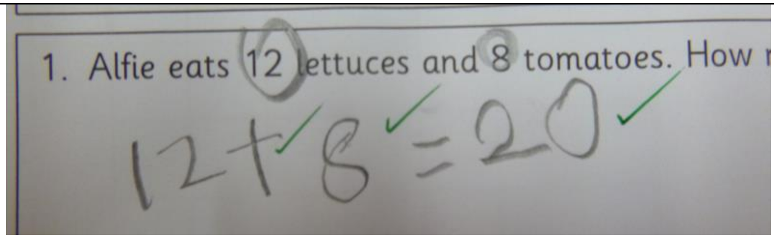
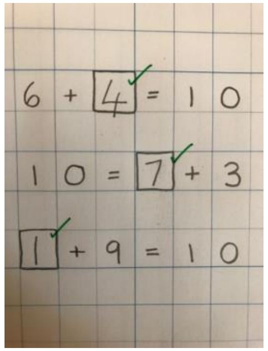
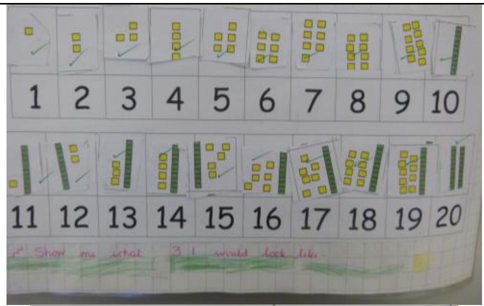
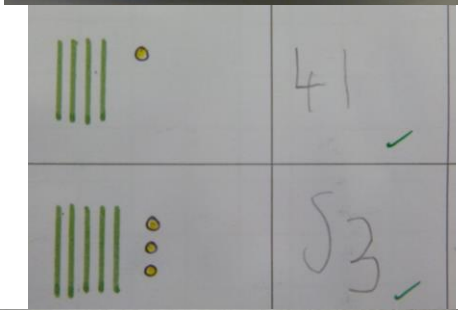
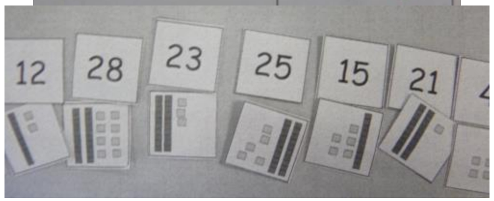
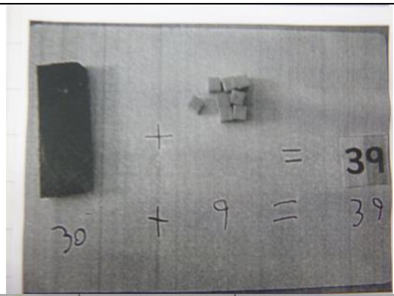
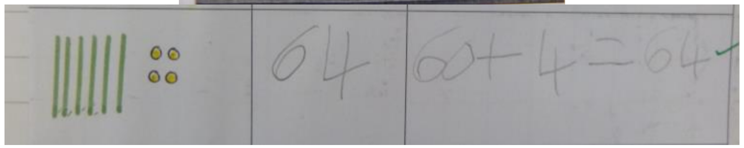
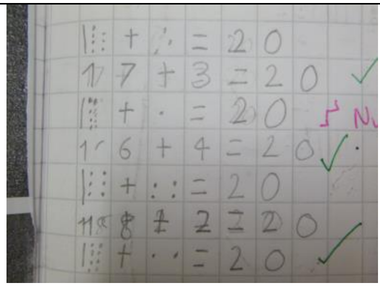
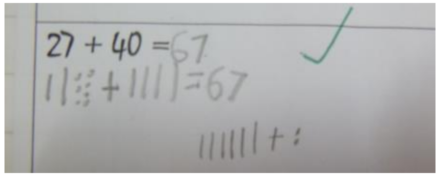
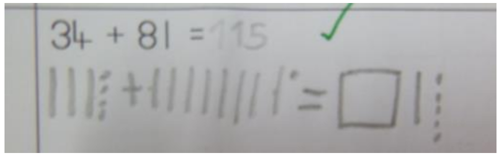
Addition

