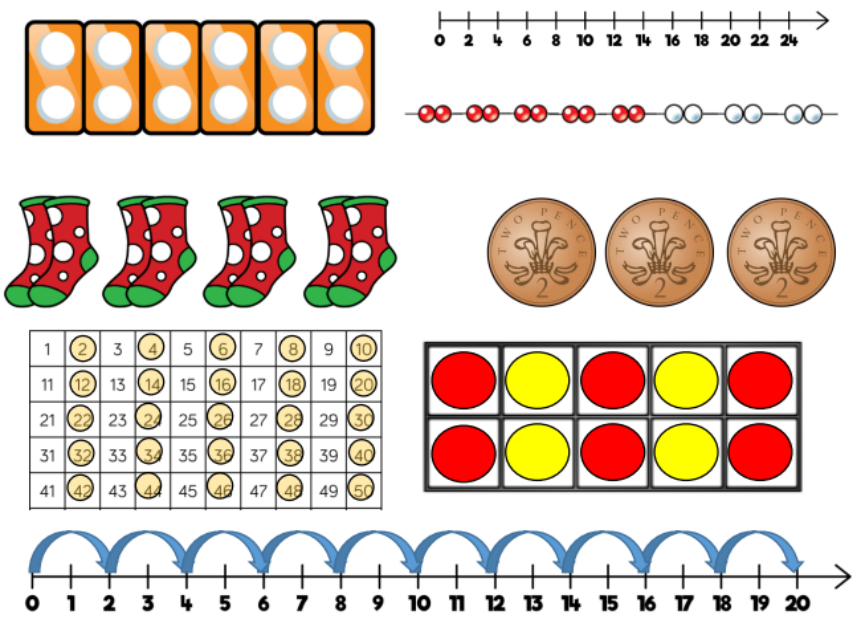
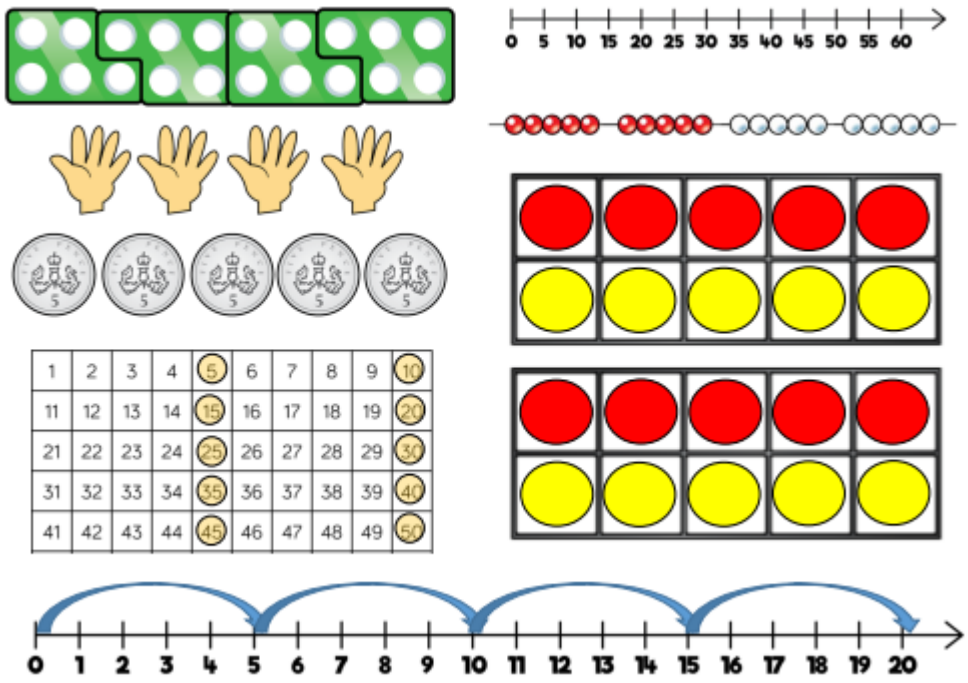
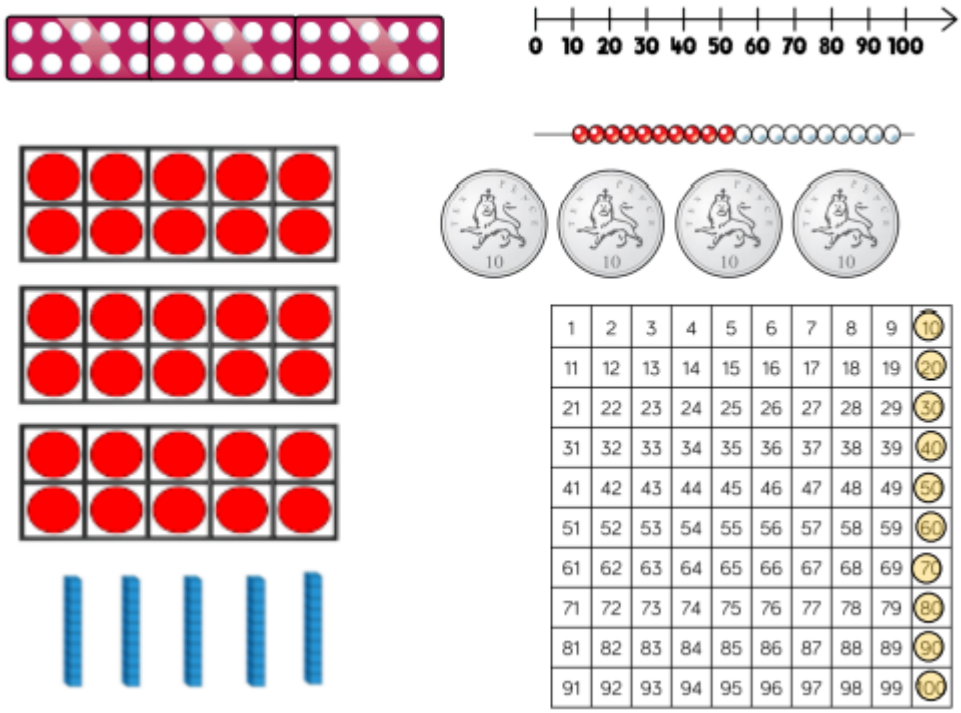
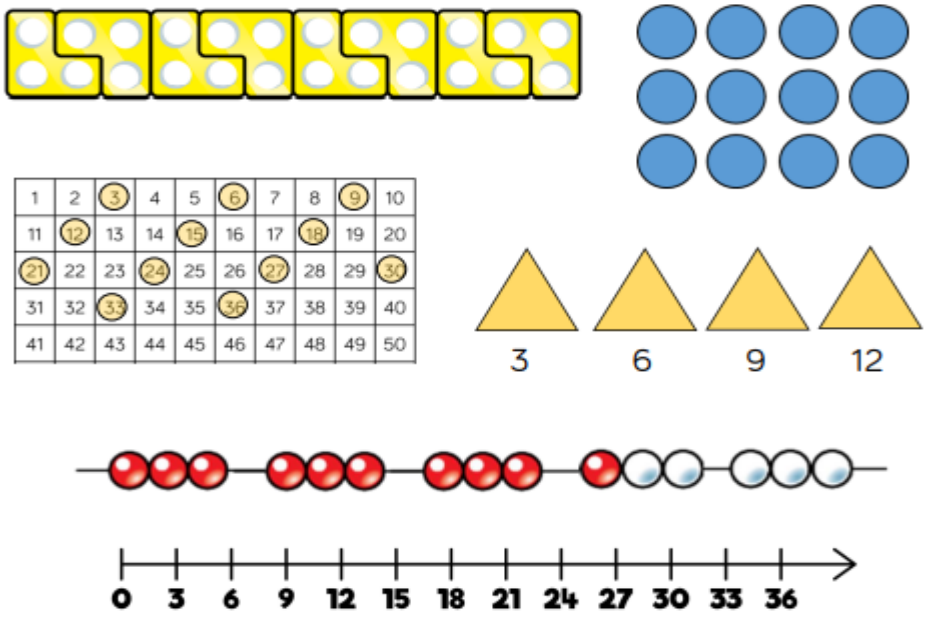
CPA Approach – Calculation Policy

