 years old. Her sister is 22 years old. Find the difference in age between them.*  	Hannah has 23 sandwiches, Helen has 15 sandwiches. Find the difference between the number of sandwiches.
Part part whole model. Year 1 and Year 2.	 Link to addition- use the part whole model to help explain the inverse between addition and subtraction. If 10 is the whole and 6 is one of the parts. What is the other part? 10 - 6 =	Use a pictorial representation of objects to show the part part whole model. 	 Move to using numbers within the part whole model. 10 -5 =
Make 10 Year 2	14 – 9 = 	 Start at 13. Take away 3 to reach 10. Then take away the remaining 4 so you have taken away 7 altogether. You have reached your answer.	16 – 8= How many do we take off to reach the next 10? How many do we have left to take off?

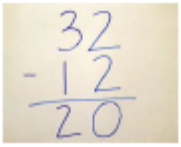
	Make 14 on the ten frame. Take away the four first to make 10 and then takeaway one more so you have taken away 5. You are left with the answer of 9.		
Subtracting two 2 digit numbers no regrouping. Year 2	 54- 22 = Make first number with base 10. Look at the second number. Take away the ones. Take away the 10s. How many left?	Repeat but with drawing rather than concrete apparatus. 	54- 22 = 54- 20 = 34 34- 2 = 32
Subtracting two 2-digit number with regrouping. Year 2 and Year 3.	Taking away and exchanging, 73 – 46  	Repeat but with drawing. 	Subtract mentally. 

<table>
<tr>
<td>Column method without regrouping

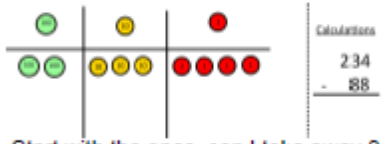
Year 3/4/5/6

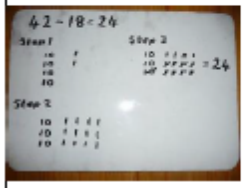
Using same methods with numbers of different digits depending on year group objective.</td>
<td> 
Use Base 10 to make the bigger number then take the smaller number away.

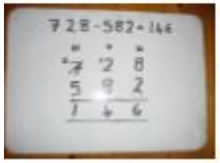
Show how you partition numbers to subtract. Again make the larger number first.
  </td>
<td> 
Draw the Base 10 or place value counters alongside the written calculation to help to show working.
  </td>
<td>47 − 24 = 23
40 + 7
− 20 + 4
20 + 3

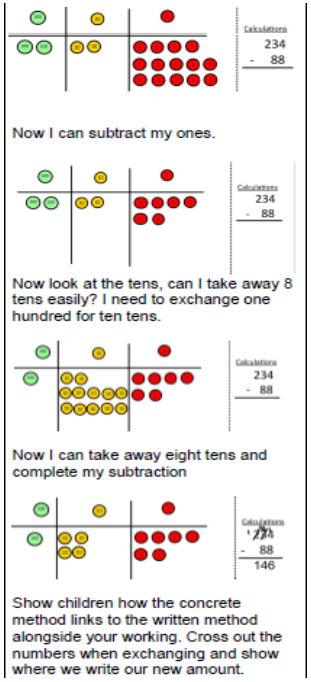
This will lead to a clear written column subtraction.
  </td>
</tr>
<tr>
<td>Column method with regrouping.
Year 3/4/5/6

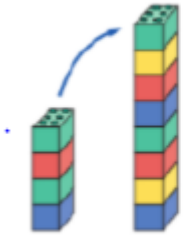
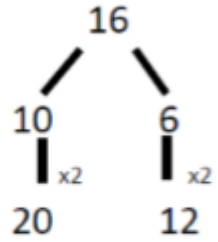
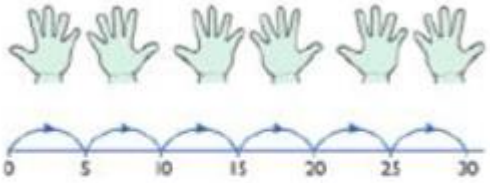
Using same methods with numbers of different digits depending on year group objective.</td>
<td>Use Base 10 to start with before moving on to place value counters. Start with one exchange before moving onto subtractions with 2 exchanges.