	Focus	Example	Notes
1	**Immersion in numbers an combining numbers to make totals**		Children are immersed in numbers and counting throughout the Foundation Stage.
2	**Use of manipulatives to make totals (informal)**		Children should progress through counting cubes, straws, objects etc. Children should then be introduced to a bundle of 10 straw; making 10 (before Dienes)
3	**Recording of linear number sentences using + and = symbols**		One number per square

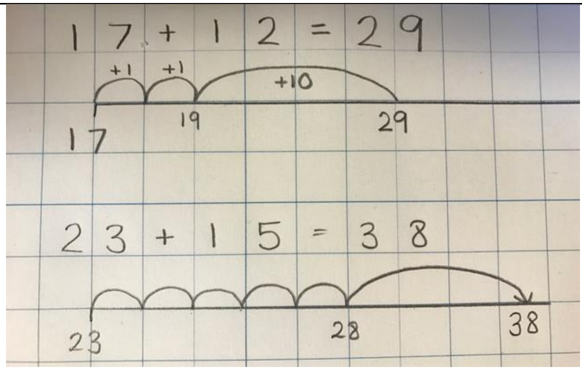
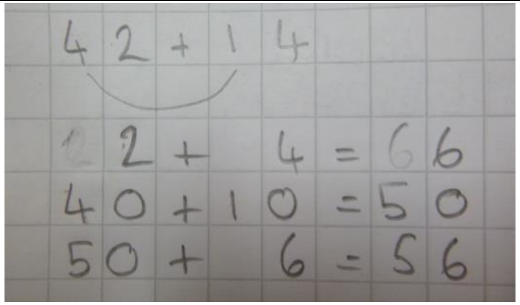
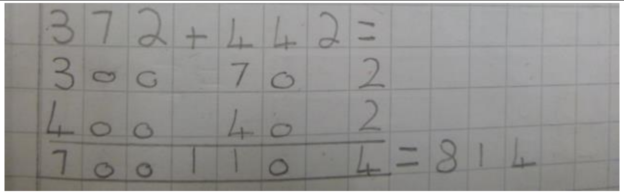
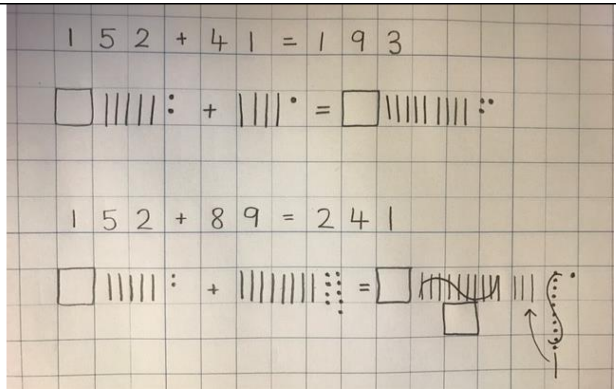
4	**Linear number sentences with missing numbers**		= symbol should be learnt as a 'balance' and be placed at either end of the number sentence e.g. 2 + 8 = 10 and 10 = 2 + 8
5	**Introduction to Dienes to show the partition of numbers**		Children should begin to appreciate the relative size of tens and ones and recognise 2 digit numbers as being made from tens and ones (TO)

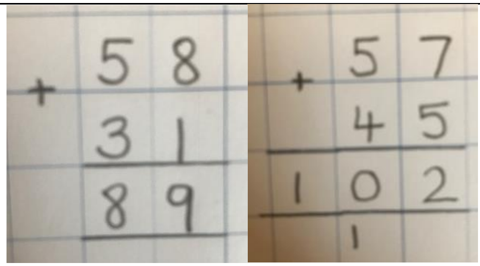
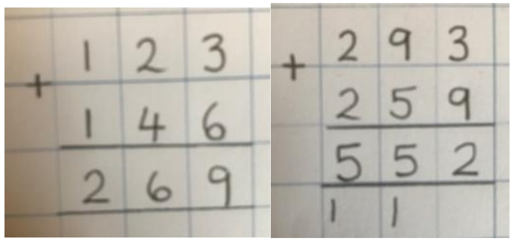
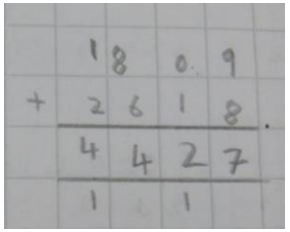
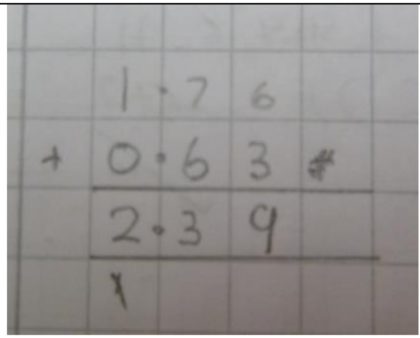
<table>
<tr>
<td>6</td>
<td>Use of manipulatives to make totals (Dienes)</td>
<td>