Skill: 2 times table	Year 2
	Encourage daily counting in multiples both forwards and backwards. This can be supported using a number line or a hundred square. Look for patterns in the two times table, using concrete manipulatives to support. Notice how all the numbers are even and there is a pattern in the ones. Use different models to develop fluency.

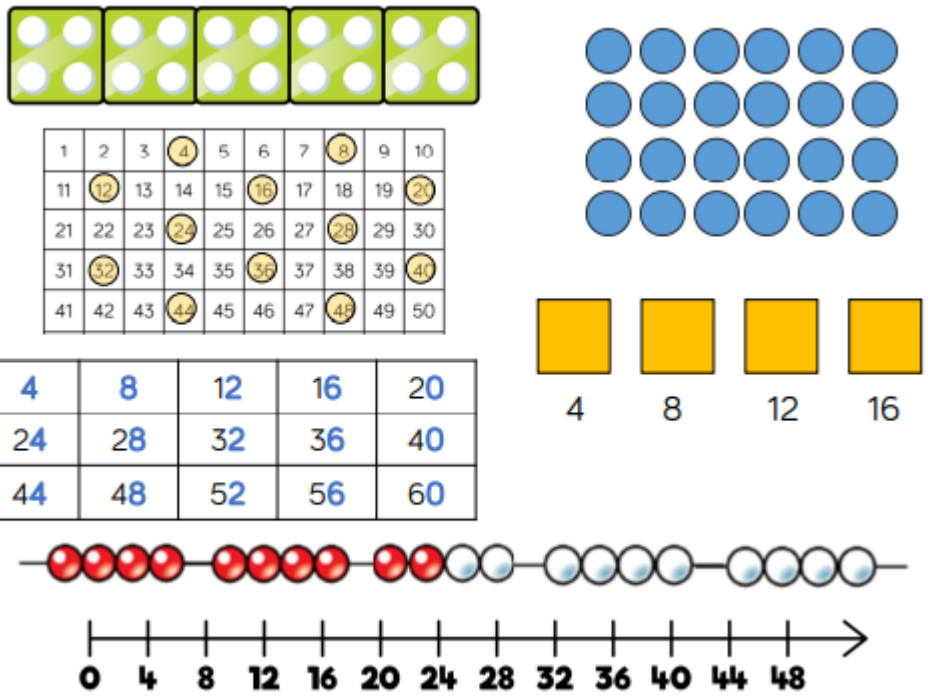
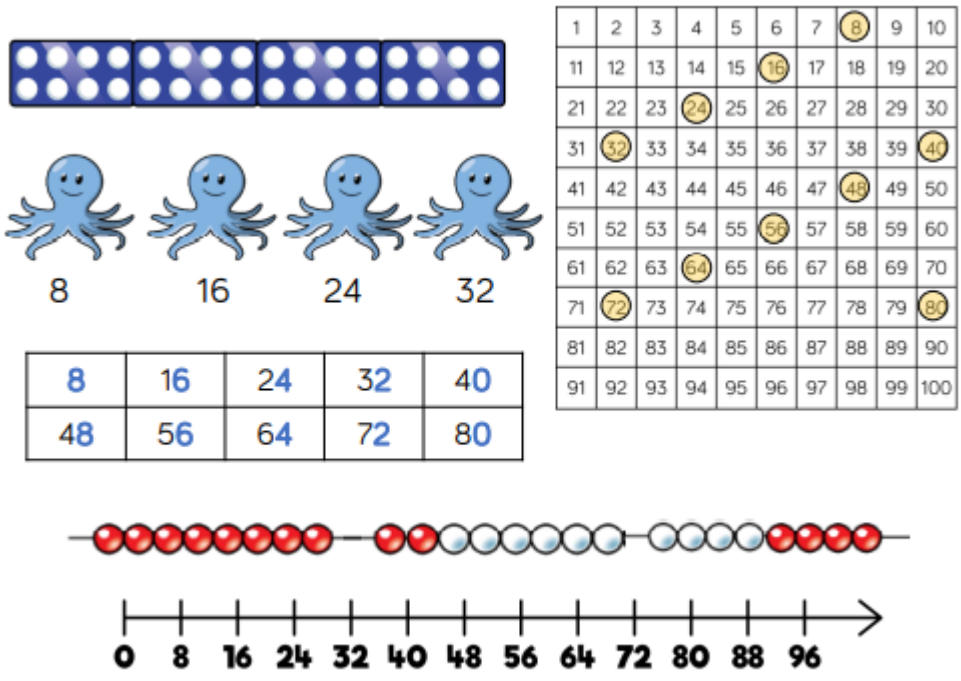
Skill: 5 times table	Year 2
	Encourage daily counting in multiples both forwards and backwards. This can be supported using a number line or a hundred square. Look for patterns in the five times table, using concrete manipulatives to support. Notice the pattern in the ones as well as highlighting the odd, even, odd, even pattern.

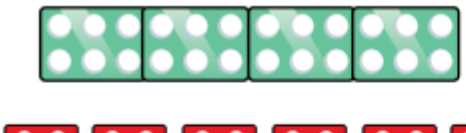
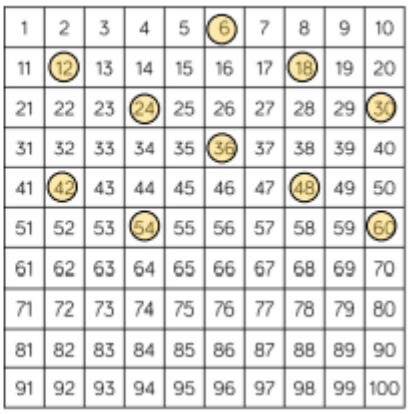
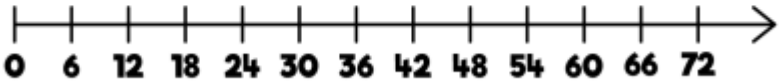
CPA Approach – Calculation Policy

Skill: 10 times table	Year 2
	Encourage daily counting in multiples both forwards and backwards. This can be supported using a number line or a hundred square. Look for patterns in the ten times table, using concrete manipulatives to support. Notice the pattern in the digits - the ones are always 0, and the tens increase by 1 ten each time.