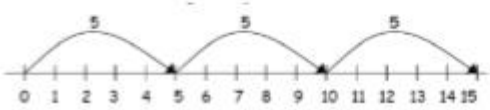
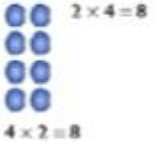
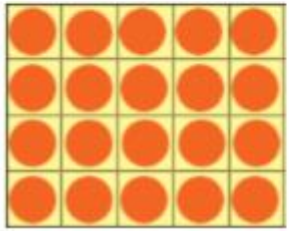
Make the larger number with the place value counters
 
Start with the ones, can I take away 8 from 4 easily? I need to exchange one of my tens for ten ones.</td>
<td> 
Draw the counters onto a place value grid and show what you have taken away by crossing the counters out as well as clearly showing the exchanges you make.

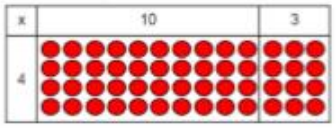
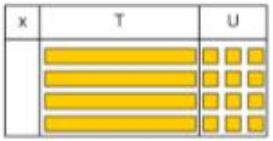
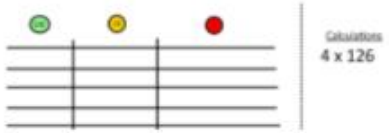
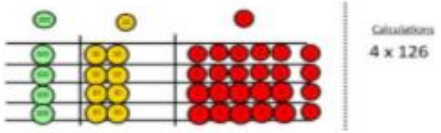
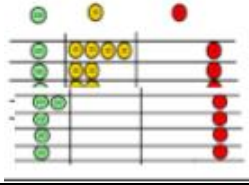
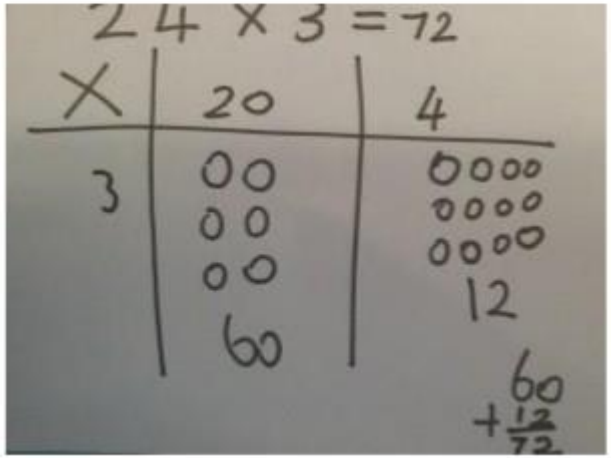
 
When confident, children can find their own way to record the exchange/regrouping.

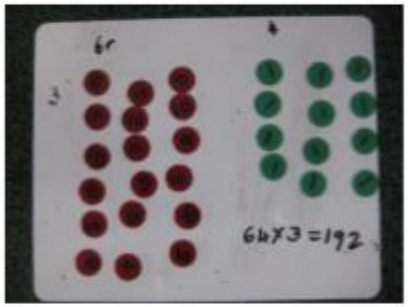
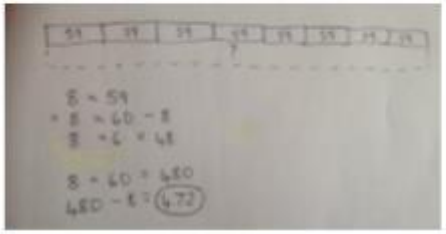
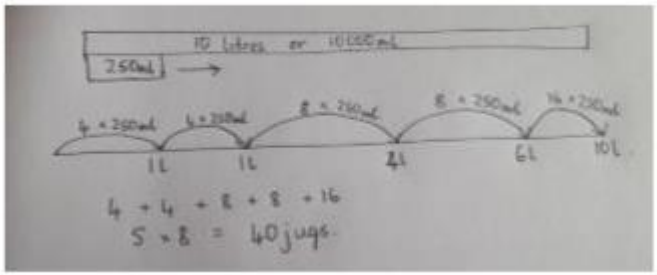
Just writing the numbers as shown here shows that the child understands the method and knows when to exchange/regroup.</td>
<td> 
Children can start their formal written method by partitioning the number into clear place value columns.
  </td>
</tr>
</table>