</td>
<td>Children should move through using manipulatives to informal jottings.</td>
</tr>
<tr>
<td>7</td>
<td>Addition using Dienes to create informal jottings</td>
<td> (to 20)


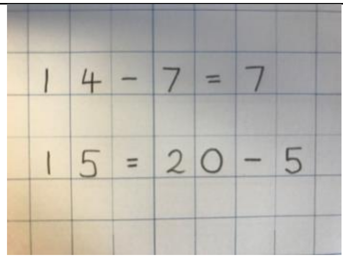
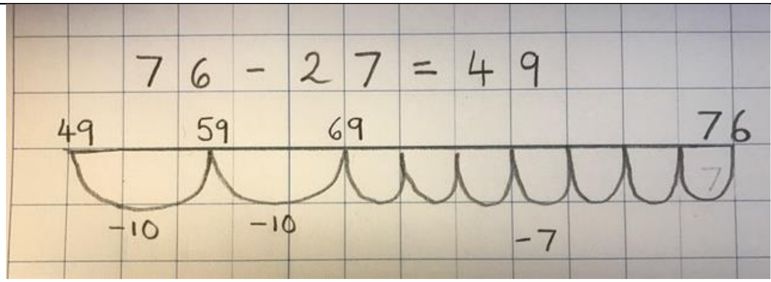
(2 digit + 2 digit, not crossing boundary)


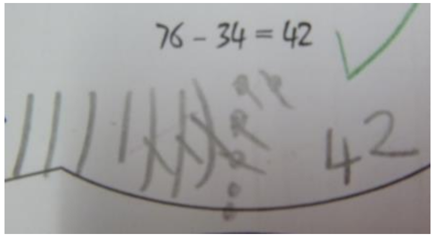
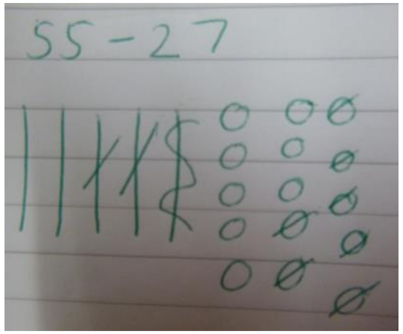
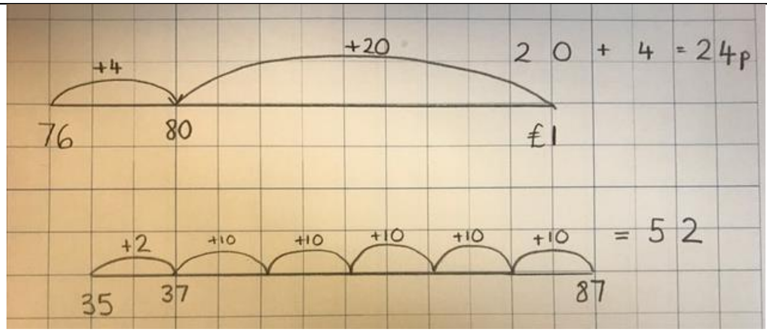
(2 digit + 2 digit, crossing 100 boundary)</td>
<td>Jottings should be uniform in size.
□ = hundred
| = ten
• = one</td>
</tr>
</table>

