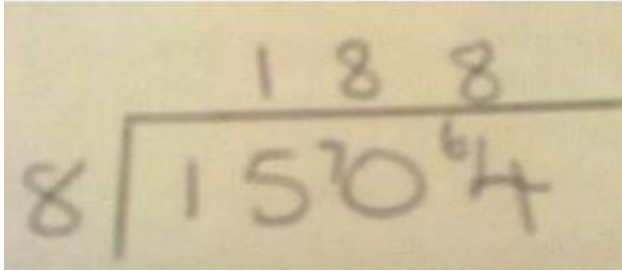


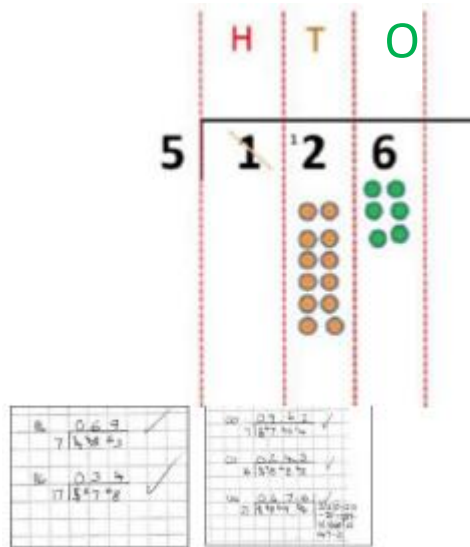
Year 5 and 6 Division	
Year 5	Year 6
Mental strategies	
<p>Children should count regularly using a range of multiples, and powers of 10, 100 and 1000, building fluency.</p> <p>Children should practice and apply the multiplication facts to 12 x 12.</p>	<p>Children should count regularly, building on previous work in previous years. Children should practice and apply the multiplication facts to 12 x 12.</p> <p>Explain the effect of dividing by 1000.</p> <p>Extend methods to include Th HTU by TU.</p> <p>Quotients should be expressed as decimals and fractions</p>
Written methods	
<p>Short division with 'bus stop' notation</p> <p>Recap division without remainders and without carrying</p> <p>Each digit as a multiple of the divisor</p> <p>'How many groups of 3 are there in the hundreds column?'</p> <p>'How many groups of 3 are there in the tens column?'</p> <p>'How many groups of 3 are there in the units/ones column?'</p>	<p>Formal Written Methods –short division E.g. $1504 \div 8$</p>  <p>Continue to use the short division method when the two digit divisor is up to 12 or is a easily recognisable multiple eg 20, 25 or 50.</p> <p>Use a calculator appropriately, approximating first. Use of calculator for interpreting the quotient by entering a fraction to find the decimal equivalent.</p> <p>Use long division only with pupils who are secure with number sense and place value.</p>

Children begin to practically develop their understanding of how express the remainder as a decimal or a fraction. Ensure practical understanding allows children to work through this (e.g. what could I do with this remaining 1? How could I share this between 6 as well?)

Quickly progress onto ‘carrying’ their remainder across to the next digit. Short division to be modelled for understanding using place value counters as shown below. Calculations with 2 and 3-digit dividends. Language of grouping to be used.

Use place value equipment to model.

944 ÷ 22
 “What do I know about the divisor?”
 Record partial tables



The diagram shows a place value chart for the number 5126. The columns are labeled H (Hundreds), T (Tens), and O (Ones). The number 5 is in the thousands column, 1 in the hundreds, 2 in the tens, and 6 in the ones. There are 10 orange beads in the hundreds column and 6 green beads in the ones column. Below the chart are two small grids showing calculations: $5126 \div 12 = 427$ and $5126 \div 12 = 427$ with a remainder of 2.

Model $2544 \div 12$
How many groups of 12 thousands do we have?
None

Exchange 2 thousand for 20 hundreds.

Model

How many groups of 12 are in 25 hundreds? 2 groups. Circle them.
We have grouped 24 hundreds so can take them off and we are left with one.

Exchange the one hundred for ten tens so now we have 14 tens. How many groups of 12 are in 14? 1 remainder 2

Exchange the two tens for twenty ones so now we have 24 ones. How many groups of 12 are in 24? 2

The diagram illustrates the long division of 2544 by 12 using a bead model and corresponding long division steps. It shows the exchange of 2 thousands for 20 hundreds, then 2 hundreds for 20 tens, and finally 2 tens for 20 ones. The final result is 212.

$$12 \overline{) 2544}$$

$$\begin{array}{r} 021 \\ 12 \overline{) 2544} \\ \underline{24} \\ 14 \\ \underline{12} \\ 24 \\ \underline{24} \\ 0 \end{array}$$

Instead of using physical counters, students can draw the counters and circle the groups on a whiteboard or in their books.

Use this method to explain what is happening and as soon as they have understood what move on to the abstract method as this can be a time consuming process.

$$\begin{array}{r}
 0 \quad 3 \quad 1 \quad 8 \quad r5 \\
 20 \overline{) 6365} \\
 \underline{-60} \quad \downarrow \\
 \quad 36 \quad \downarrow \\
 \quad \underline{-20} \quad \downarrow \\
 \quad \quad 165 \\
 \quad \quad \underline{-160} \\
 \quad \quad \quad 5
 \end{array}$$