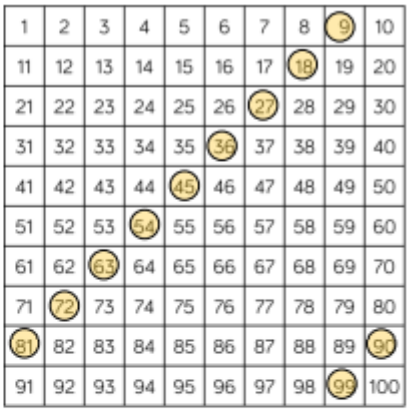
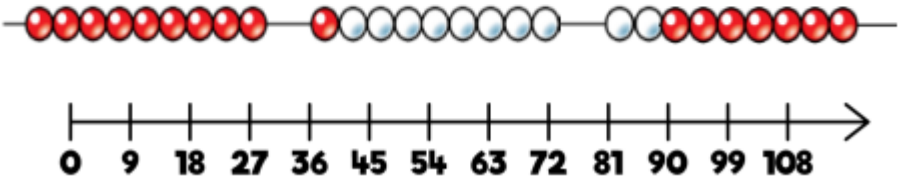
Skill: 3 times table	Year 3
	Encourage daily counting in multiples both forwards and backwards. This can be supported using a number line or a hundred square. Look for patterns in the three times table, using concrete manipulatives to support. Notice the odd, even, odd, even pattern using number shapes to support. Highlight the pattern in the ones using a hundred square.

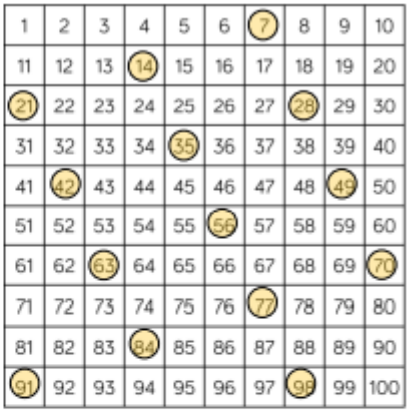
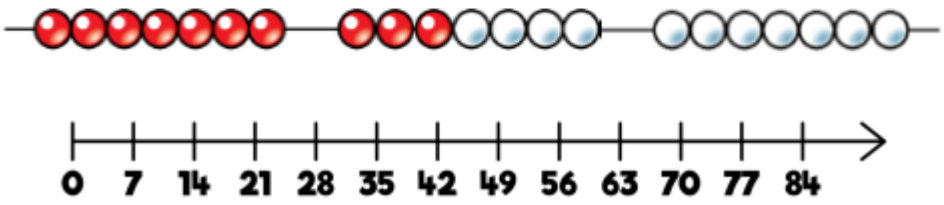
CPA Approach – Calculation Policy

Skill: 4 times table	Year 3
	Encourage daily counting in multiples, supported by a number line or a hundred square. Look for patterns in the four times table, using manipulatives to support. Make links to the 2 times table, seeing how each multiple is double the twos. Notice the pattern in the ones within each group of five multiples. Highlight that all the multiples are even using number shapes to support.
Skill: 8 times table	Year 3
	Encourage daily counting in multiples, supported by a number line or a hundred square. Look for patterns in the eight times table, using manipulatives to support. Make links to the 4 times table, seeing how each multiple is double the fours. Notice the pattern in the ones within each group of five multiples. Highlight that all the multiples are even

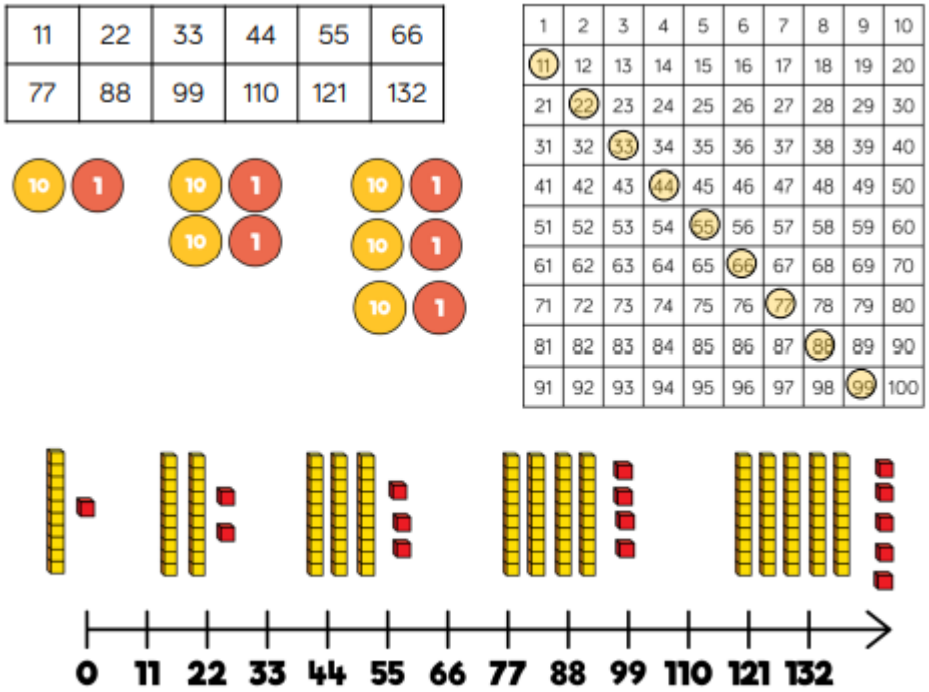
	using number shapes to support.
Skill: 6 times table	Year 4
   6 12 18 24 30 36 42 48 54 60 66 72 78 84 90   0 6 12 18 24 30 36 42 48 54 60 66 72	Encourage daily counting in multiples, supported by a number line or a hundred square. Look for patterns in the six times table, using manipulatives to support. Make links to the 3 times table, seeing how each multiple is double the threes. Notice the pattern in the ones within each group of five multiples. Highlight that all the multiples are even using number shapes to support.

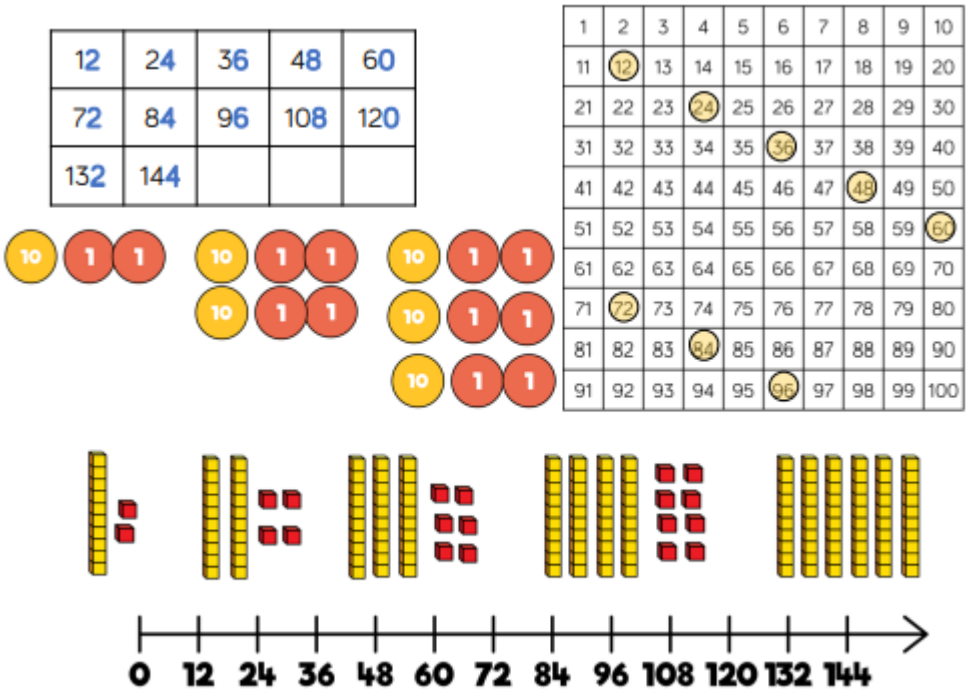
CPA Approach – Calculation Policy

Skill: 9 times table	Year 4
 	9	18	27	36	45
---	---	---	---	---
54	63	72	81	90 |   	Encourage daily counting in multiples both forwards and backwards. This can be supported using a number line or a hundred square. Look for patterns in the nine times table, using concrete manipulatives to support. Notice the pattern in the tens and ones using the hundred square to support as well as noting the odd, even pattern within the multiples.