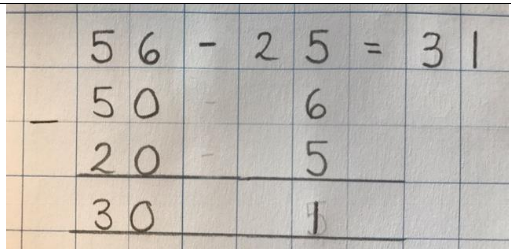
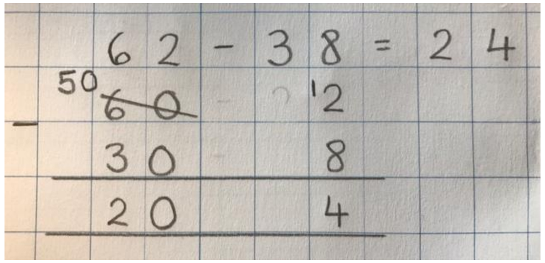
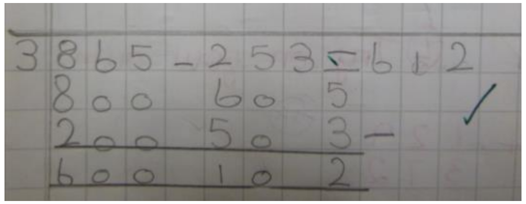
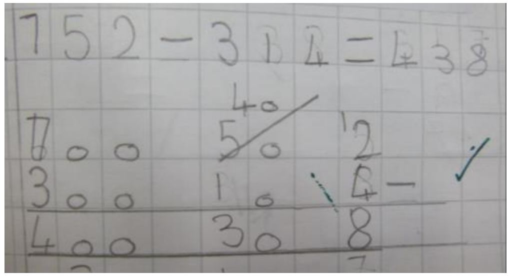
8	**Number line**		(NB: number lines and Dienes are to be offered for children in any order. Once taught, children will then have the opportunity to use the method they choose) Children should add ones first and then tens. This ensures consistency when progressing to the column methods. 'Jumps' go above the number line and numbers go below (opposite in subtraction on a number line).
9	**Expanded Addition**		Children begin by partition the number HTO/TO Children then show the linear number sentences for each of the partition, beginning with the ones.
10	**Expanded Column**		Children expand each number by partitioning the number into HTO/TO Each partition is written in columns, stacked above/below its corresponding HTO from the other number to be added. Beginning with then ones, each column is added. Totals for each of the HTO columns are combined mentally to make the final total.
11	**Expanded Column (with Dienes)**		This may be used before the written method to illustrate how ones and ten are exchanged; as a visual representation of why numbers are 'carried'.

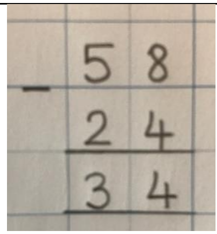
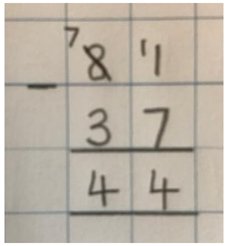
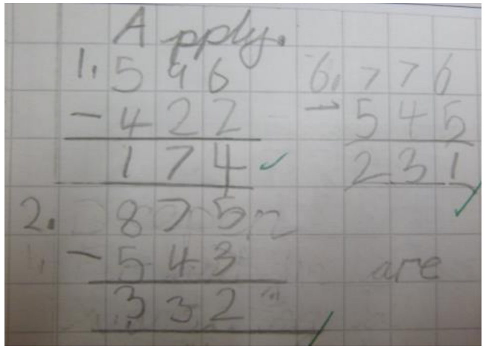
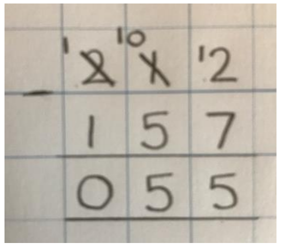
12	**Compact Column**	 (2 digit + 2 digit without and with exchange)  (3 digit + 3 digit without and with exchange)  (4 digit + 4 digit with exchange)	Presentation policy should be reinforced here to ensure that the corresponding columns are stacked correctly in each of the numbers to add. Once taught addition without exchange, children should then apply this to numbers of varying size.
13	**Compact Column** **(with decimals)**	 (decimal + decimal with exchange)	Decimal points should always be in-line.