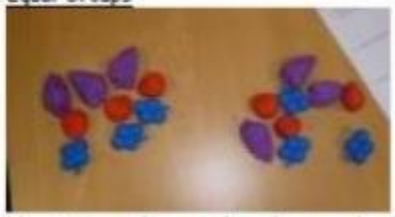
			Moving forward the children use a more compact method. This will lead to an understanding of subtracting any number including decimals. 5 12 1 2 6 3 . 0 - 2 6 . 5 2 3 6 . 5
Objective and strategies Multiplication	**Concrete**	**Pictorial**	**Abstract**

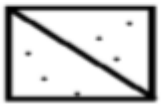
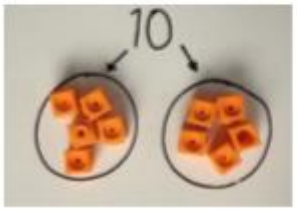
Doubling Reception/ Year 1	Use practical activities to show how to double a number.  double 4 is 8 4 × 2 = 8	Draw pictures to show how to double a number. Double 4 is 8 	 Partition a number and then double each part before recombining it back together.
Counting in multiples Reception/ Year 1	  Count in multiples supported by concrete objects in equal groups.	 Use a number line or pictures to continue support in counting in multiples.	Count in multiples of a number aloud. Write sequences with multiples of numbers. 2, 4, 6, 8, 10 5, 10, 15, 20, 25 , 30

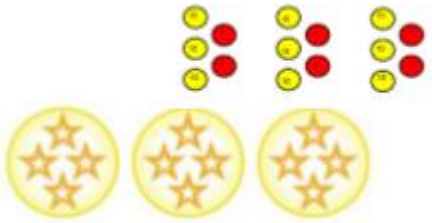
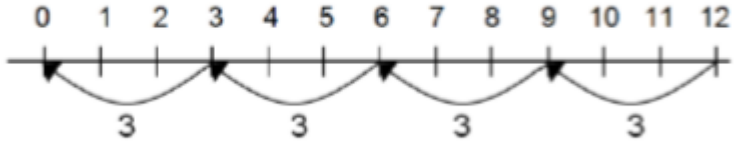
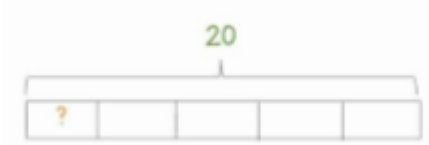
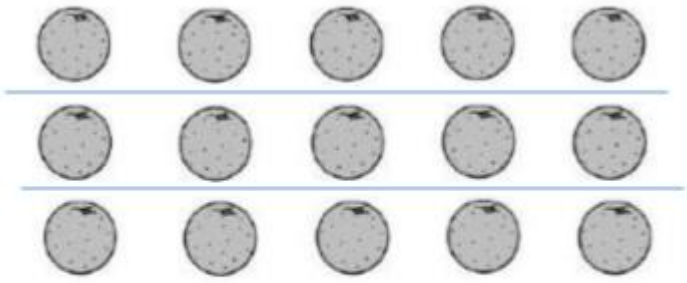
Repeated addition Year 1/ Year 2	  Use different objects to add equal groups. 	There are 3 plates. Each plate has 2 star biscuits on. How many biscuits are there?  2 add 2 add 2 equals 6  5 + 5 + 5 = 15	Write addition sentences to describe objects and pictures. 
Arrays – showing commutative multiplication Year 2/ Year 3/ Year 4	Create arrays using counters/ cubes to show multiplication sentences.  	Draw arrays in different rotations to find **commutative** multiplication sentences.    Link arrays to area of rectangles.	Use an array to write multiplication sentences and reinforce repeated addition.  5 + 5 + 5 = 15 3 + 3 + 3 + 3 + 3 = 15 5 x 3 = 15 3 x 5 = 15