Skill: 7 times table	Year 4
 	7	14	21	28	35
---	---	---	---	---
42	49	56	63	70 |   	Encourage daily counting in multiples both forwards and backwards, supported by a number line or a hundred square. The seven times table can be trickier to learn due to the lack of obvious pattern in the numbers, however they already know several facts due to commutativity. Children can still see the odd, even pattern in the multiples using number shapes to support.

CPA Approach – Calculation Policy

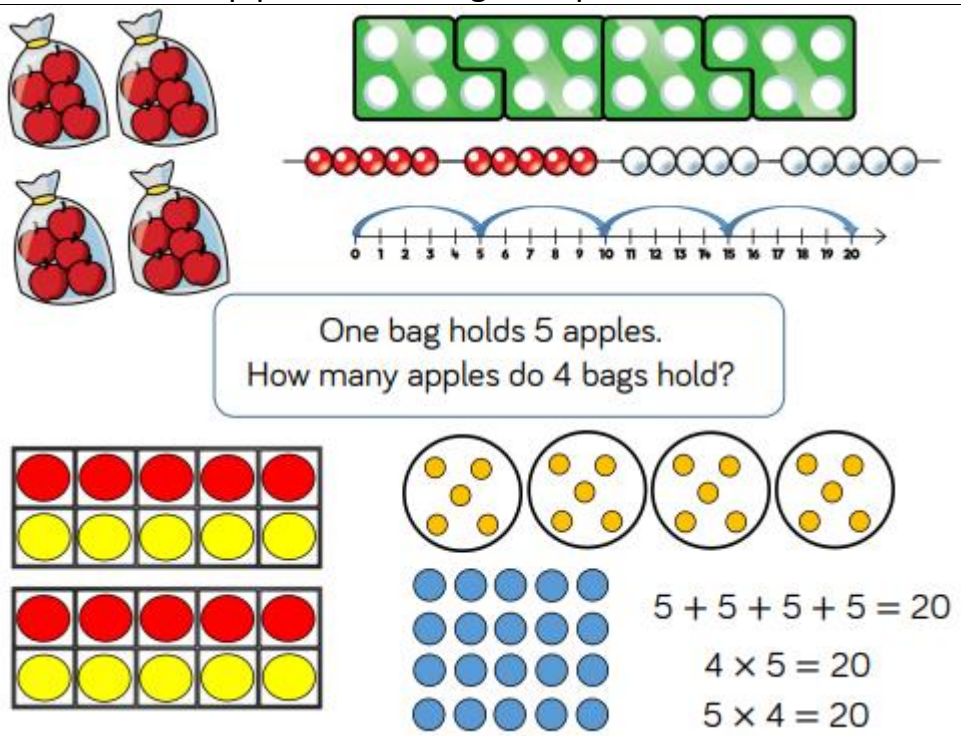
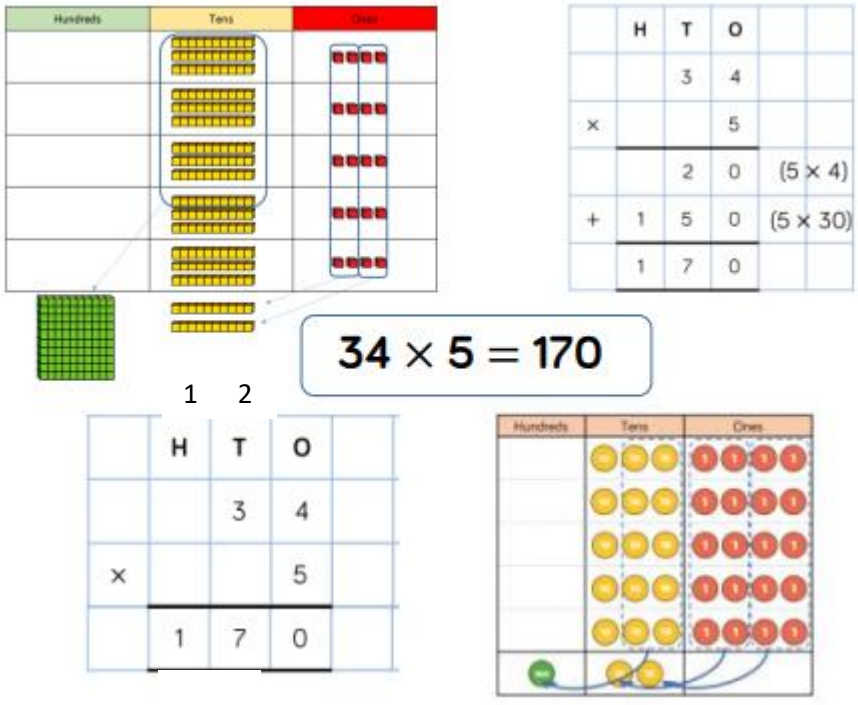
Skill: 11 times table	Year 4
	Encourage daily counting in multiples both forwards and backwards. This can be supported using a number line or a hundred square. Look for patterns in the eleven times table, using concrete manipulatives to support. Notice the pattern in the tens and ones using the hundred square to support. Also consider the pattern after crossing 100.

Skill: 12 times table	Year 4
	Encourage daily counting in multiples, supported by a number line or a hundred square. Look for patterns in the 12 times table, using manipulatives to support. Make links to the 6 times table, seeing how each multiple is double the sixes. Notice the pattern in the ones within each group of five multiples. The hundred square can support in highlighting this pattern.