Subtraction

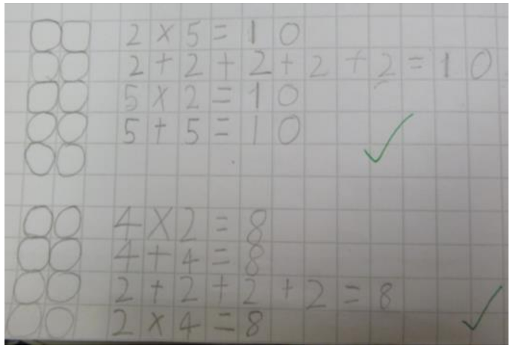
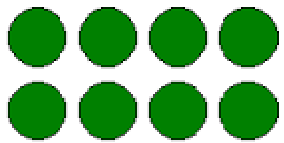
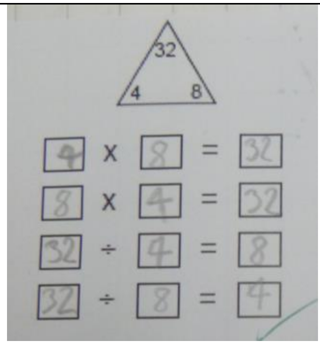
	Focus	Example	Notes
1	**Number sentences**		Basic reinforcement of beginning at the starting number and then counting back using a number line, and then mentally to find the total. Number sentences should be represented in reverse as well, using the = symbol as a ‘balance’.
2	**Number lines** (partitioning)		Empty number line provided, progress to children drawing the empty number line. Starting number written at the right end of number line. Partition second number and subtract the ones first and then the tens. ‘Jumps’ go below the number line and numbers go above (opposite in addition on a number line).

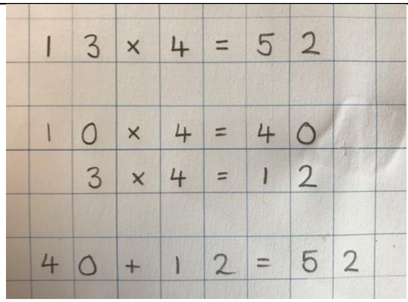
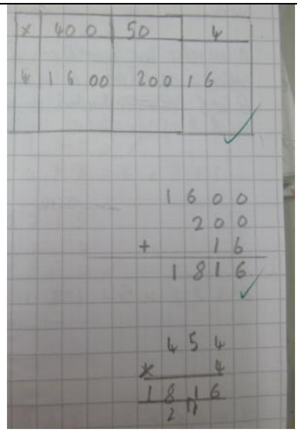
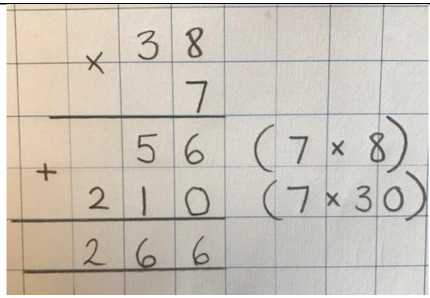
3	**Using Dienes to create informal jottings**	 (2digit – 2 digit without decomposition)  (2digit – 2 digit with decomposition)	These replicate the jottings used when adding with jottings (see above) Children create the starting number using jottings for tens and ones. Children then cross out the ones and tens being subtracted and then add the remaining total to find the answer. Decomposition is required when the value in the ones column is higher in the number being subtracted, than in the starting number. A S drawn over the ten being exchanged is used to show that decomposition has taken place.
4	**Number lines** (counting on to find the difference between close numbers)		When the target number is a multiple of 10 (Change from £1 when you've spent 76p): Add ones to reach the next multiple of ten (80p) and then tens to reach the target (100p) When the target number is not a multiple of ten (the difference between 87 and 35): Add ones to until the value in the ones column matches that of the target number.