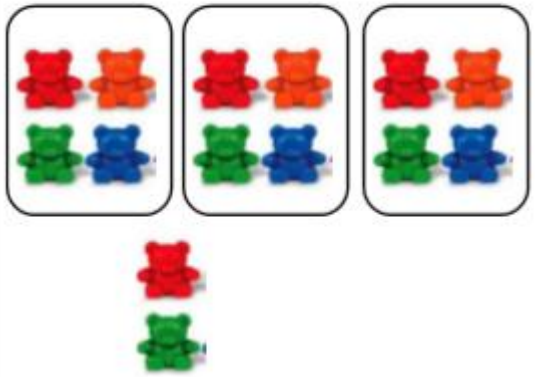
Grid Method Year 3/ Year 4	Show the link with arrays to first introduce the grid method.  4 rows of 10 4 rows of 3 Move on to using Base 10 to move towards a more compact method.  4 rows of 13 Move on to place value counters to show how we are finding groups of a number.We are multiplying by 4 so we need 4 rows.  Fill each row with 126.  Add up each column, starting with the ones making any exchanges needed.  Then you have your answer.	Children can represent the work they have done with place value counters in a way that they understand. They can draw the counters, using colours to show different amounts or just use circles in the different columns to show their thinking as shown below.  	

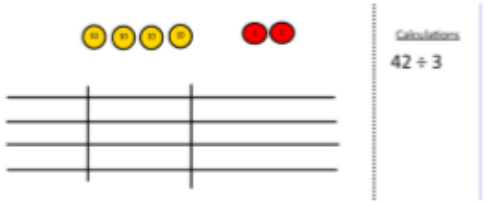
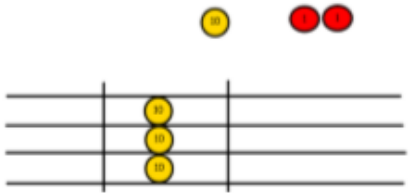
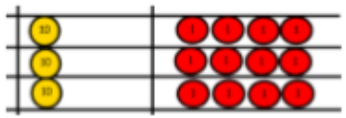
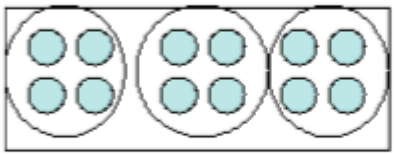
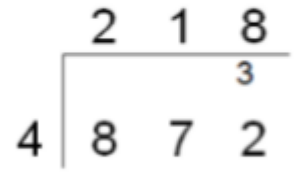
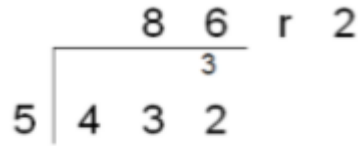
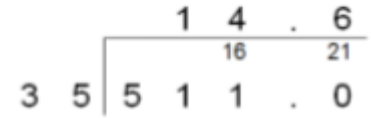
Column Multiplication Year 4/ Year 5/ Year 6	Children can continue to be supported by place value counters at the stage of multiplication.  It is important at this stage that they always multiply the ones first and note down their answer followed by the tens which they note below.	Bar modelling and number lines can support learners when solving problems with multiplication alongside the formal written methods.   	Start with long multiplication, reminding the children about lining up their numbers clearly in columns. If it helps, children can write out what they are solving next to their answer. 32 x 24 8 (4 x 2) 120 (4 x 30) 40 (20 x 2) 600 (20 x 30) 768  This moves to the more compact method. 