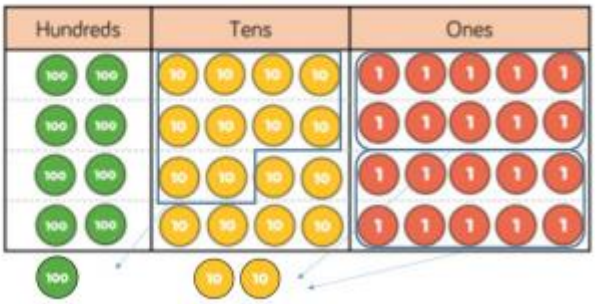
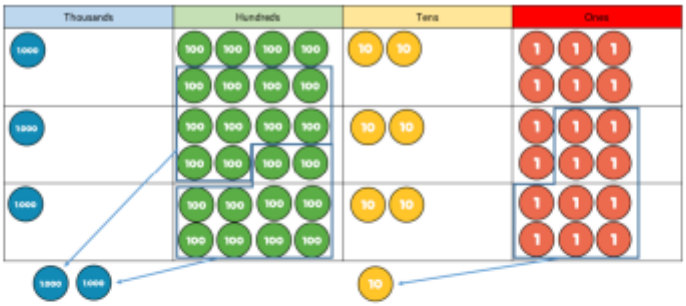
CPA Approach – Calculation Policy

Multiplication

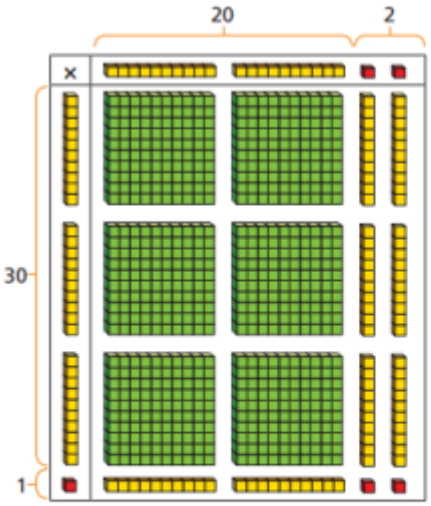
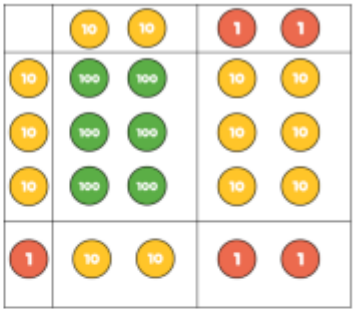
CPA Approach – Calculation Policy

Skill: Solve 1-step problems using multiplication	Year 1/2
	Children represent multiplication as repeated addition in many different ways. In Year 1, children use concrete and pictorial representations to solve problems. They are not expected to record multiplication formally. In Year 2, children are introduced to the multiplication symbol.
Skill: Multiply 2-digit numbers by 1-digit numbers	**Year 3/4**
	Informal methods and the expanded method are used in Year 3 before moving on to the short multiplication method in Year 4. Place value counters should be used to support the understanding of the method rather than supporting the multiplication, as children should use times table knowledge.

CPA Approach – Calculation Policy

Skill: Multiply 3-digit numbers by 1-digit numbers	Year 4
 1 2 H T O 2 4 5 × 4 9 8 0 $245 \times 4 = 980$ 	When moving to 3-digit by 1-digit multiplication, encourage children to move towards the short, formal written method. Base 10 and place value counters continue to support the understanding of the written method. Limit the number of exchanges needed in the questions and move children away from resources when multiplying larger numbers.
Skill: Multiply 4-digit numbers by 1-digit numbers	**Year 5**
 $1{,}826 \times 3 = 5{,}478$ 2 1 Th H T O 1 8 2 6 × 3 5 4 7 8	When multiplying 4-digit numbers, place value counters are the best manipulative to use to support children in their understanding of the formal written method. If children are multiplying larger numbers and struggling with their times tables, encourage the use of multiplication grids so children can focus on the use of the written method.

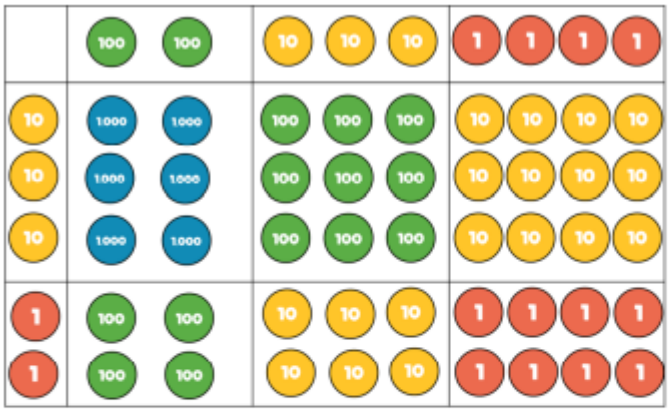
CPA Approach – Calculation Policy

Skill: Multiply 2-digit numbers by 2-digit numbers	Year 5
  $22 \times 31 = 682$	When multiplying a multi-digit number by 2-digits, use the area model to help children understand the size of the numbers they are using. This links to finding the area of a rectangle by finding the space covered by the Base 10. The grid method matches the area model as an initial written method before moving on to the formal written multiplication method.

×	20	2
30	600	60
1	20	2

	H	T	O
		2	2
×		3	1
		2	2
	6	6	0
	6	8	2

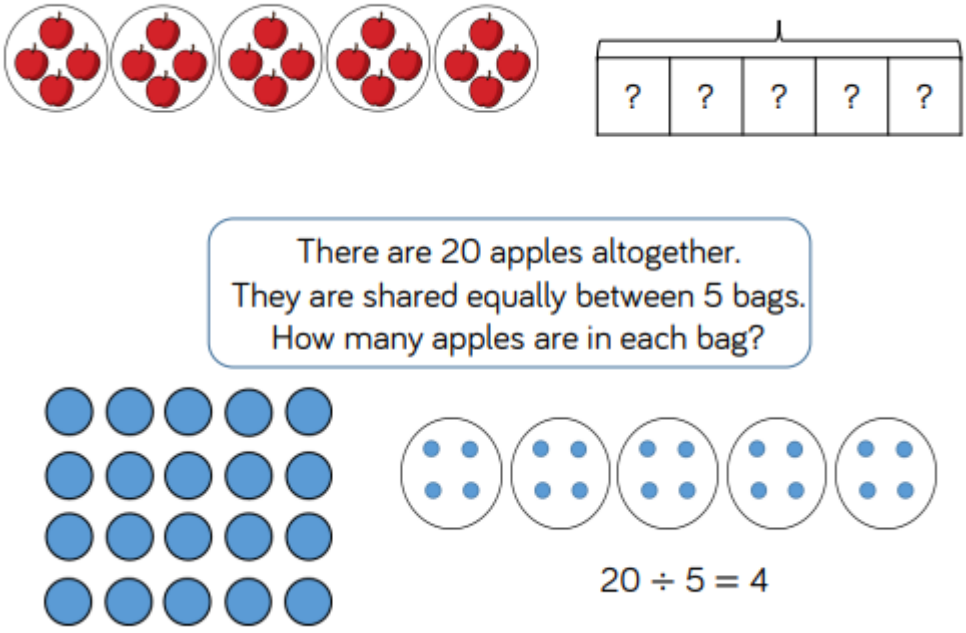
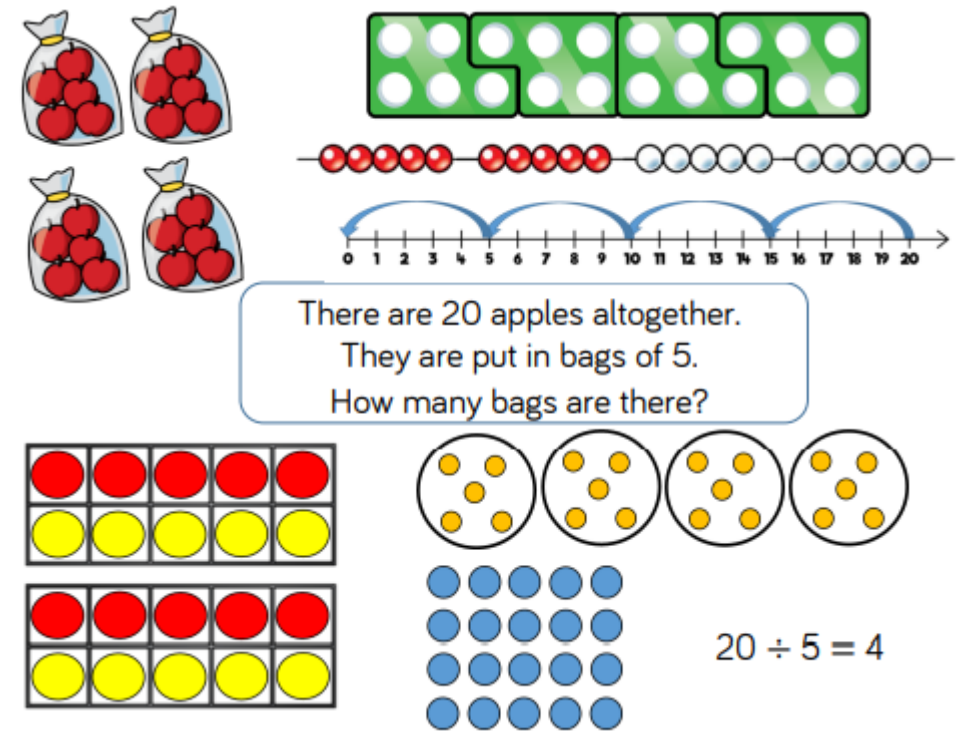
CPA Approach – Calculation Policy

