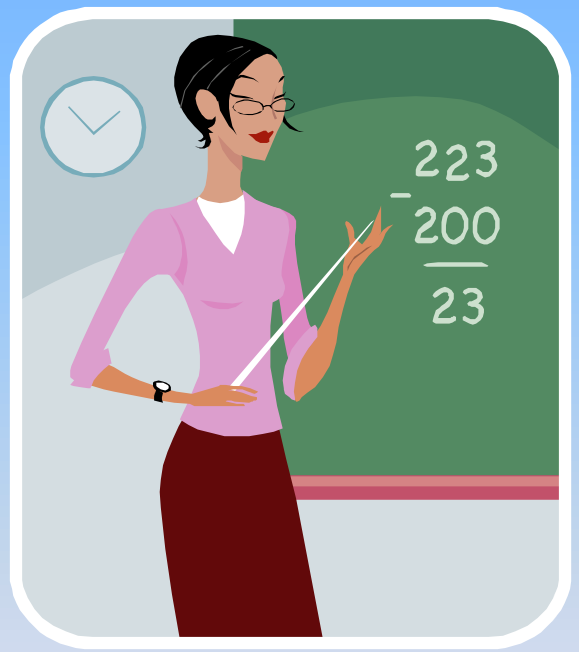
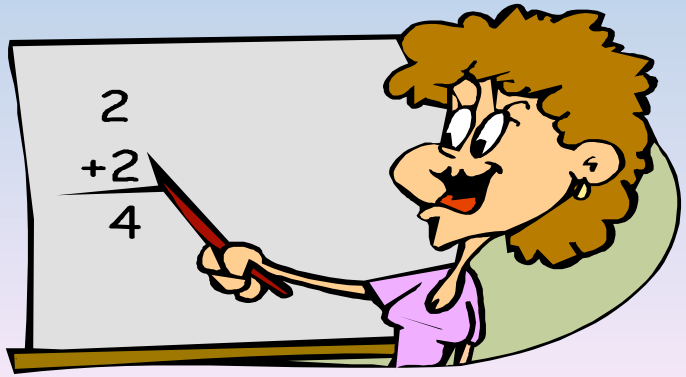
KS 2 Maths Workshop



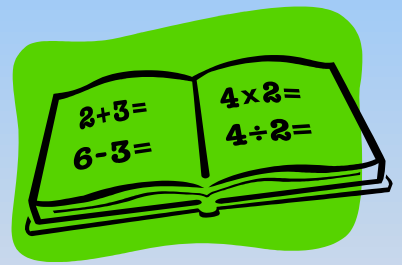
Aims

- To explain some of the methods used in school when teaching addition, subtraction, multiplication and division.
- To share ways in which you can help your child at home and the fun you can have with maths.
- To share some resources that can be used at home.
- Questions



Progression of learning key mathematical concepts Year 1-6







Number, Place Value and Addition and Subtraction

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Counting	Counting to and across 100 forwards and backwards	Counting in steps of 2,3 and 5 from 0 and 10s from any number	Counting from 0 in multiples of 4,8, 50 and 100	Counting in multiples of 6,7,9,25 and 1000	Counting in steps of powers of 10 to 100,000	Counting in steps of powers of 10 to 1,000,000
Place Value	Numbers form 1 to 20	2 digits numbers (10s , 1s)	3-digit number (100s, 10s, 1s)	4-digit numbers (1000s, 100s, 10s, 1s)	Numbers to at least 1,000,000	Numbers up to 10,000,000
Addition and subtraction (mental methods)	1digit and 2digit numbers to 20, including zero.	A 2-digit numbers and ones. A 2-digit number and tens. Two 2- digit numbers. Three 1-digit numbers.	A 3-digit number and 1s. A 3 digit number and 10s. A 3-digit number and 100s.	Increasingly large numbers.	Increasingly large numbers (12,462-2,300=10,162).	Increasingly large numbers and more complex calculations.
Addition and subtraction (formal written methods)			Numbers with up to 3 digits.	Numbers with up to 4-digits.	Whole numbers with more than 4 digits.	Large numbers.

Multiplication and Division

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Multiplication and division tables		2,5 and 10 tables.	2,3,4,5,8 and 10 table .	2,3,4,5,6,7,8,9,10,11 and 12 tables.	2,3,4,5,6,7,8,9,10,11 and 12 tables.	2,3,4,5,6,7,8,9,10,11 and 12 tables.
Multiplication and division (mental methods)	Solve simple 1-step problems, using concrete objects, pictorials representations and arrays with teacher support.	Calculate and write mathematical statements within the 2,5 and 10 tables using multiplication, division and equals symbols.	2-digit numbers times 1-digit numbers.	Multiplying by 0 and 1. Dividing by 1. Multiplying together 3 numbers.	Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000.	Increasing large numbers and more complex calculations.
Multiplication and division (formal written methods)			2-digit numbers times 1-digit numbers, progressing to efficient written methods	Multiply 2-digit and 3-digit numbers by a 1- digit number	Multiply up to 4-digit numbers by a 1- or 2-digit number, including long multiplication for 2-digit numbers . Divide up to 4- digit numbers by a 1-digit number, using short division.	Multiply up to 4-digit numbers by a 2-digit number, using long multiplication. Divide up to 4- digit numbers by a 2-digit whole number, using long division.

Fractions, Decimal and Percentages

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Fractions	A half and a quarter of an object, shape or quantity.	1/3, 1/4, 2/4 and 3/4 of length, shape, set of objects or quantity. Equivalent fractions. Write simple fractions (1/2 of 6= 3).	Tenths Unit fractions and non unit fractions with small denominators. Fractions as numbers. Equivalent fractions. Add and subtract fractions with the same denominator within one whole.	Hundredths Equivalent fractions. Add and subtract fractions with the same denominator.	Mixed numbers and improper fractions. Add and subtract fractions with the same denominator and related fractions. Write mathematical statements > 1 as a mixed number. Multiply proper fractions and mixed numbers by whole numbers.	Simplifying fractions. Equivalent fractions. Add and subtract fractions with different denominators and mixed numbers. Multiply proper fractions writing answers in simplest form. Divide proper fractions by whole numbers.
Fractions, decimals and percentages				Decimal equivalents of tenths and hundredths. Decimal equivalents of ¼, ½ and ¾ . Round numbers to 1 dp to the nearest whole number. Compare numbers with the same number of decimal places up to 2dp .	Decimal equivalents of thousandths, hundredths and tenths. Round decimals to 2 dp to the nearest 1dp and whole number. Compare numbers with up to 3 dp. Write percentage as a fraction and a decimal.	Multiply 1-digit numbers with up to 2 dp whole numbers. Use written division methods where answers has up to 2dop. Calculate percentages of whole numbers or measure (15% of 360) . Equivalents between simple fractions, decimals and percentages.

Measurement

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Measurement	-Compare, describe and solve practical problems for length, height, mass, weight, capacity/ volume and time. -Measure and begin to record measurements. -Different denominations of coins and notes. -Use language of time. -Tell the time to the hour and half past.	-Standard units for length, height, mass, temperature and capacity. -Recognise and use symbols £ and p -Add and subtract money including giving change. -Tell and write the time to 5 minutes, including quarter past and quarter to.	-Measure, compare, add and subtract lengths, mass, volume/ capacity. -Perimeter of simple 2D shapes -Add and subtract money, using both £ and p. -Tell the time, including Roman numerals from I to XII, and on 12 hour and 24 hour clocks.	-Convert between units of measure. -measure and calculate perimeter of rectilinear shapes. -Find area of rectilinear shapes by counting. -Convert time between analogue and digital 12 hour and 24 hour clocks. -Convert between units of time.	-Convert between units of measure. -Equivalent metric and imperial measures. - Measure and calculate perimeter of composite rectilinear shapes. -Calculate area of squares and rectangles. -convert between units of time. -Volume and capacity.	-Convert between units of measure, using decimal notation to 3 dp. -convert between miles and kilometres. -Shapes with the same perimeter have different areas. -Calculate area of parallelograms and triangles. -Use formulae for area and volume. -Volume standard units.

Geometry

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Geometry	-Common 2D and 2D shapes. -Objects and shapes in patterns. -Half, quarter and 3-qurater turns.	Properties of 2D shapes (including symmetry) and 3D shapes. -Objects and shapes in patterns. -half, quarter and 3 quarter turns (clockwise and anti0clockwise) and movement in a straight line.	-Draw 2D and make 3D shapes. -Angles as a property of shape. -Right angles -Identify whether angles are greater or less than a right angle . -Horizontal, vertical, perpendicular and parallel lines.	-Classify quadrilaterals and triangles. -Identify acute and obtuse angles. -Identify lines of symmetry in 2D shapes. -Complete a simple symmetric shape. -Coordinate grid (1st quadrant) -Translation	-Identify 3D shapes from 2D representation. -Measure and draw angles in degrees. -identify: multiples of 90%; angles at a point: reflex angles. -regular and irregular polygons -reflect or translate a shape on a coordinate grid (1st quadrant)	-Build 3D shapes, including making nets . -Classify shapes -Find unknown angles in triangles, quadrilaterals and regular polygons -Circles: circumference, radius and diameter. -Find unknown angles at a point, on a straight line, vertically opposite. -Coordinates (all four quadrants) -translate and reflect shapes on coordinate grid

