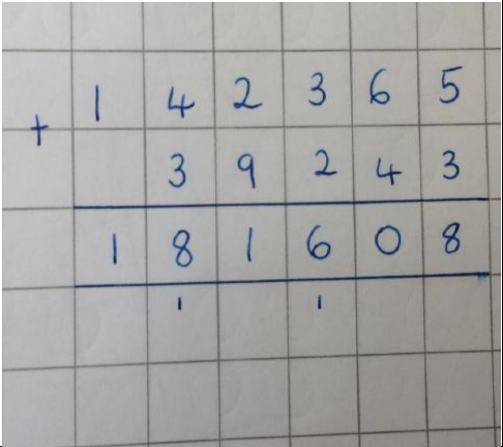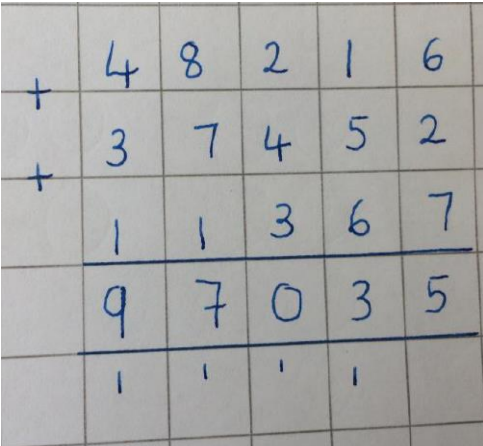# Year Five
Addition

Year Five	Pupils should be able to:
	Pupils should be taught to: • Add whole numbers with more than 4 digits, including using formal written methods (columnar addition)

Compact Columnar Addition

Children should use the column method when adding tens of thousands and hundreds of thousands. As with previous years, children begin by adding the ones, then the tens etc 142365 + 39243= 181608 	Children need to start using the column method to add more than two values 48216 + 37452 + 11367= 97035

Columnar Addition with Decimals

Zero (0) should be used as a place holder to ensure that the numbers are to the same decimal place Zero is added to show there is no value to add	It is important that children recognise that they are adding tenths and hundredths and that they understand they are adding part of a number not a whole number

23.3 + 16.48 = 39.78	19.01 + 3.65 + 0.7= 23.36
23.30 ← Add the place holder + 16.48 39.78	19.01 3.65 + 0.70 ← Add the place holder 23.36

Columnar Addition with Decimals

Formal column method is used to solve problems in the context of measure, for examples, weight and money The decimal point needs to be lined up like all of the other place value columns 26.6 kg + 14.8 kg= 41.4 kg	Children use the column method to add more than two values in the context of measures £19.01+ £3.65 + £ 0.70= £23.36
26.6 kg 14.8 kg 41.4 kg	+ £ 19.01 + £ 3.65 £ 0.70 £ 23.36

Subtraction

Year Five	Pupils should be able to:
	• Subtract whole numbers with more than 4 digits, including using formal written methods (columnar subtractions)

Columnar Subtraction

Children should use the column method when subtracting tens of thousands and hundreds of thousands. As with previous years, children should use place value counter images and drawings to support subtraction

Using previous imagery with place value counters to support regrouping

Columnar Subtraction with Decimals

Zero (0) should be used as a place holder to ensure that the numbers are to the same decimal place
Zero is added to show there is no value to subtract

It is important that children recognise that they are subtracting tenths and hundredths and that they understand they are subtracting part of a number not a whole number

Columnar Subtraction with Decimals in a Range of Contexts
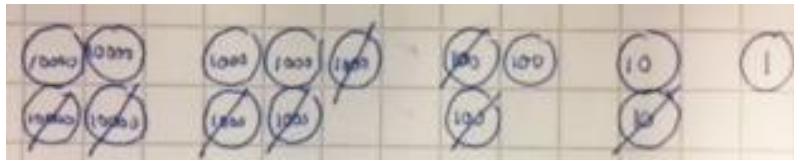
Formal column method is used to solve problems in the context of measure, for examples, weight and money
The decimal point needs to be lined up like all of the other place value columns