Skill: Multiply 3-digit numbers by 2-digit numbers	Year 5
 1 2 Th H T O 2 3 4 × 3 2 4 6 8 7 0 2 0 7 4 8 8 234 × 32 = 7,488 × 200 30 4 30 6,000 900 120 2 400 60 8	Children can continue to use the area model when multiplying 3-digits by 2-digits. Place value counters become more efficient to use but Base 10 can be used to highlight the size of numbers. Children should now move towards the formal written method, seeing the links with the grid method.
Skill: Multiply 4-digit numbers by 2-digit numbers	Year 5/6
2 5 3 7 1 1 2 TTh Th H T O 2 7 3 9 × 2 8 2 1 9 1 2 5 4 7 8 0 7 6 6 9 2 2,739 × 28 = 76,692	When multiplying 4-digits by 2-digits, children should be confident in using the formal written method. If they are still struggling with times tables, provide multiplication grids to support when they are focusing on the use of the method. Exchanged digits should be placed at the top and crossed out once they have been incorporated. Different coloured pencils can be used when introducing the

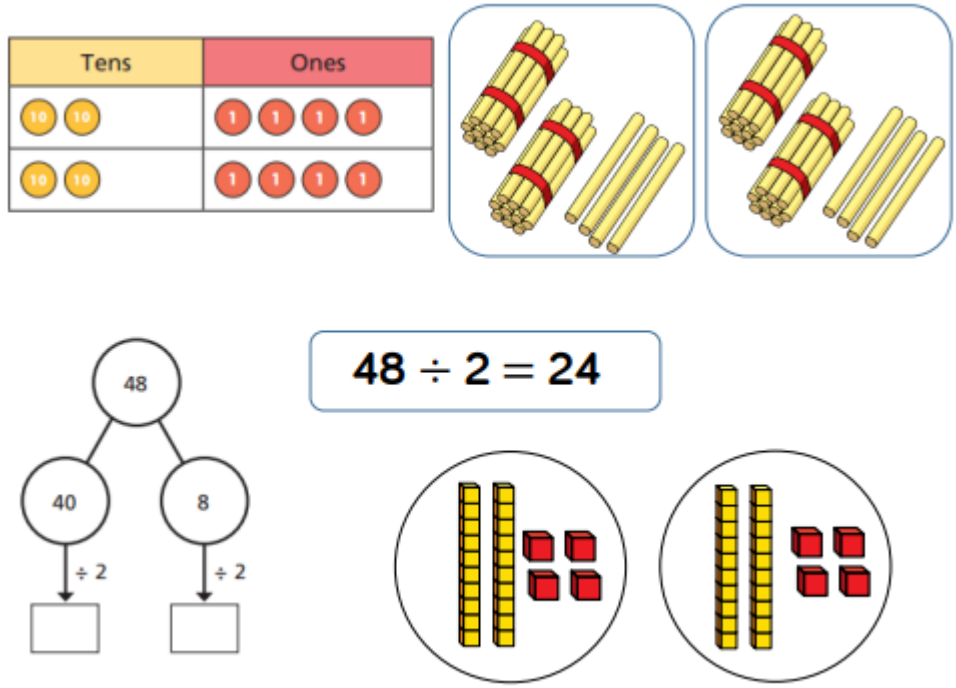
	concept to make exchanges clear.