Addition

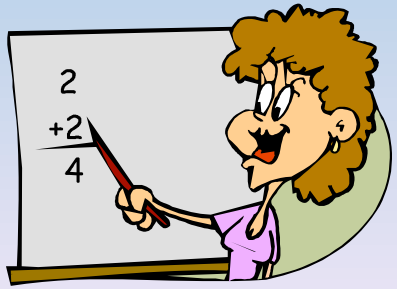
Sum

total

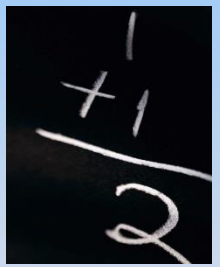
increase

together

total







Addition in Year 3

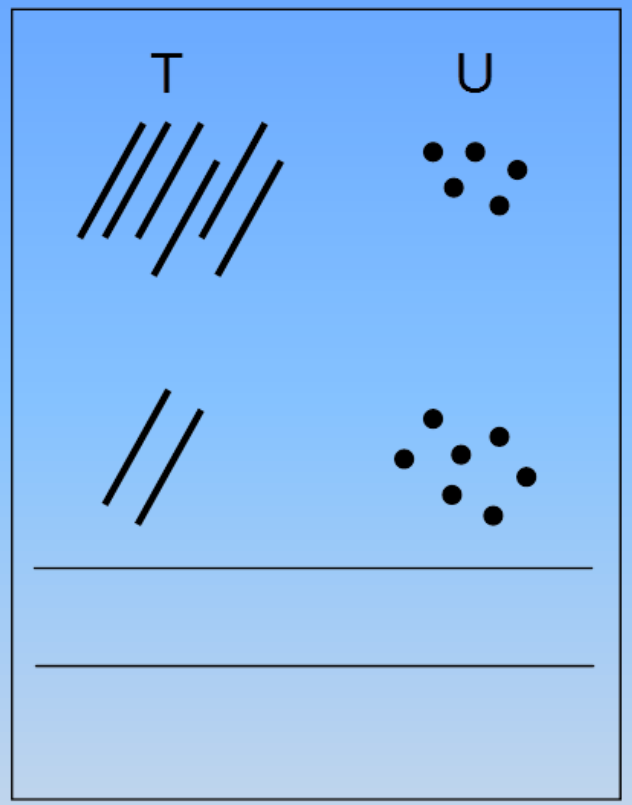
Children will build on their knowledge of using Base 10 equipment from Y2 and continue to use the idea of exchange.

Children should add the **least significant digits** first (i.e. start with the units/ones), and in an identical method to that from year 2, should identify whether there are greater than ten units which can be exchanged for one ten.

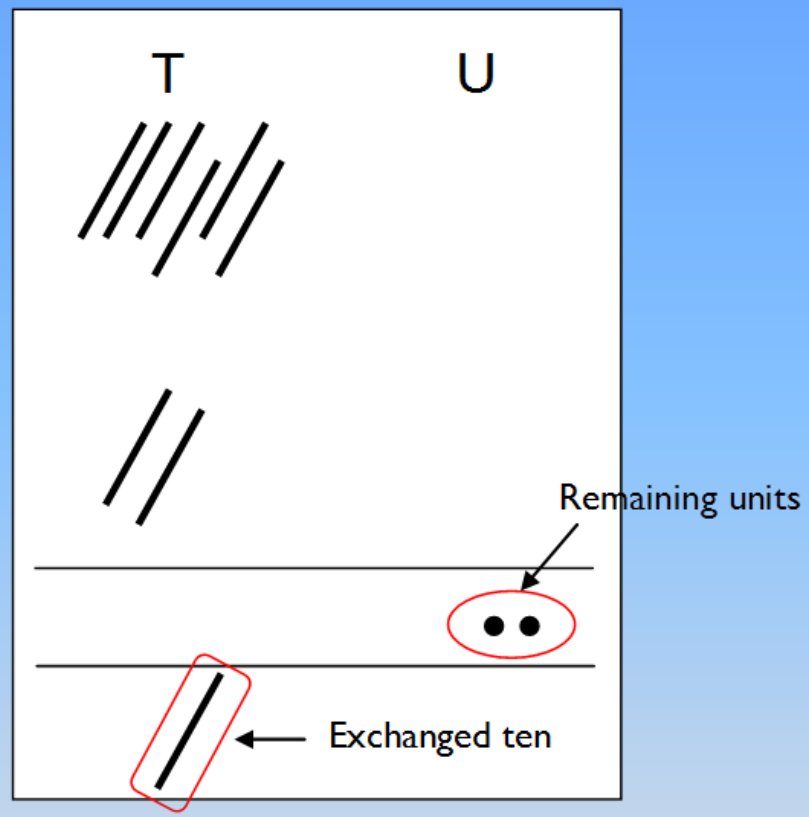
They can use a place value grid to begin to set the calculation out vertically and to support their knowledge of exchange between columns.

e.g. 65 + 27

Step 1



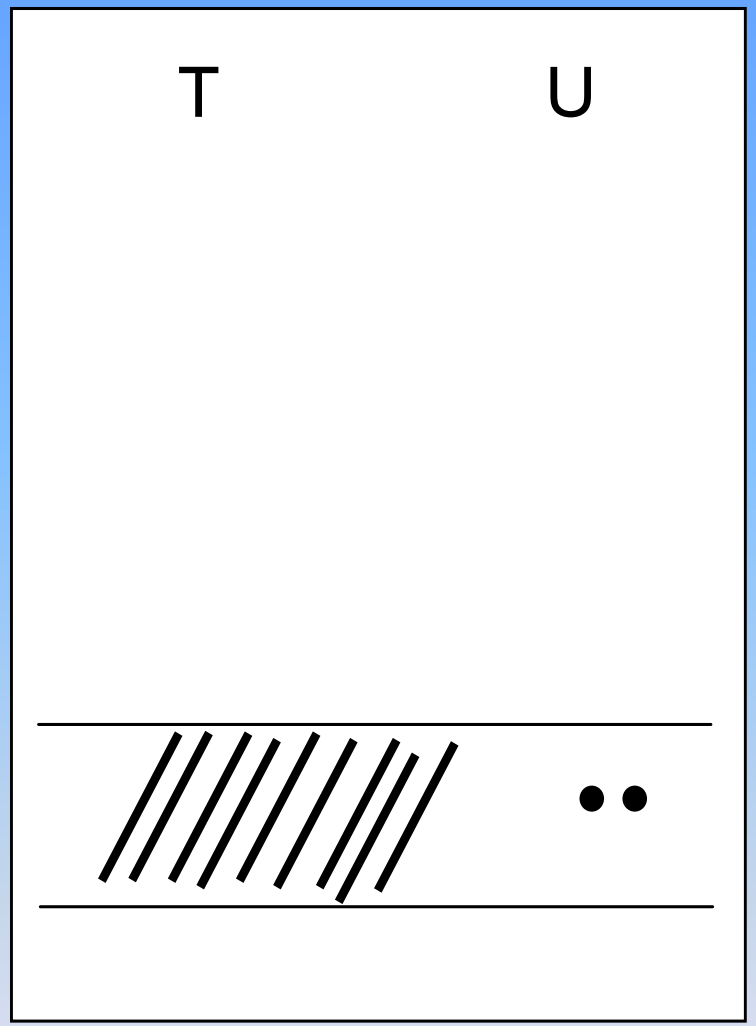
Step 2



Children would exchange ten units/ones for a ten, placing the exchanged ten below the equals sign. Any remaining units/ones that cannot be exchanged for a ten move into the equals sign as they are the units part of the answer (as in the diagram in Step 2 above).

If there are any tens that can be exchanged for a hundred, this can be done next. If not, the tens move into the equals sign as they are the tens part of the answer (as in the diagram in Step 3 below).

Step 3



Written method

Step 1

	T	U
	6	5
+	2	7

Step 2

	T	U
	6	5
+	2	7
		2
	1	

Step 3

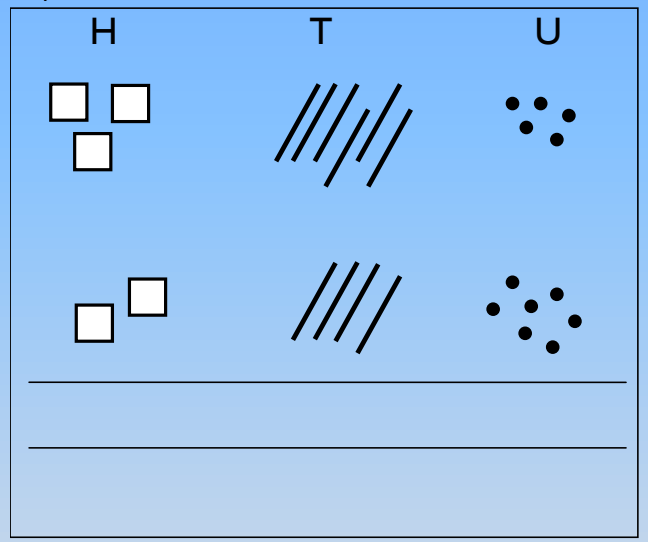
	T	U
	6	5
+	2	7
	9	2
	1	

Children should utilise this practical method to link their understanding of exchange to how the column method is set out. Teachers should model the written method alongside this practical method initially.

Addition in year 4

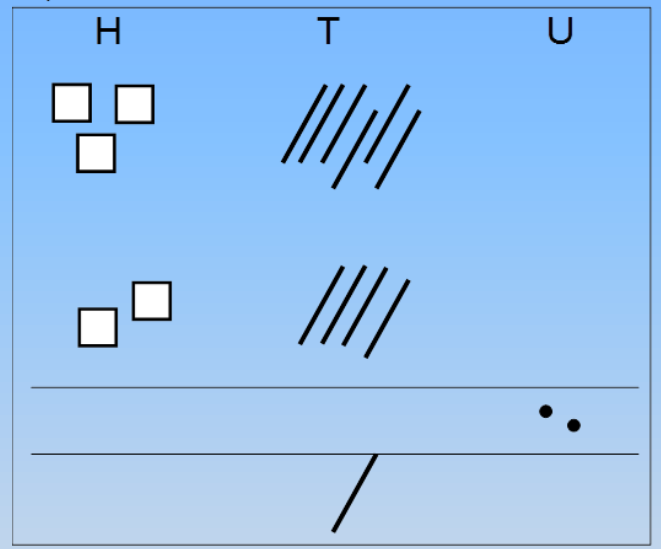
Children will move to year 4 using the method they were using as they transitioned from year 3.