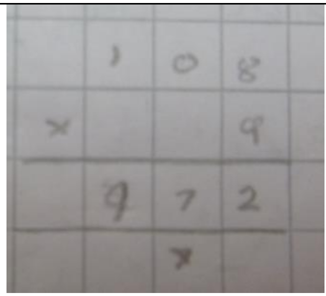
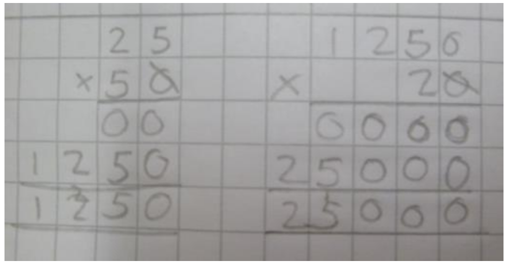
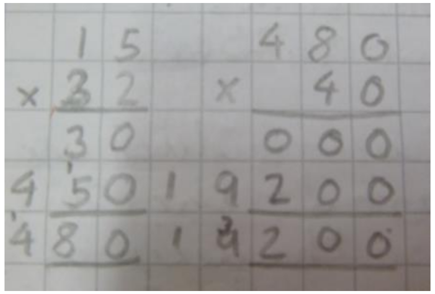
5	**Expanded Column**	 (2 digit – 2 digit without decomposition)  (2 digit – 2 digit with decomposition)  (3 digit- 3 digit without decomposition)  (3 digit – 3 digit with decomposition)	Numbers are partitioned into TO or HTO and set out in a columns. Subtraction begins with the ones.

6	**Compact Column**	 (2 digit – 2 digit without decomposition)  (2 digit – 2 digit with decomposition)  (3 digit – 3 digit without decomposition)  (3 digit – 3 digit with decomposition)	Presentation reflects that used in addition.

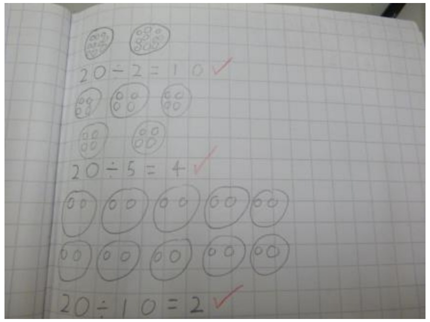
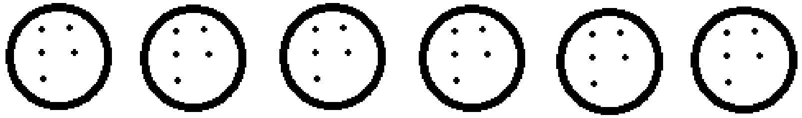
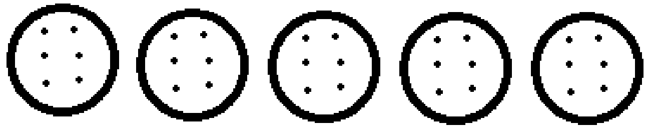
Multiplication

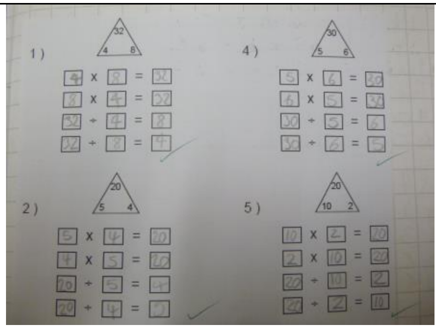
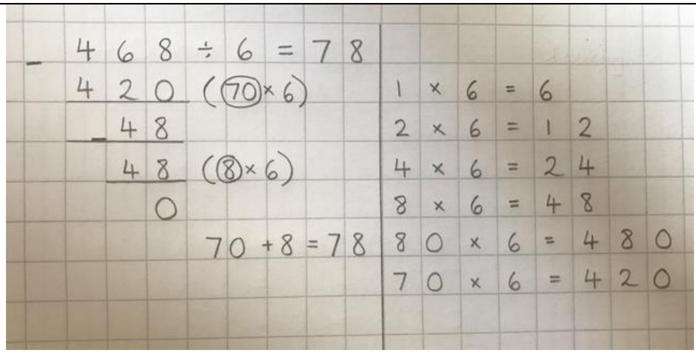
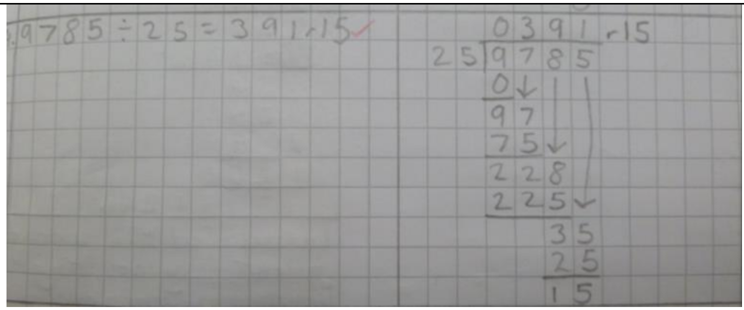
	Focus	Example	Notes
1	**x table facts**		There is an expectation that children will learn, by heart, the following multiplication tables….and be able to link this to solving division facts. **Year 2:** x2 x5 x10 **Year 3:** x3 x4 x8 **Year 4:** x6 x7 x9
2	**Arrays- counting in groups/repeated addition**		Children should appreciate that an array represents 2 multiplication facts. E.g.  4 x 2 and 2 x 4 Arrays should also be linked to repeated addition facts.
3	**Fact Families**		These can be used to show the relationship between multiplication and division.