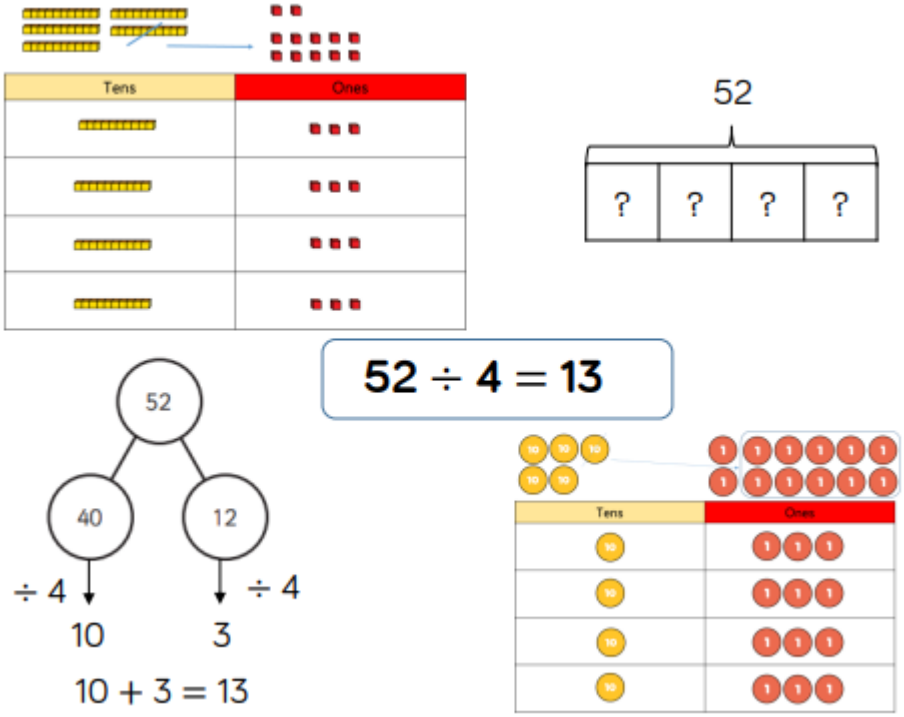
Division

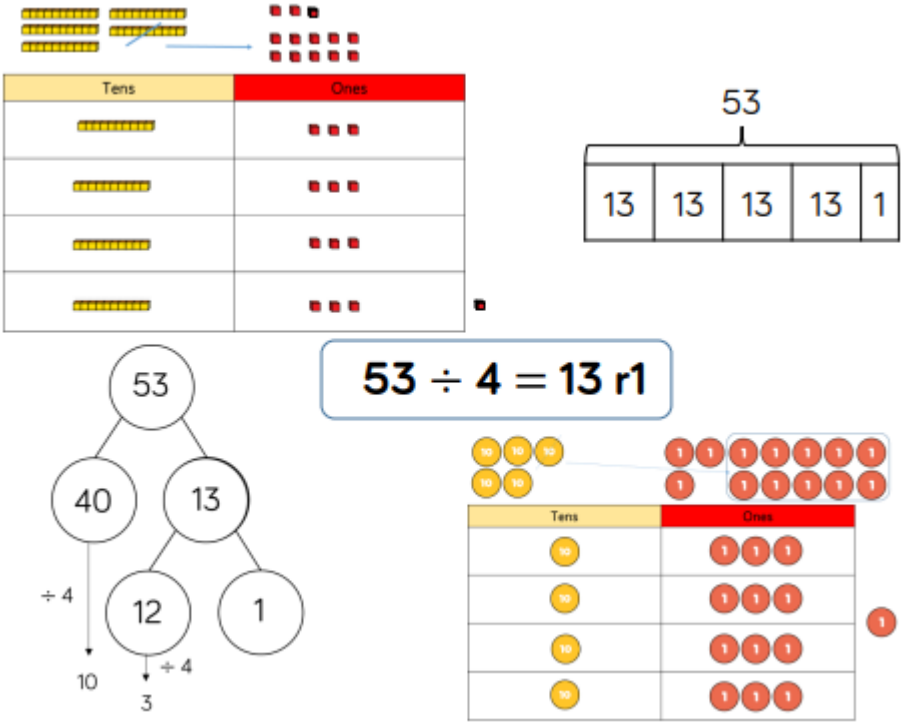
CPA Approach – Calculation Policy

Skill: Solve 1-step problems using multiplication (sharing)	Year 1/2
	Children solve problems by sharing amounts into equal groups. In Year 1, children use concrete and pictorial representations to solve problems. They are not expected to record division formally. In Year 2, children are introduced to the division symbol.
Skill: Solve 1-step problems using division (grouping)	**Year 1/2**
	Children solve problems by grouping and counting the number of groups. Grouping encourages children to count in multiples and links to repeated subtraction on a number line. They can use concrete representations in fixed groups such as number shapes which helps to show the link between multiplication and division.

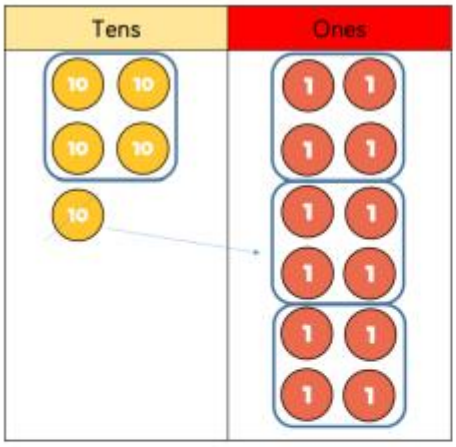
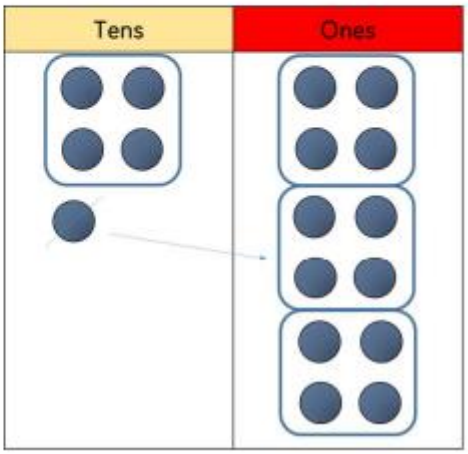
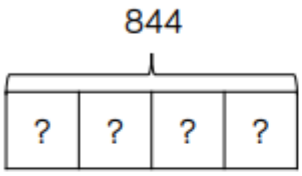
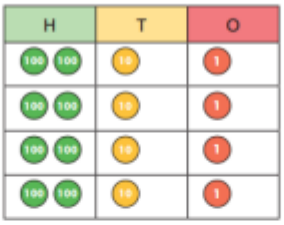
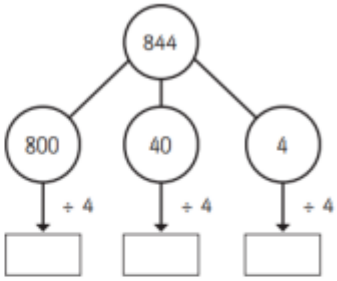
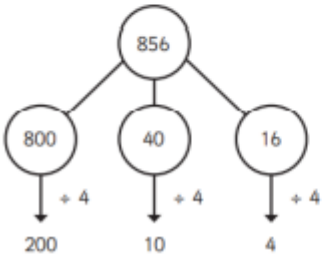
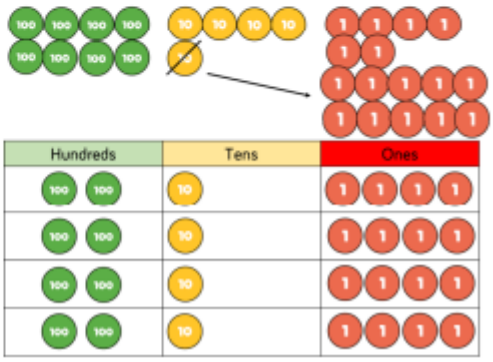
CPA Approach – Calculation Policy

Skill: Divide 2-digits by 1-digit (sharing with no exchange)	Year 3
	When dividing larger numbers, children can use manipulatives that allow them to partition into tens and ones. Straws, Base 10 and place value counters can all be used to share numbers into equal groups. Part-whole models can provide children with a clear written method that matches the concrete representation.

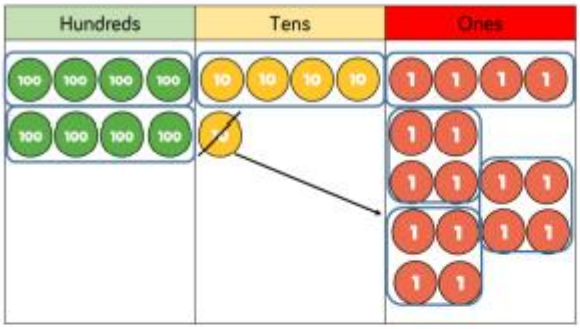
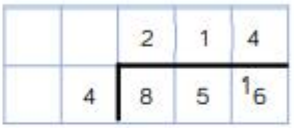
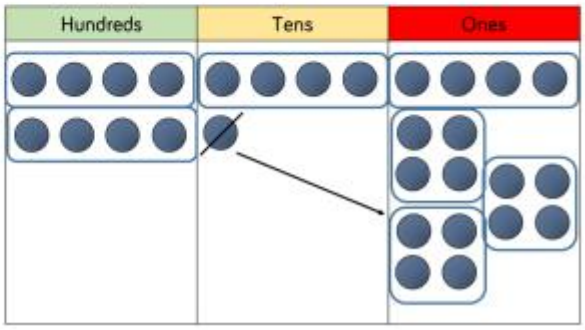
Skill: Divide 2-digits by 1-digit (sharing with exchange)	Year 3/4
	When dividing numbers involving an exchange, children can use Base 10 and place value counters to exchange one ten for ten ones. Children should start with the equipment outside the place value grid before sharing the tens and ones equally between the rows. Flexible partitioning in a part-whole model supports this method.