Step 1



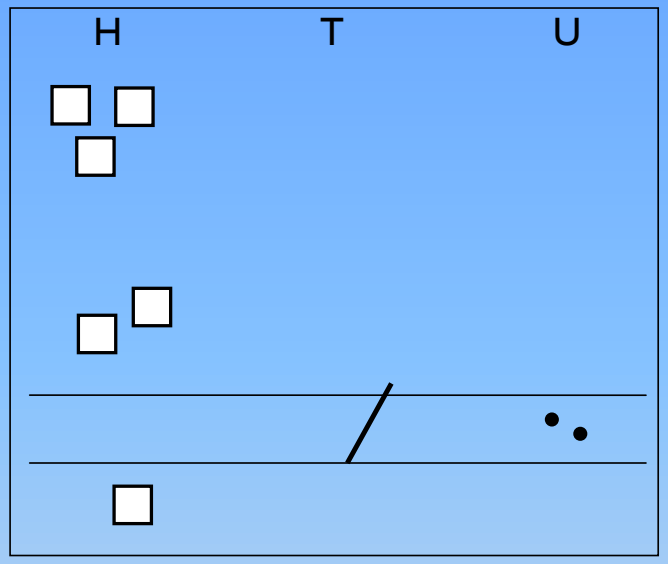
	H	T	U
	3	6	5
+	2	4	7

Step 2



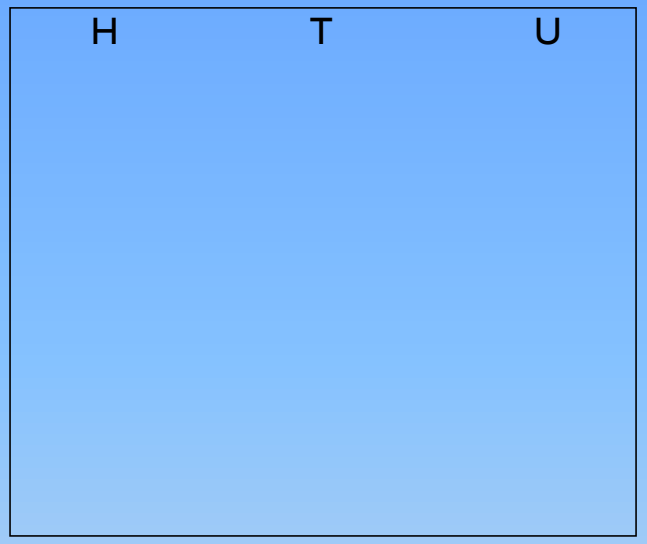
	H	T	U
	3	6	5
+	2	4	7
			2
		1	

Step 3



	H	T	U
	3	6	5
+	2	4	7
		1	2
	1	1	

Step 4



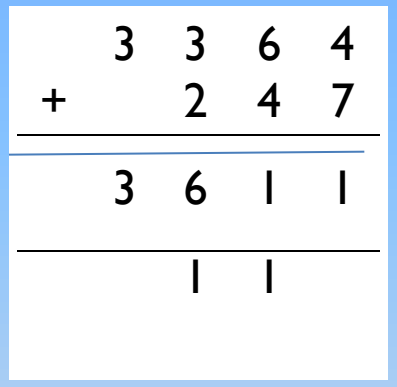
	H	T	U
	3	6	5
+	2	4	7
	6	1	2
	1	1	

By the end of year 4, children should be using the written method confidently and with understanding. They will also be adding:

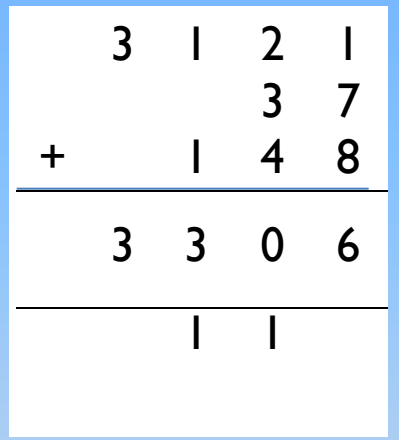
- several numbers with different numbers of digits, understanding the place value
- decimals with one decimal place, knowing that the decimal points line up under one another

Addition in Year 5

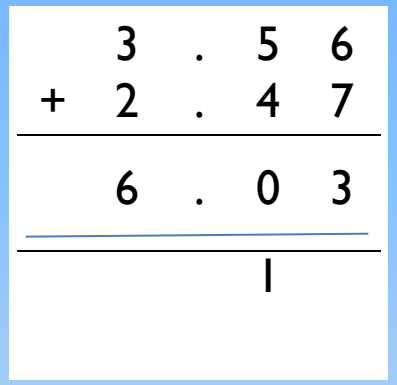
Children should continue to use the carrying method to solve calculations such as:



	3	3	6	4
+		2	4	7
	3	6	1	1
		1	1	



	3	1	2	1
			3	7
+		1	4	8
	3	3	0	6
		1	1	



	3	.	5	6
+	2	.	4	7
	6	.	0	3
			1	

They will also be adding:

- several numbers with different numbers of digits, understanding the place value;
- *decimals with up to two decimal places (with each number having the same number of decimal places), knowing that the decimal points line up under one another.*
- amounts of money and measures, including those where they have to initially convert from one unit to another

Addition in Year 6

Children should extend the carrying method and use it to add whole numbers and decimals with any number of digits.

				4	2
		6	4	3	2
			7	8	6
					3
+			4	6	8	1
	1	1	9	4	4
	1	1	2	1	

	4	0	1	.	2	0
		2	6	.	8	5
+			0	.	7	1
	4	2	8	.	7	6
			1			

When adding decimals with different numbers of decimal places, children should be taught and encouraged to make them the same through identification that 2 tenths is the same as 20 hundredths, therefore, 0.2 is the same value as 0.20.

They will also be adding:

- several numbers with different numbers of digits, understanding the place value;
- *decimals with up to two decimal places (with mixed numbers of decimal places), knowing that the decimal points line up under one another.*
- amounts of money and measures, including those where they have to initially convert from one unit to another.

Subtraction

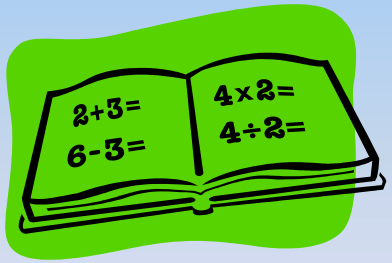
decrease

fewer

difference

reduce

take away



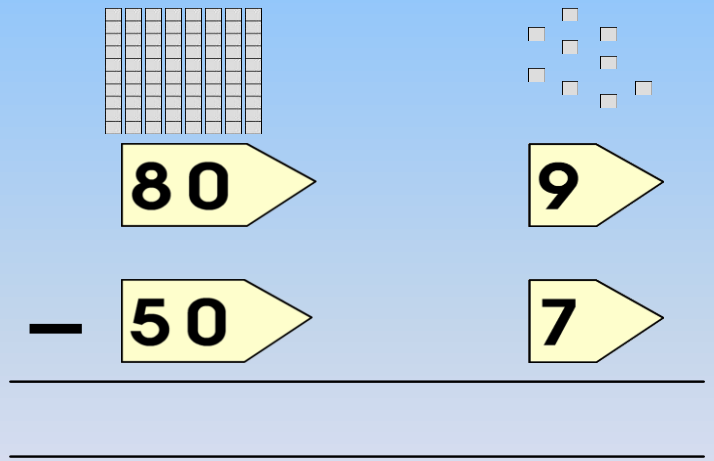




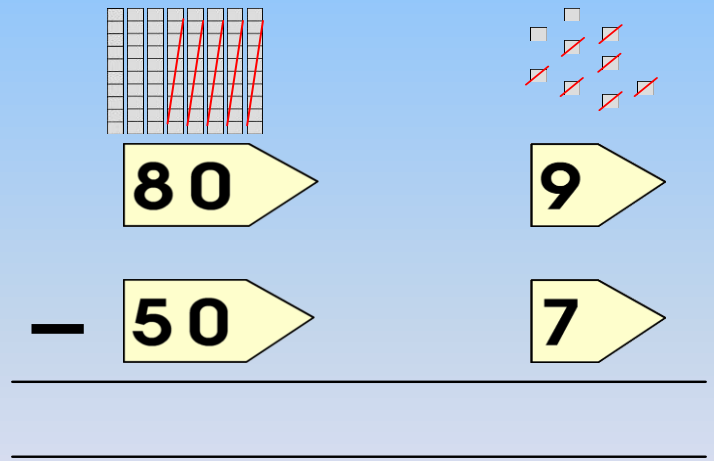
Subtraction in Year 3

Children will build on their knowledge of using Base 10 equipment from Y2 and continue to use the idea of exchange. This process should be demonstrated using arrow cards to show the partitioning and Base 10 materials to represent the first number, removing the units and tens as appropriate

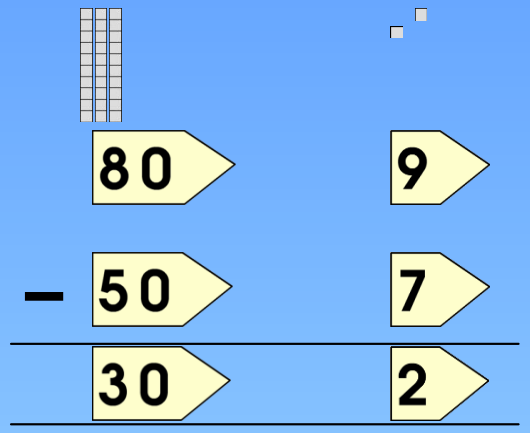
Step 1



Step 2



Step 3



Emphasise that the second (bottom) number is being subtracted from the first (top) number rather than the lesser number from the greater.