Children should use actual coins to subtract or pictorial resources to support understanding (pictures of amounts of weights)

Multiplication

Year Five	Pupils should be able to:
	• multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers

Short Multiplication		
77 x 9= 23 x 6 = TO x O=	658 x 8= HTO x O=	2741 x 6=
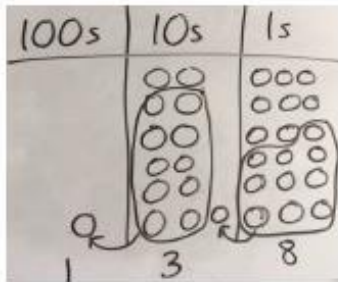
		ThHTO x O=
Answer: 693	Answer: 5264	Answer: 16 446

Expanded Long Multiplication

Expanded long multiplication (two digit numbers multiplied by a teen number)

Expanded long multiplication is the step before long multiplication.

This then leads to long multiplication.
See first example below.

Answer: 299

$23 \times 13 = 299$

$$
\begin{array}{r}
2\ 3 \\
\times\ 1\ 3 \\
\hline
9\quad (3 \times 3) \\
60\quad (3 \times 20) \\
30\quad (10 \times 3) \\
200\quad (10 \times 20) \\
\hline
299
\end{array}
$$

Long Multiplication

Introduce long multiplication for multiplying a number up to four digits by a two digit number	TO x TO= 24 x 16=	When children are confident with long multiplication extend with three digit numbers multiplied by a two digit number

TO x TO=
23 x 13=

23 × 13 = 299

$$\begin{array}{r} 23 \\ \times\ 13 \\ \hline 69 \\ 230 \\ \hline 299 \end{array}$$

Answer: 299

Answer: 384

24 × 16 = 384

$$\begin{array}{r} 24 \\ \times\ 16 \\ \hline 144 \\ 240 \\ \hline 384 \end{array}$$

HTO x TO =
124 x 26 =

124 × 26 = 3224

$$\begin{array}{r} 124 \\ \times\ \ 26 \\ \hline 744 \\ 2480 \\ \hline 3224 \end{array}$$

Answer: 3224

Division

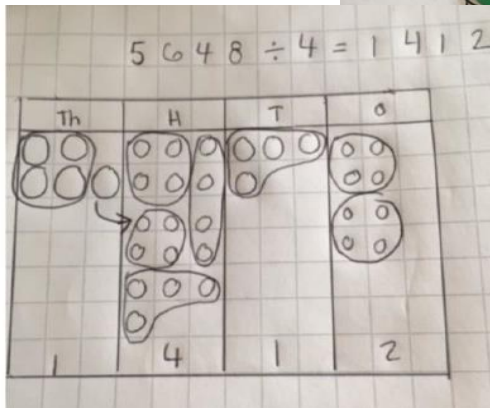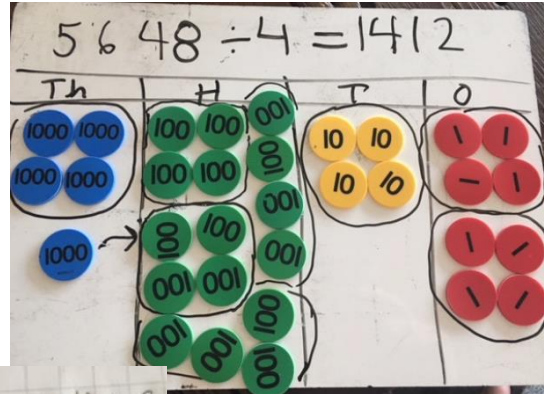| Year Five	Pupils should be able to:
	- Divide numbers mentally, drawing upon known facts - Divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context - Divide whole numbers and those involving decimals by 10, 100 and 1,000 - Solve problems involving division, including using their knowledge - Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign
Formal Short	
	Children can do the same when working out remainders

Children should understand short division as grouping. Start by using concrete resources such as place value counters and pictorial methods to solve

$5648 \div 4 = 1412$

$2753 \div 2 = 1376$ r1

$5648 \div 4 = 1412$