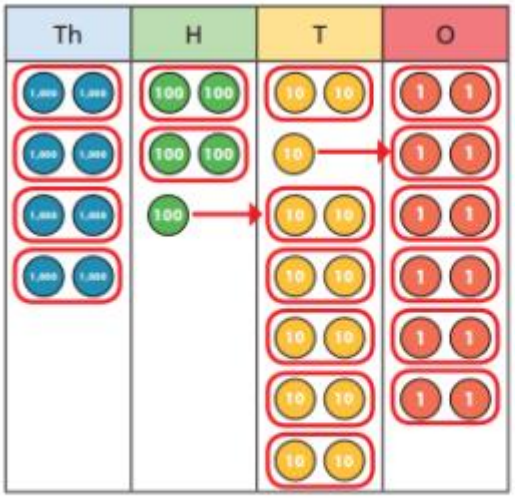
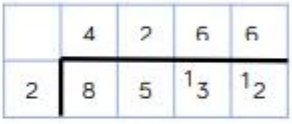
	If children are secure with concrete and pictorial representations, the formal method of short division should be introduced.
Skill: Divide 2-digits by 1-digit (sharing with remainders)	Year ¾
	When dividing numbers with remainders, children can use Base 10 and place value counters to exchange one ten for ten ones. Starting with the equipment outside the place value grid will highlight remainders, as they will be left outside the grid once the equal groups have been made. Flexible partitioning in a part-whole model supports this method. If children are secure with concrete and pictorial representations, the formal method of short division should be introduced. d

CPA Approach – Calculation Policy

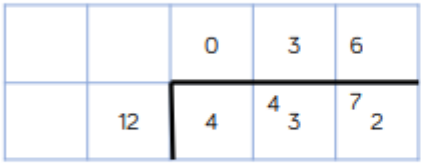
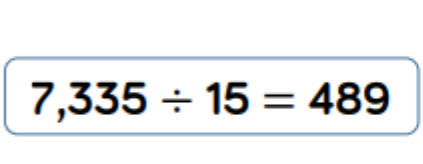
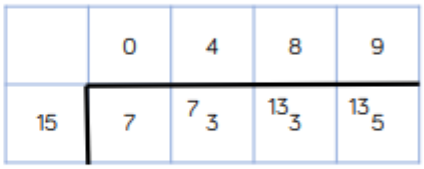
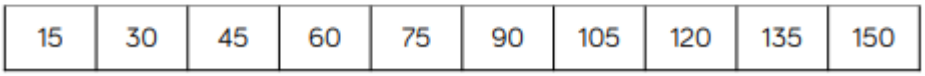
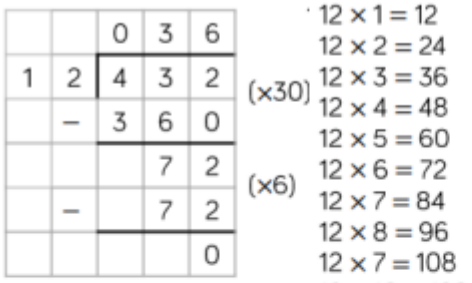
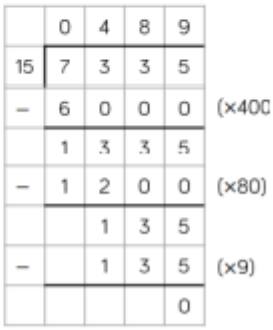
Skill: Divide 2-digits by 1-digit (grouping)	Year 5
   $52 \div 4 = 13$	When using the short division method, children use grouping. Starting with the largest place value, they group by the divisor. Language is important here. Children should consider 'How many groups of 4 tens can we make?' and 'How many groups of 4 ones can we make?' Remainders can also be seen as they are left ungrouped.
Skill: Divide 3-digits by 1-digit (sharing)	**Year: 4**
$844 \div 4 = 211$    $856 \div 4 = 214$  	Children can continue to use place value counters to share 3-digit numbers into equal groups. Children should start with the equipment outside the place value grid before sharing the hundreds, tens and ones equally between the rows. This method can also help to highlight remainders. Flexible partitioning in a part-whole model supports this method.

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Skill: Divide 3-digits by 1-digit (grouping)	Year 5
   $856 \div 4 = 214$	Children can continue to use grouping to support their understanding of short division when dividing a 3-digit number by a 1-digit number. Place value counters or plain counters can be used on a place value grid to support this understanding. Children can also draw their own counters and group them through a more pictorial method.

Skill: Divide 4-digits by 1-digit (grouping)	Year 5
  $8{,}532 \div 2 = 4{,}266$	Place value counters or plain counters can be used on a place value grid to support children to divide 4-digits by 1-digit. Children can also draw their own counters and group them through a more pictorial method. Children should be encouraged to move away from the concrete and pictorial when dividing numbers with multiple exchanges.

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Skill: Divide multi digits by 2-digits (short division)	Year 6
 **432 ÷ 12 = 36**    	When children begin to divide up to 4-digits by 2-digits, written methods become the most accurate as concrete and pictorial representations become less effective. Children can write out multiples to support their calculations with larger remainders. Children will also solve problems with remainders where the quotient can be rounded as appropriate.
Skill: Divide multi-digits by 2-digits (long division)	Year 6
 12 × 1 = 12 12 × 2 = 24 12 × 3 = 36 12 × 4 = 48 12 × 5 = 60 12 × 6 = 72 12 × 7 = 84 12 × 8 = 96 12 × 7 = 108 12 × 10 = 120 **432 ÷ 12 = 36** **7,335 ÷ 15 = 489**  1 × 15 = 15 2 × 15 = 30 3 × 15 = 45 4 × 15 = 60 5 × 15 = 75 10 × 15 = 150	Children can also divide by 2-digit numbers using long division. Children can write out multiples to support their calculations with larger remainders. Children will also solve problems with remainders where the quotient can be rounded as appropriate.
Skill: Divide multi digits by 2-digits (long division)	Year 6

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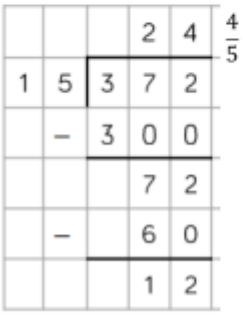
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$372 \div 15 = 24\ r12$



			2	4	r	1	2
1	5	3	7	2			
	–	3	0	0			
			7	2			
	–		6	0			
			1	2			

$1 \times 15 = 15$
$2 \times 15 = 30$
$3 \times 15 = 45$
$4 \times 15 = 60$
$5 \times 15 = 75$
$10 \times 15 = 150$



			2	4	$\frac{4}{5}$
1	5	3	7	2	
	–	3	0	0	
			7	2	
	–		6	0	
			1	2	

$372 \div 15 = 24\frac{4}{5}$

</td>
<td>When a remainder is left at the end of a calculation, children can either leave it as a remainder or convert it to a fraction. This will depend on the context of the question. Children can also answer questions where the quotient needs to be rounded according to the context.</td>
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