This will be recorded by the children as:

	80	→	9	
-	50	→	7	
	30	→	2	= 32

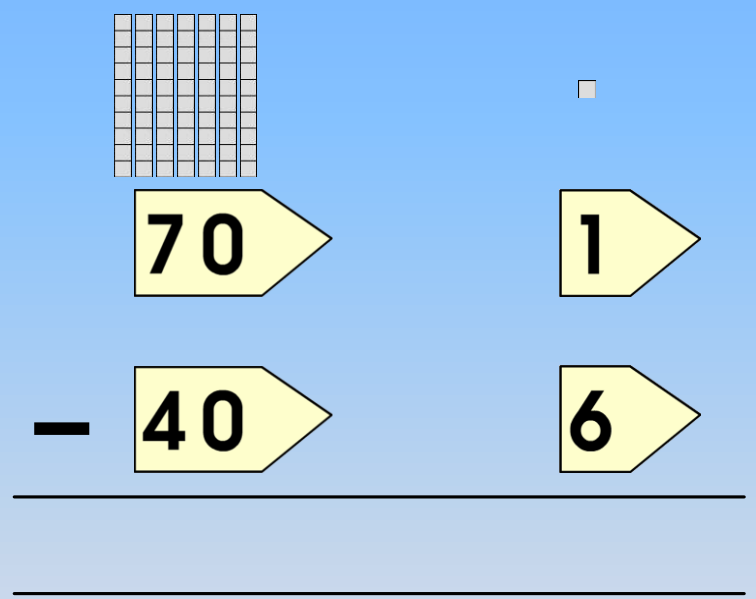
Children can also use jottings of the Base 10 materials to support with their calculation, as in the example below.



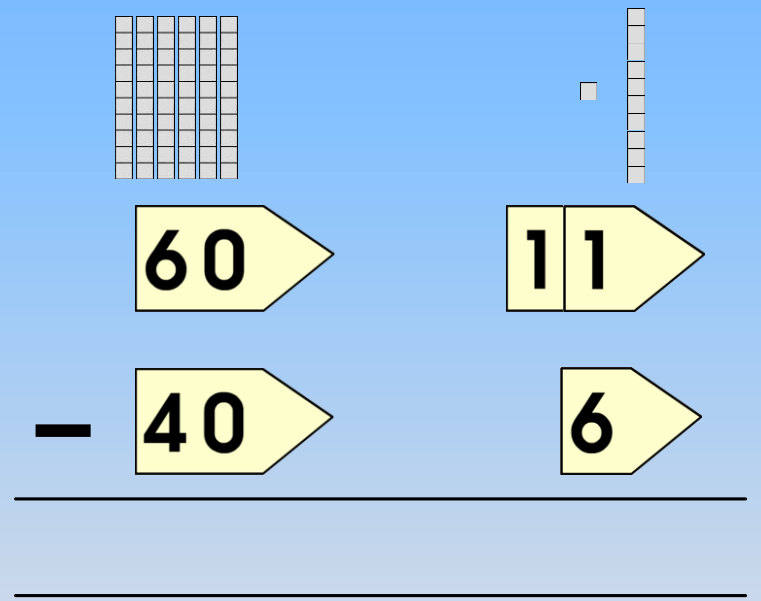
	80	→	9	
-	50	→	7	
	30	→	2	= 32

From this the children will begin to solve problems which involve exchange. Children need to consider whether there are enough units/ones to remove 6. In this case there are not (Step 1) so they need to exchange a ten into ten ones to make sure that there are enough. They should be able to see that the number is just partitioned in a different way, but the amount remains the same (71 = 70 + 1 = 60 + 11).

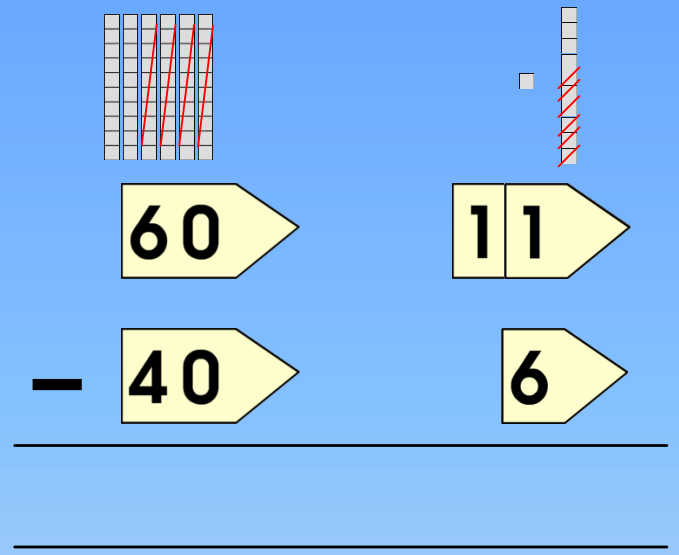
Step 1



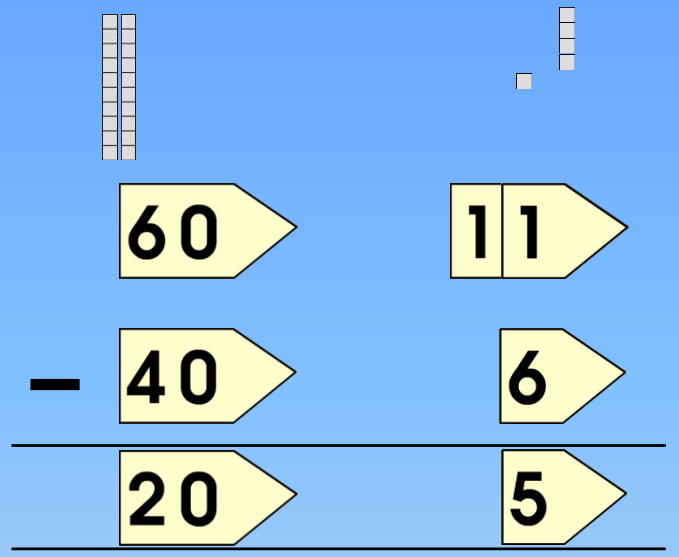
Step 2



Step 3



Step 4



This will be recorded by the children as:

```
   60
   ~~7~~0  →  11
-  40   →   6
-------------
   20   →   5   =  25
-------------
```

By the end of year 3, children should also extend this method for three digit numbers.

Subtraction in Year 4

Children will move to Y4 using the method they were using as they transitioned from Y3.

Step 1

	700	→	50	→	4
-	200	→	80	→	6

Step 2 (exchanging from tens to units)

			40		
	700	→	~~50~~	→	$^{1}4$
-	200	→	80	→	6

Step 3 (exchanging from hundreds to tens)

	600		140		
	~~700~~	→	~~50~~	→	$^{1}4$
-	200	→	80	→	6

Step 4

	600		140			
	~~700~~	→	~~50~~	→	$^{1}4$	
-	200	→	80	→	6	
	400	→	60	→	8	= 468

When children are ready, this leads on to the compact method of decomposition:

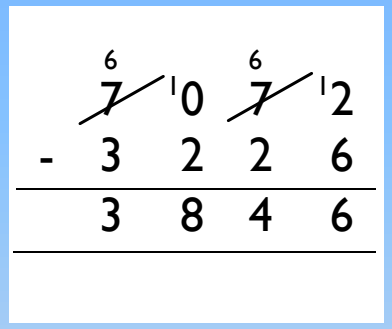
$$\begin{array}{rcccc} & & {\scriptstyle 6} & {\scriptstyle 14} & \\ & 4 & \cancel{7} & \cancel{5} & {}^{1}4 \\ - & 3 & 2 & 8 & 6 \\ \hline & 1 & 4 & 6 & 8 \end{array}$$

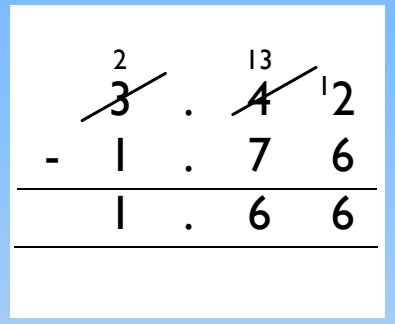
By the end of Y4, children should be using the written method confidently and with understanding. They will also be subtracting:

- numbers with different numbers of digits, understanding the place value;
- *decimals with one decimal place, knowing that the decimal points line up under one another.*

Subtraction n in Year 5

Children should continue to use the decomposition method to solve calculations such as:



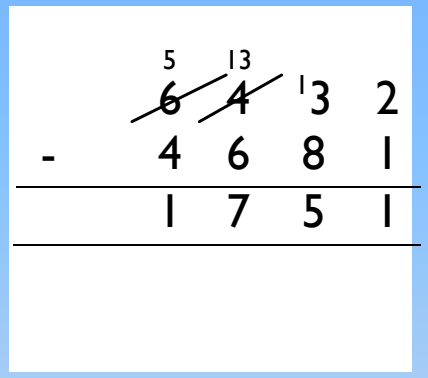


They will also be subtracting:

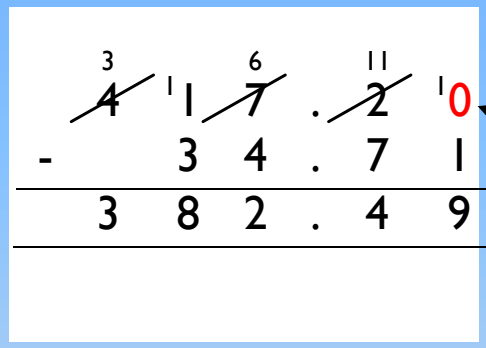
- numbers with different numbers of digits, understanding the place value;
- *decimals with up to two decimal places (with each number having the same number of decimal places), knowing that the decimal points line up under one another.*
- amounts of money and measures, including those where they have to initially convert from one unit to another

Subtraction in Year 6

Children should extend the decomposition method and use it to subtract whole numbers and decimals with any number of digits.



$$\begin{array}{r} {}^{5}\cancel{6}\;{}^{13}\cancel{4}\;{}^{1}3\;\;2 \\ -\quad 4\;\;6\;\;8\;\;1 \\ \hline 1\;\;7\;\;5\;\;1 \end{array}$$



$$\begin{array}{r} {}^{3}\cancel{4}\;{}^{1}1\;{}^{6}\cancel{7}\;.\;{}^{11}\cancel{2}\;{}^{1}0 \\ -\quad 3\;\;4\;.\;7\;\;1 \\ \hline 3\;\;8\;\;2\;.\;4\;\;9 \end{array}$$

When subtracting decimals with different numbers of decimal places, children should be taught and encouraged to make them the same through identification that 2 tenths is the same as 20 hundredths, therefore, 0.2 is the same value as 0.20.