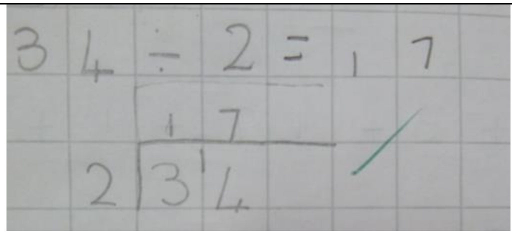
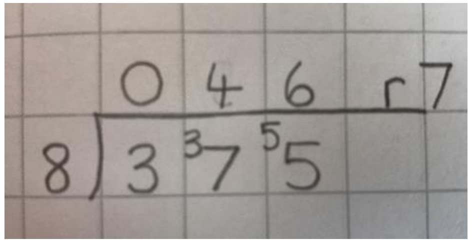
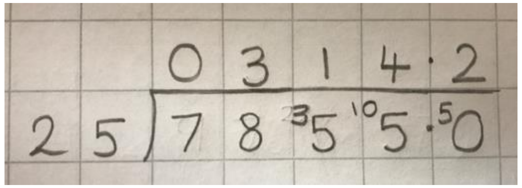
4	**Linear Partitioning**		This method requires children to have secure multiplication fact recall.
5	**Expanded Grid**	 (3 digit x 1 digit)	This method relies on the children having secure place value knowledge (e.g. 4 x 4 = 16, so 400 x 4 = 1600)
6	**Vertical Column Expanded**		This method supports the learning of the vertical column compact method as encouraged children to making annotations of the multiplication facts that they are solving to arrive at the final answer.

7	**Vertical Column Compact**	 (3d x 1d)  (2d x 2d and 4d x 2d)  (2d x 2d and 3d x 2d)	This is the method that all children will arrive at. This method combines many aspects of the previous methods, but is compact.

Division

	Focus	Example	Notes
1	**Practical Sharing**		
2	**Sharing and Grouping**	 (Sharing)	Both sharing and grouping are important. Both can be shown visually… **Grouping** - when the number being shared and the group size is already known, but number of groups is unknown E.g. How many groups will we have if we split our class of 30 into groups of 5? Children will create full groups of 5 until they reach their target of 30.  30 ÷ 6 = 5 **Sharing** - when the number being shared and the number of groups are already determined, but the group size is unknown. E.g. I need to split the class of 30 children into 5 equal groups. How many children will be in each group? Children would create the 5 empty groups and then share out members equally until they reach 30.  30 ÷ 5 = 6

3	**Fact Families**		These can be used to show the relationship between multiplication and division (and other inverse operations)
4	**Short Division Chunking**	 (3 digit ÷ 1 digit)	Relies on children being fluent in all multiplication facts. Children create ‘chunks’ of multiples to take away from the starting number until they get to 0. In this case, the 6 times table has allowed the child to create a variety of ‘chunks’ and this has been subtracted using column method.
5	**Long Division**	 (4 digit ÷ 2 digit with remainder)	This method prepares children for Short Division. It allows them to see the maths that is happening in the ‘Short’ method. Long division can have a remainder expressed as a decimal.

6	**Short Division**	 Simple Short Division- Without remainders  Simple Short Division- With remainders  Short Division 4 digit ÷ 2 digit with decimal remainder	Known as the ‘bus stop method’. Number being divided is written inside the ‘bus stop’.