Objective and Strategies. Division	Concrete	Pictorial	Abstract
Equal groups Reception/ Year 1	Equal Groups  Here two equal groups have been made where the child had to consider colour, number and type of object.	Possible activities and opportunities: • During snack time – give one child 2 banans, another 2 apples – ask 'is this fair?' Discuss. • During lay – rewards for 'sharing fairly' E.g. 'we have got 4 toy cars and 2 children, what should we do?' extend by questioning – what if there were 3 children? 2. Sorting fairly (link to Venn diagrams) Possible activities: • Use manipulatives such as dinosaurs, beas etc to sort – develop consideration of colour, suze type of toy etc. • Have hoops and chaacters in charge of each hoop e.g. two dinosaurs – each dinosaur needs the same as the other in their hoop – begin with an even number of the same coloured unifix cubes – then introdice another set of a different colour – how are we going to make sure the dinosaurs still have equal sets of objects in terms of colour and number? Extend by introducing a wider range of colours, numbers andd types of objects. • Sorting the bean bafs during P.E. so that it is fair for each group.	Are the groups equal? Why? Can you make them equal?

Halving Reception/ Year 1	  	  	Half of 6 = 3 Mental recall of halves to 10.
Sharing objects into groups. Year 1/ Year 2	 I have 10 cubes, can you share them equally in 2 groups? 	Children use pictures or shapes to share quantities.  8 ÷ 2 = 4	Share 9 buns between three people. 9 ÷ 3 = 3

Division as grouping Year 2	Divide quantities into equal groups. Use cubes, counters, objects or place value counters to aid understanding.   96 ÷ 3 = 32 	Use a number line to show jumps in groups. The number of jumps equals the number of groups.  Think of the bar as a whole. Split it into the number of groups you are dividing by and work out how many would be within each group.  	28 ÷ 7 = 4 Divide 28 into 7 groups. How many are in each group?
Division within arrays Year 2	 Link division to multiplication by creating an array and thinking about the number sentences that can be created. Eg 15 ÷ 3 = 5 5 x 3 = 15 15 ÷ 5 = 3 3 x 5 = 15	 Draw an array and use lines to split the array into groups to make multiplication and division sentences.	Find the inverse of multiplication and division sentences by creating four linking number sentences. 7 x 4 = 28 4 x 7 = 28 28 ÷ 7 = 4 28 ÷ 4 = 7

Division with a remainder Year 2/ Year 3	14 ÷ 3 = Divide objects between groups and see how much is left over 	Jump forward in equal jumps on a number line then see how many more you need to jump to find a remainder.  Draw dots and group them to divide an amount and clearly show a remainder. 	Complete written divisions and show the remainder using r. 

Short division Year 4/ Year 5/ Year 6	 Use place value counters to divide using the bus stop method alongside  42 ÷ 3= 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.  We exchange this ten for ten ones and then share the ones equally among the groups.  We look how much in 1 group so the answer is 14.	Students can continue to use drawn diagrams with dots or circles to help them divide numbers into equal groups.  Encourage them to move towards counting in multiples to divide more efficiently.	Begin with divisions that divide equally with no remainder.  Move onto divisions with a remainder.  Finally move into decimal places to divide the total accurately. 

Long division Year 5/ Year 6	192 ÷ 6 using place value counters to support written method  Exchange 100 for ten 10s  19 tens into groups of 6  3 groups so that is 30 x 6, exchange remaining 10 for ten 1s  So 192 ÷ 6 = 32 	Divide numbers up to 4-digits by a two-digit whole number using the formal written method of short division where appropriate for the context 564 ÷ 13 Using known multiplication facts 1 13 2 26 4 52 6 130 8 104 10 260 $13\overline{)5\ 6^{4}4}$ 4 3 r 5 564 ÷ 13 = 43 r 5 = $43\frac{5}{13}$ = 43.38... $13\overline{)5\ 6^{4}4.{}^{5}0^{10}0}$ 4 3 . 3 8 ... Divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context 564 ÷ 13 13 ⟌ 5 6 4 . 0 0 ... = 4 3 . 3 8 ... 5 2 4 4 − 3 9 5 0 − 3 9 1 1 0 − 1 0 4 6 = 43 r 5 = $43\frac{5}{13}$ = 43.4 (to 1dp)