They will also be subtracting:

- numbers with different numbers of digits, understanding the place value;
- *decimals with up to two decimal places (with mixed numbers of decimal places), knowing that the decimal points line up under one another.*
- amounts of money and measures, including those where they have to initially convert from one unit to another.

Multiplication

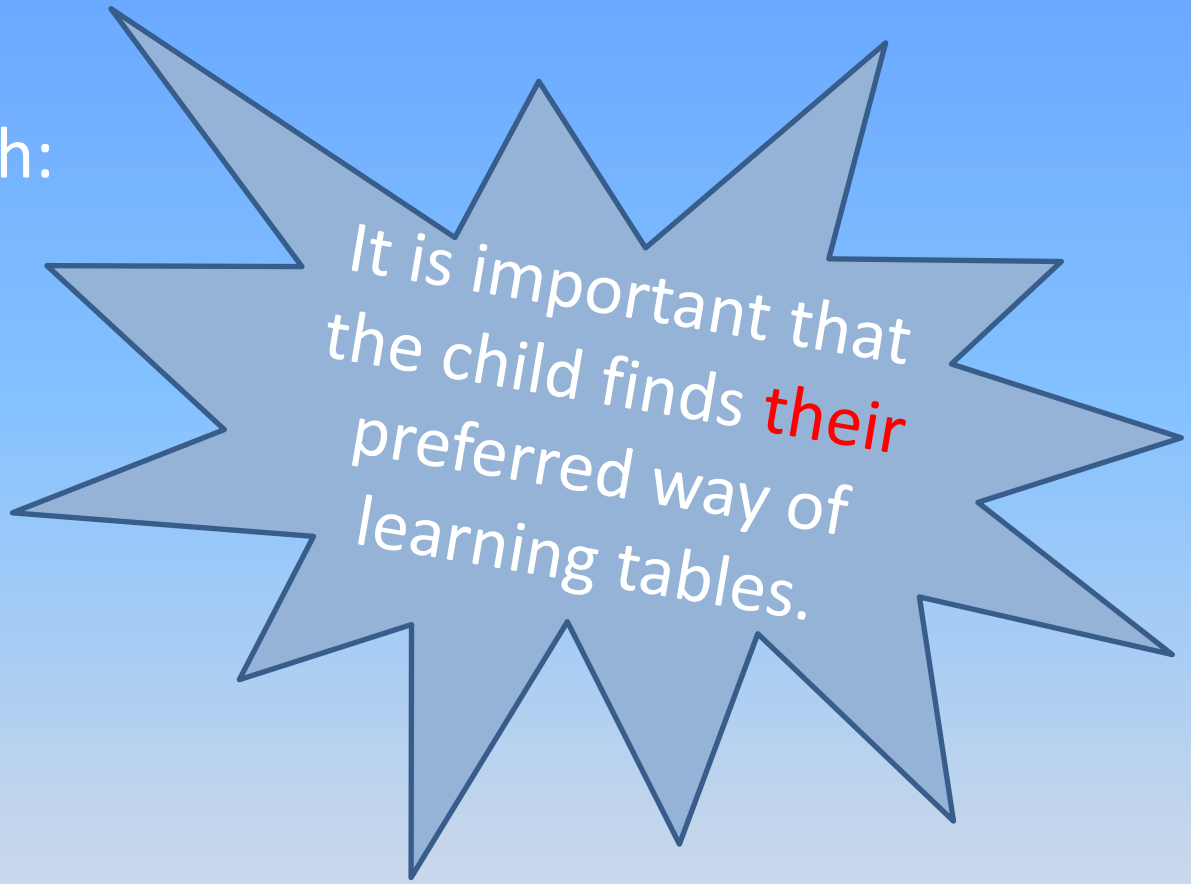
lots of times multiply multiple



Times Tables

Children will be learning tables through:

- Songs
- Posters
- Patterns
- Regular practice
- Rote learning
- Writing them down



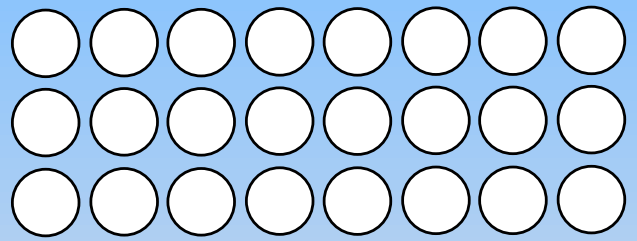
Understanding multiplication comes from the child understanding that X means ‘lots of’.

Multiplication in Year 3

Initially, children will continue to use arrays where appropriate linked to the multiplication tables that they know (2, 3, 4, 5, 8 and 10), e.g.

3 x 8

They may show this using practical equipment:



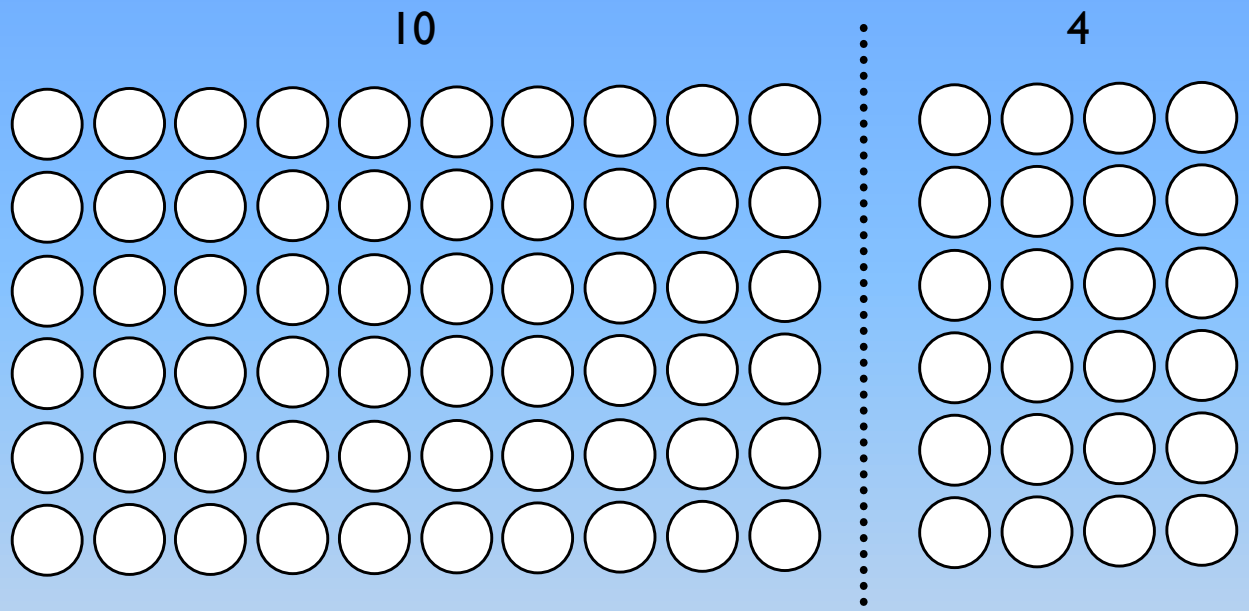
3 x 8 = 8 + 8 + 8 = 24

or by jottings using squared paper:

	x	x	x	x	x	x	x	x	
	x	x	x	x	x	x	x	x	
	x	x	x	x	x	x	x	x	

3 x 8 = 8 + 8 + 8 = 24

As they progress to multiplying a two-digit number by a single digit number, children should use their knowledge of partitioning two digit numbers into tens and units/ones to help them. For example, when calculating 14 x 6, children should set out the array, then partition the array so that one array has ten columns and the other four.



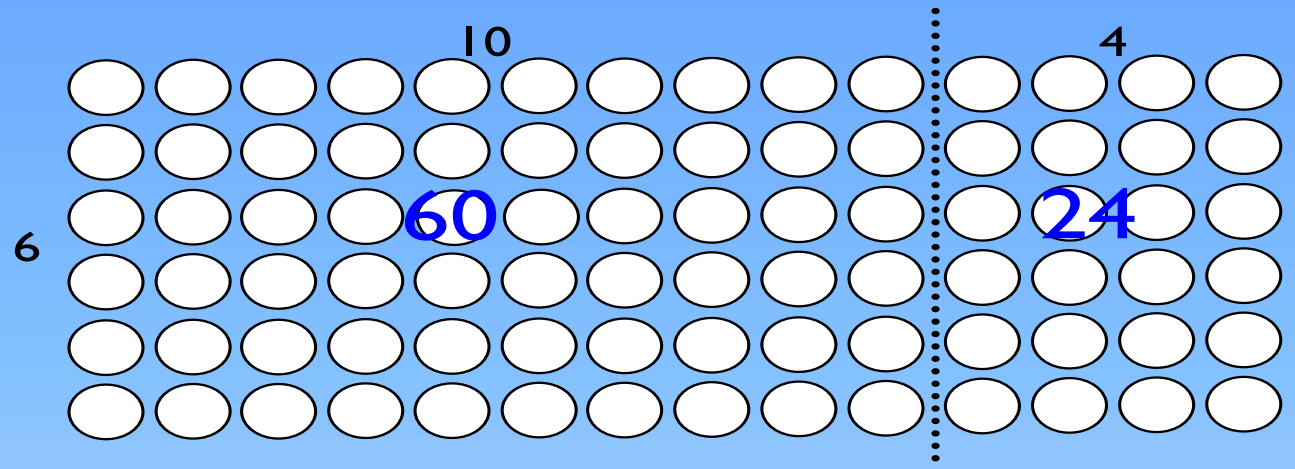
Partitioning in this way, allows children to identify that the first array shows 10 x 6 and the second array shows 4 x 6. These can then be added to calculate the answer:

(6 x 10) + (6 x 4)

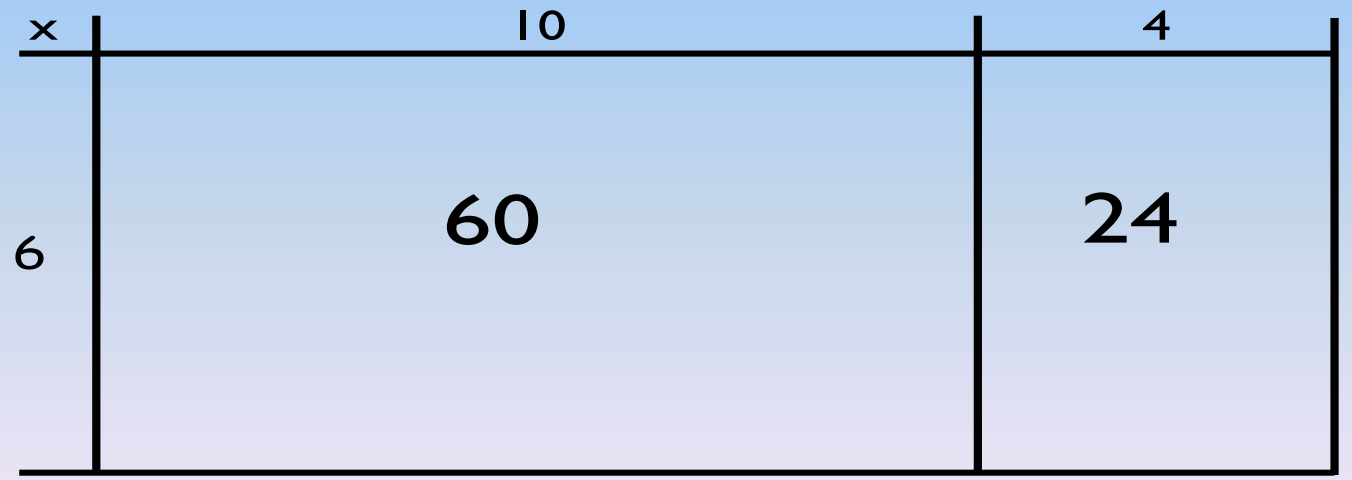
= 60 + 24

= 84

This method leads into the grid method. Using a two-digit by single digit array, they can partition as above, identifying the number of rows and the number of columns each side of the partition line.



By placing a box around the array, as in the example below, and by removing the array, the grid method can be seen.



It is really important that children are confident with representing multiplication statements as arrays and understand the rows and columns structure before they develop the written method of recording.

From this, children can use the grid method to calculate two-digit by one-digit multiplication calculations, initially with two digit numbers less than 20. Children should be encouraged to set out their addition in a column at the side to ensure the place value is maintained. When children are working with numbers where they can confidently and correctly calculate the addition mentally, they may do so.

13 x 8

x	10	3
8	80	24

$$\begin{array}{r} 80 \\ +\ 24 \\ \hline 104 \end{array}$$

When children are ready, they can then progress to using this method with other two-digit numbers.

37 x 6

x	30	7
6	180	42

$$\begin{array}{r} 180 \\ +\ 42 \\ \hline 222 \end{array}$$

Children should also be using this method to solve problems and multiply numbers in the context of money or measures.

Multiplication in Year 4

They will further develop their knowledge of the grid method to multiply any two-digit by any single-digit number, e.g.

79 x 8

x	70	9
8	560	72

$$\begin{array}{rr} & 560 \\ + & 72 \\ \hline & 632 \end{array}$$

To support the grid method, children should develop their understanding of place value and facts that are linked to their knowledge of tables. For example, in the calculation above, children should use their knowledge that 7 x 8 = 56 to know that 70 x 8 = 560.

By the end of the year, they will extend their use of the grid method to be able to multiply three-digit numbers by a single digit number, e.g.

346 x 8

x	300	40	6
8	2400	320	48

$$\begin{array}{rr} & 2400 \\ + & 320 \\ + & 48 \\ \hline & 2768 \end{array}$$

When children are working with numbers where they can confidently and correctly calculate the addition (or parts of the addition) mentally, they may do so.

Children should also be using this method to solve problems and multiply numbers in the context of money or measures.

Multiplication in Year 5

Children should continue to use the grid method and extend it to multiplying numbers with up to four digits by a single digit number, e.g.

4346 x 8

x	4 000	300	40	6
8	32 000	2400	320	48

	32000
+	2400
+	320
+	48
	34768

Numbers with up to four digits by a two-digit number, e.g.

2693 x 24

x	2000	600	90	3
20	40000	12000	1800	60
4	8000	2400	360	12

	40000
+	8000
+	12000
+	2400
+	1800
+	360
+	60
+	12
	64632

When children are working with numbers where they can confidently and correctly calculate the addition (or parts of the addition) mentally, they may do so.

Children should also be using this method to solve problems and multiply numbers in the context of money or measures.

Multiplication in Year 6

By the end of Y6, children should be able to use the grid method to multiply any number by a two-digit number. They should also develop the method to be able to multiply decimal numbers with up to two decimal places, e.g.

4.92 x 3

x	4	0.9	0.02
3	12	2.7	0.06

$$\begin{array}{rr} & 12 \\ + & 2.7 \\ + & 0.06 \\ \hline & 14.76 \\ \hline \end{array}$$

When children are working with numbers where they can confidently and correctly calculate the addition (or parts of the addition) mentally, they may do so.

Children should also be using this method to solve problems and multiply numbers, including those with decimals, in the context of money or measures, e.g. to calculate the cost of 7 items at £8.63 each, or the total length of six pieces of ribbon of 2.28m each.

THE “COLUMN” METHOD

This method will only be introduced in Upper KS2 when children are secure in the gird method.

- This is the method which you are all probably more familiar with.
- The children need to be confident with the order in which they carry out this process.
- The most important thing for them to remember is to put the ‘0’ on the second row if they are multiplying by a 2 digit number.

STEP 1

- Write the multiplication out, placing the largest number above the smallest, ensuring that the digits are in the correct columns.

345
x 56

STEP 2

- Multiply the unit on the bottom row by all of digits above it.

$$\begin{array}{r} 345 \\ \times\ 56 \\ \hline 2070 \\ \hline \end{array}$$

1 2 3

STEP 3

- Place a ‘0’ in the next row in the units column (we do this to ‘hold the place’).
- Now repeat the same action with the digit in the tens column.

```
  345
x  56
 2070
17250
 1 2 2
```

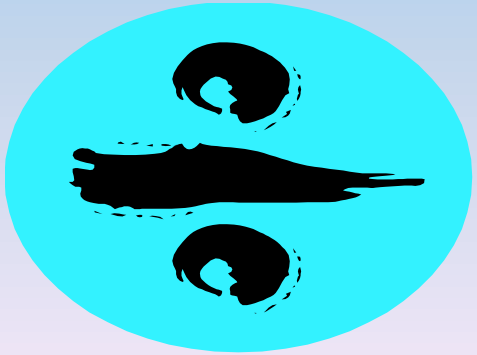
STEP 4

- Now use column addition to add together the two new rows which you have just created - this is your answer!

345
x 56
2070
17250
19320

Division

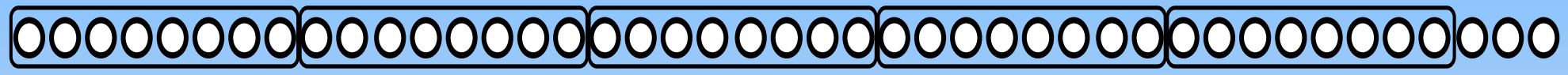
divide share group equally



Division in Year 3

Children will use division by grouping (including those with remainders), where appropriate linked to the multiplication tables that they know (2, 3, 4, 5, 8 and 10), e.g.

43 ÷ 8 =



43 ÷ 8 = 5 remainder 3

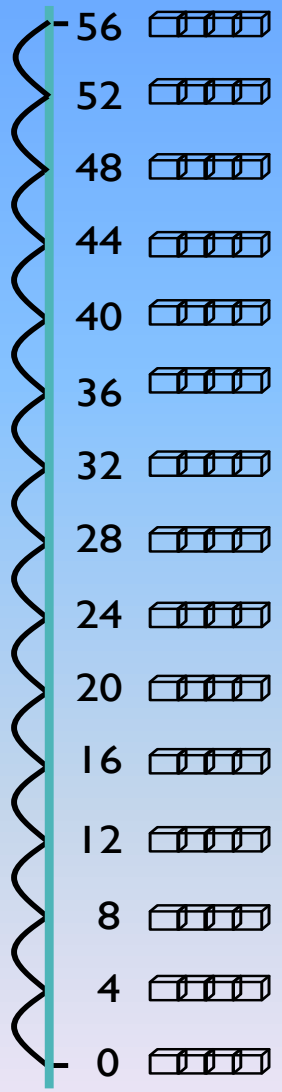
In preparation for developing the 'chunking' method of division, children should first use the repeated subtraction on a vertical number line alongside the continued use of practical equipment. There are two stages to this:

Stage 1 – repeatedly subtracting individual groups of the divisor
Stage 2 – subtracting multiples of the divisor (initially 10 groups and individual groups, then 10 groups and other multiples in line with tables knowledge)

After each group has been subtracted, children should consider how many are left to enable them to identify the amount remaining on the number line.

Stage 1

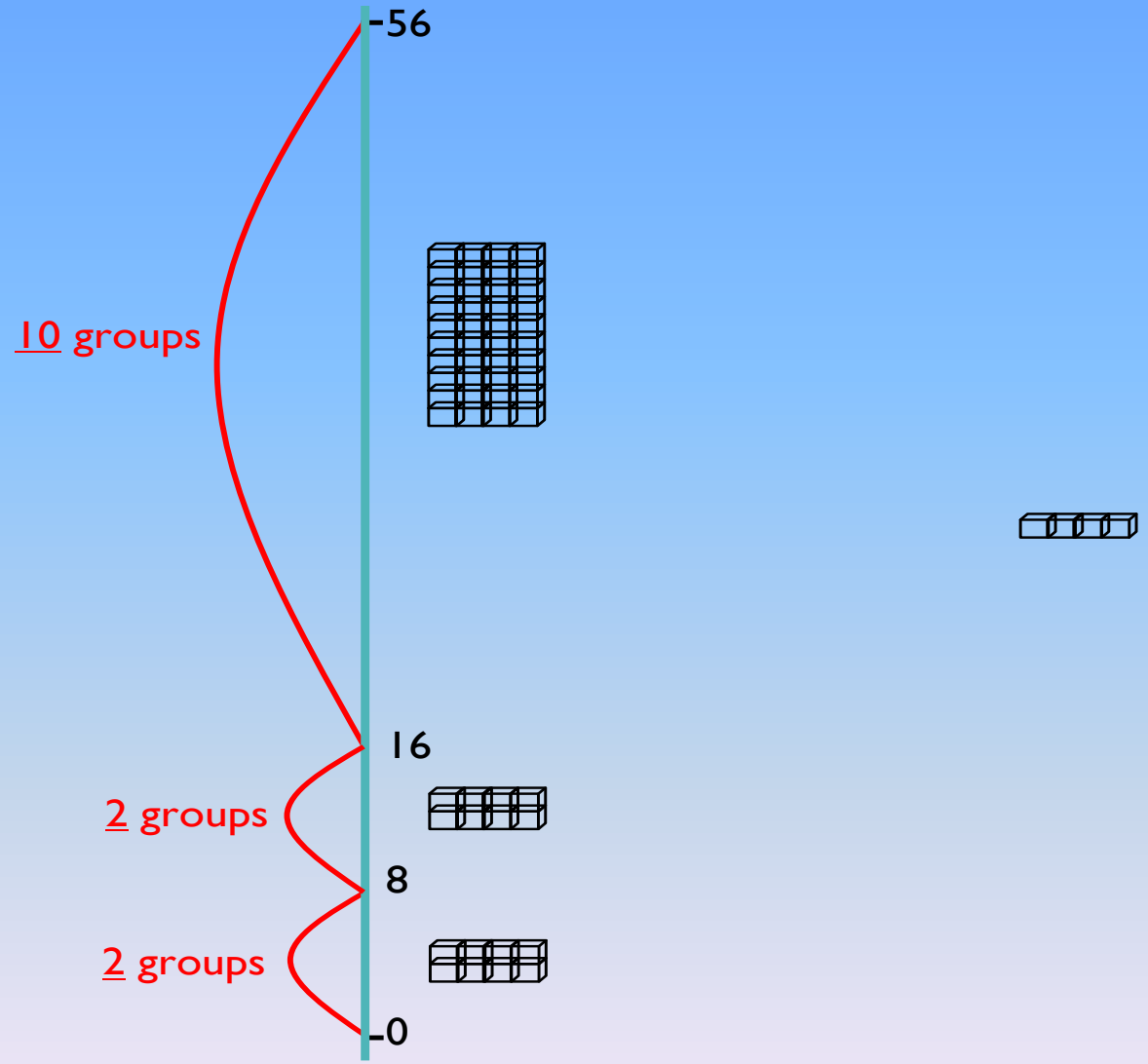
56 ÷ 4 = 14 (groups of 4)



Stage 2

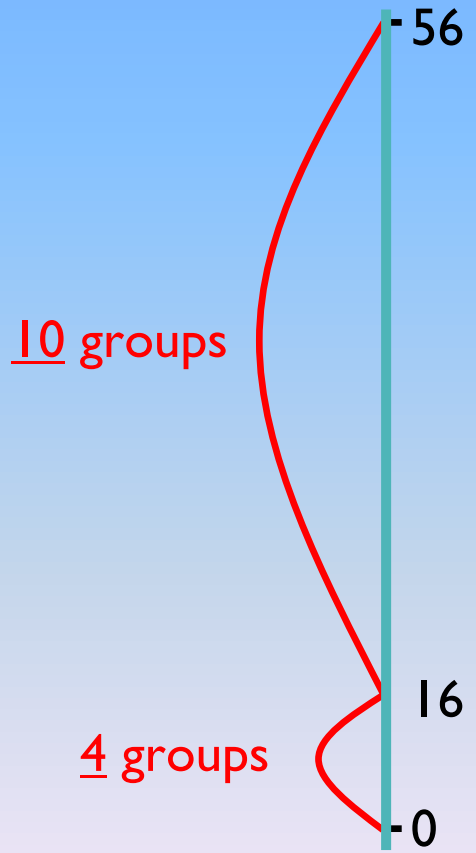
56 ÷ 4 = 10(groups of 4) + 2(groups of 4) + 2(groups of 4)

= 14(groups of 4)



Division in year 4

Children will continue to develop their use of grouping (repeated subtraction) to be able to subtract multiples of the divisor, moving on to the use of the 'chunking' method.




```
      14
   ------
4 ) 56
  - 40      10x
   ----
    16
  - 16      4x
   ----
     0
```

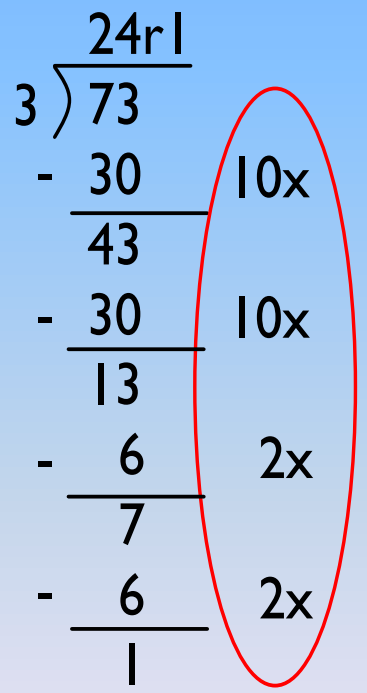
Answer: 14

Children should write their answer above the calculation to make it easy for them and the teacher to distinguish.

The number line method used in year 3 can be linked to the chunking method to enable children to make links in their understanding.

When developing their understanding of 'chunking', children should utilise a 'key facts' box, as shown below. This enables an efficient recall of tables facts and will help them in identifying the largest group they can subtract in one chunk. Any remainders should be shown as integers, e.g.

73 ÷ 3

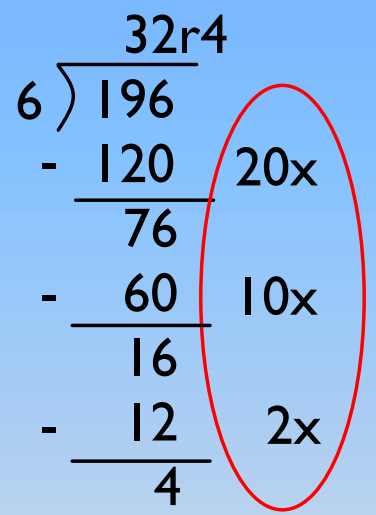


Key facts box

1x	3
2x	6
5x	15
10x	30

By the end of year 4, children should be able to use the chunking method to divide a three digit number by a single digit number. To make this method more efficient, the key facts in the menu box should be extended to include 4x and 20x, e.g.

196 ÷ 6



Key facts box

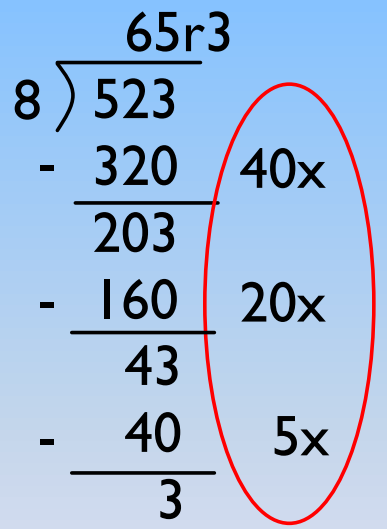
1x	6
2x	12
4x	24
5x	30
10x	60
20x	120

Children should be able to solve real life problems including those with money and measures. They need to be able to make decisions about what to do with remainders after division and round up or down accordingly.

Division in Year 5

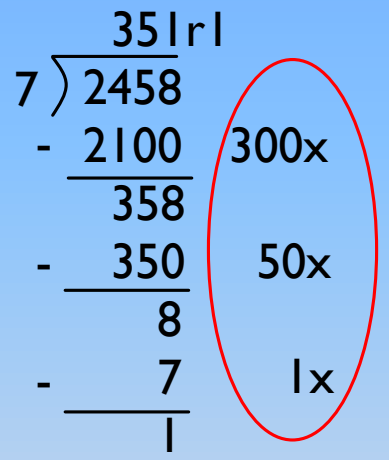
Children may continue to use the key facts box for as long as they find it useful. Using their knowledge of linked tables facts, children should be encouraged to use higher multiples of the divisor. Any remainders should be shown as integers, e.g.

523 ÷ 8



By the end of year 5, children should be able to use the chunking method to divide a four digit number by a single digit number. If children still need to use the key facts box, it can be extended to include 100x.

2458 ÷ 7

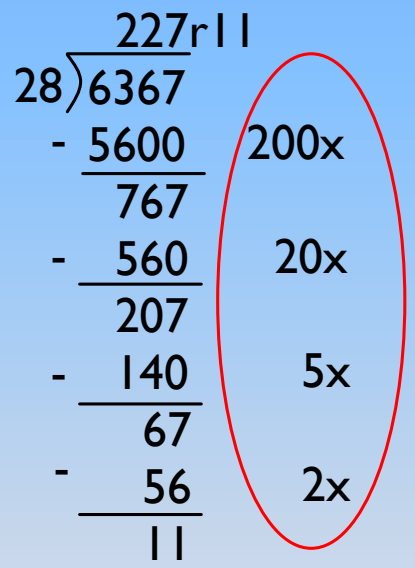


Children should be able to solve real life problems including those with money and measures. They need to be able to make decisions about what to do with remainders after division and round up or down accordingly.

Division in Year 6

To develop the chunking method further, it should be extended to include dividing a four-digit number by a two-digit number, e.g.

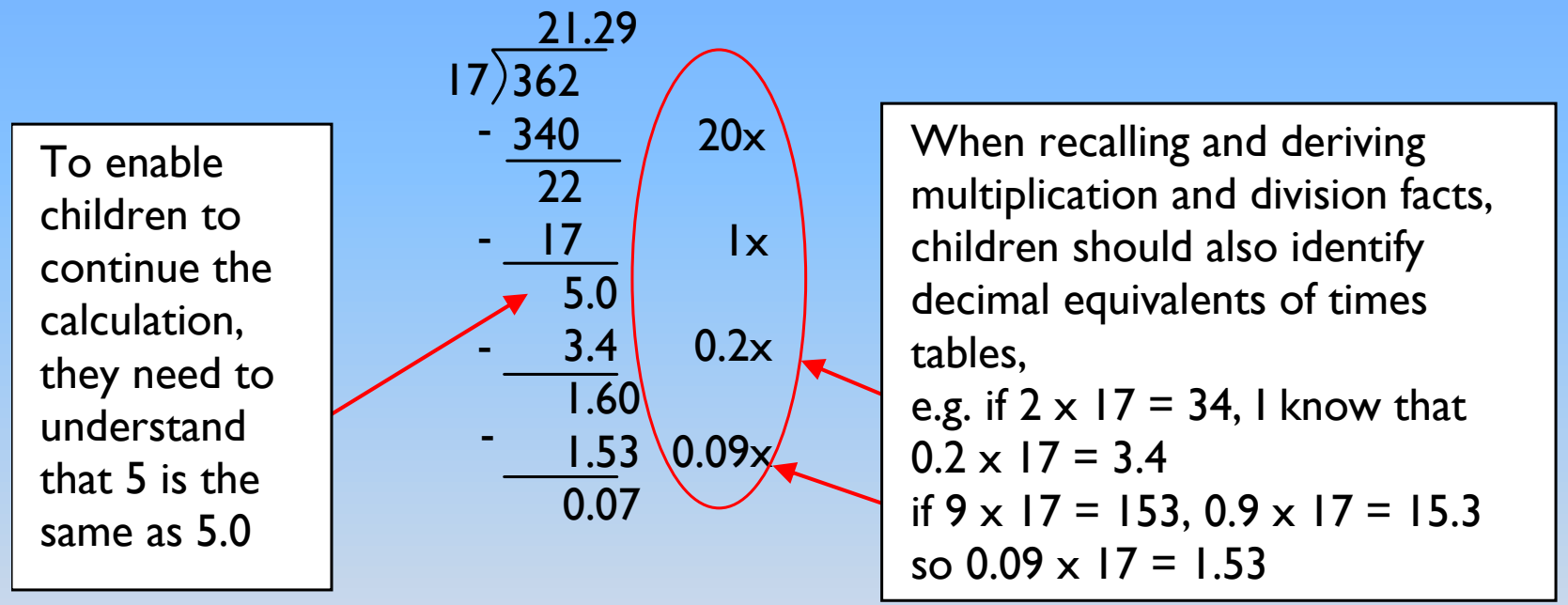
6367 ÷ 28



Children should be able to solve real life problems including those with money and measures. They need to be able to make decisions about what to do with remainders after division and round up or down accordingly.

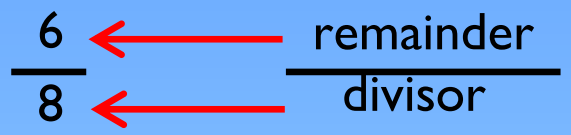
In addition, children should also be able to use the chunking method and solve calculations interpreting the remainder as a decimal up to two decimal places, e.g. 362 ÷ 17

362 ÷ 17



3574 ÷ 8

8 ⟌ 3574		
- 3200	400x	
374		
- 320	40x	
54		
- 48	6x	
6		



So 3574 ÷ 8 is $446\frac{6}{8}$

(when the remainder is shown as a fraction)

To show the remainder as a decimal relies upon children's knowledge of decimal fraction equivalents. For decimals with no more than 2 decimal places, they should be able to identify:

Half: $\frac{1}{2} = 0.5$

Quarters: $\frac{1}{4} = 0.25$, $\frac{3}{4} = 0.75$

Fifths: $\frac{1}{5} = 0.2$, $\frac{2}{5} = 0.4$, $\frac{3}{5} = 0.6$, $\frac{4}{5} = 0.8$

Tenths: $\frac{1}{10} = 0.1$, $\frac{2}{10} = 0.2$, $\frac{3}{10} = 0.3$, $\frac{4}{10} = 0.4$, $\frac{5}{10} = 0.5$, $\frac{6}{10} = 0.6$, $\frac{7}{10} = 0.7$, $\frac{8}{10} = 0.8$, $\frac{9}{10} = 0.9$

and reduce other equivalent fractions to their lowest terms.

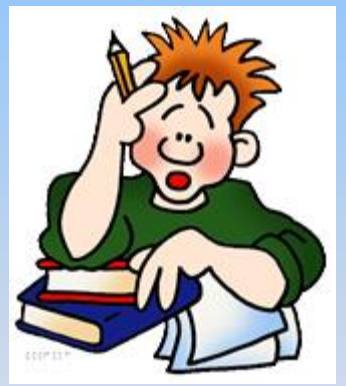
In the example above, 3574 ÷ 8, children should be able to identify that the remainder as a fraction of $\frac{6}{8}$ can be written as $\frac{3}{4}$ in its lowest terms. As $\frac{3}{4}$ is equivalent to 0.75, the answer can therefore be written as 446.75

Ways you can help at home



- When faced with a calculation problem, encourage your child to ask...

- Can I do this in my head?
- Could I do this in my head using drawings or jottings to help me?
- Do I need to use a written method?
- Should I use a calculator?



Also help your child to estimate and then check the answer. Encourage them to ask...

Is the answer sensible?

Everyday Situations

- Weighing, measuring capacity and timing when cooking. Converting a recipe for 4 people to one for 6 people.
- Being involved with measuring and calculating how much curtain fabric is needed, how much wood for shelves, how many wall or floor tiles are needed, how much carpet etc.
- Talking about time, e.g. How long is it until lunch time? The journey takes 2½ hours, when will we arrive? We need to be there at 2.00 pm, when do we need to leave home? Many children will still need practice with reading clock times, particularly minutes past and minutes to the hour.
- Handling amounts of money when shopping, working out total costs, working out change, checking receipts. Working out prices of sale items, e.g. 20% off. Managing pocket money and saving for things.
- Working out distances and directions from maps.
- Discussing and comparing house prices from newspaper house sales pages.
- Working out how much petrol will be used on a journey, working out average speed for a journey, costing journeys or holidays etc.

Play activities/games:

- Card games such as sevens, cribbage, pontoon etc.
- Any games involving calculating scores, e.g. scrabble, quoits, darts, bowling.
- Beat the calculator. In pairs, one with a calculator, one without, each works out the answer to a calculation aiming for the one without the calculator to say the answer first.
- Games involving strategic thinking/logic, e.g. draughts, chess, mastermind.
- Specialised computer games designed for using and developing maths.

Mental activities:

- Practising and developing knowledge of addition and subtraction facts within 20 (7+8, 13-5 etc.) and multiplication and division facts to 10 x 10 (6x7, 35/5 etc.) Make it into a game if possible, e.g. have a set of cards numbered 1-10, pick a number such as 4, say 4 times the number on the card as each is turned over, keep all the cards you get right. Beat the calculator as above. On a journey, adult passenger times response, try to beat your own time.
- Ask ‘progressive’ calculations, e.g. 7 + 6, 17 + 6, 27 + 6, 47 + 6, 147 + 6; 5 x 2, 50 x 2, 500 x 2, 500 x 20.