CROWTHORNE CHURCH OF ENGLAND PRIMARY SCHOOL

Basic Computation Policy

Addition
Subtraction
Multiplication
Division

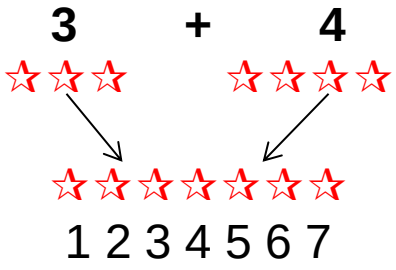
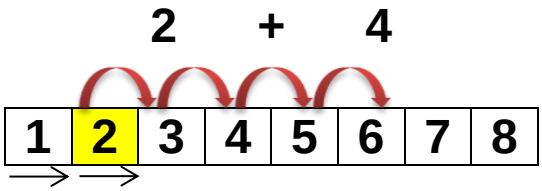
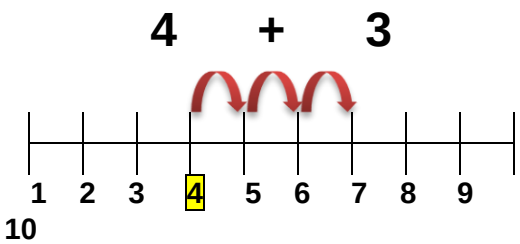
Our school policies reflect our vision of

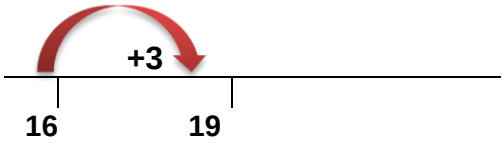
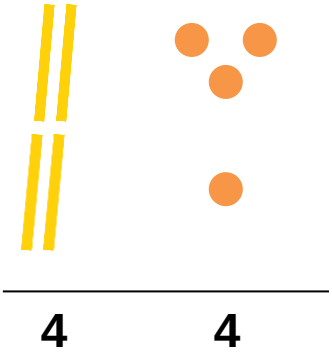
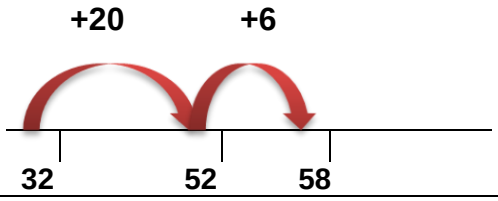
Inspiring and enabling our school community to live life to the full, promoting excellence and nurturing compassion, honesty, trust, hope, respect, thankfulness and courage.

John 10 v 10:
Jesus said: "I have come that they might have life, and have it to the full"

May 2025

ADDITION

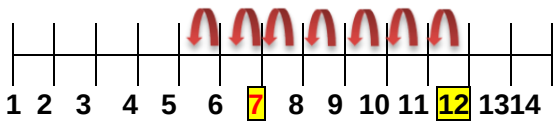
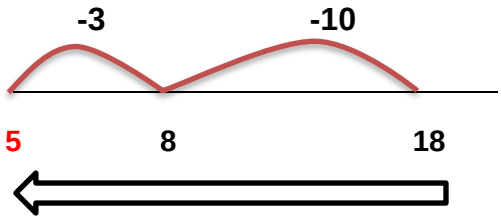
When this method is usually introduced	Resources to use	How it is done
Reception	Use any object your child can move and count.  	Count out first number as a set of objects. Count out second number as a set of objects. Combine the sets and count them all.
Reception	Use a number track with one number in each box.  	Count along track for first number. Place a counter or something to mark the square. Count along the track for the second number (remember to count the number of jumps)
Year 1	Use a number line with numbers marked.  	Find the first number to add on the number line/100 square. Count jumps along the line for the number to be added (it is the jumps that are counted)

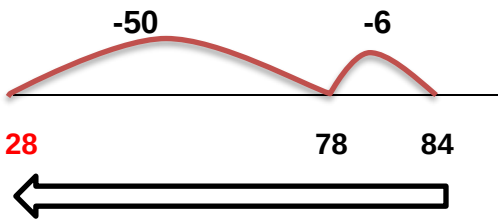
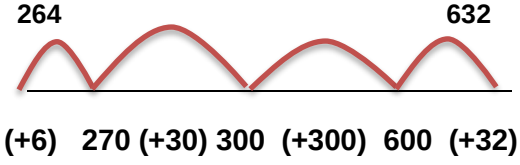
Reception and Year 1		**Put the largest number 'in your head' and then put up the same number of fingers as the second number and count on.**
Year 2	**A blank number line** **Use a number line without any numbers pre-marked.** **16 + 3** 	**Draw a line and mark the first number. Jump along the number of jumps for the second number.** **(Children need to know basic number bonds, e.g. 6 + 3 = 9 to help with this)**
Year 2	**23 + 21** 	**Use the 'Tens and Ones' method to add numbers together.** **(Count how many tens and ones altogether).**
Year 2	**32 + 26** **32 + (20 + 6)** 	**Mark the first number on a blank number line. Partition the second number into 10s and 1s and then count along a number line, tens first, then units.**

Year 2 and Year 3	**36 + 53** **30 + 6 + 50 + 3** **30 + 50 + 6 + 3** **80 + 9 = 89** **Place value cards (may be useful)** 	**Partition both numbers into 10s and 1s and then recombine the 10s to add them. Then recombine the 1s to add. Finally add all totals together.**
Year 3 and Year 4	**327 + 246 = 573** **300 + 20 + 7** **+ 200 + 40 + 6** **500 + 60 + 13 = 573**	**Partition numbers and add ones first.**
Year 4	**468** **+ 276** **14** **130** **600** **744**	**Continue vertical layout as in Year 3. Add and subtract numbers with up to 4 digits.**
Year 4 Year 5 and Year 6	**587** **+ 475** **1062** 1 1 **Adding more than 4 digits** **31587** **+ 27475** **59062** 1 1 1	**Standard method** **7 + 5 = 12 (place '2' in units column and carry '10; into tens column)** **80 + 70 = 150 + 10 (carried forward) which totals 160. (Place '60' in tens column and carry the '100' into the hundreds column)** **500 + 400 = 900 + 100 (carried forward) which totals 1000. Place this in the thousands column**

SUBTRACTION

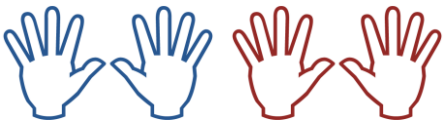
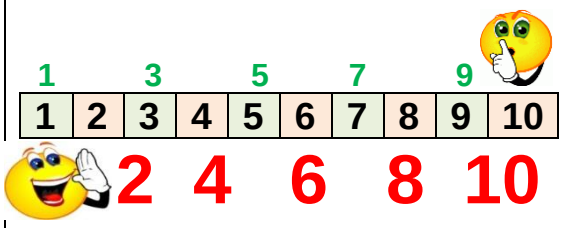
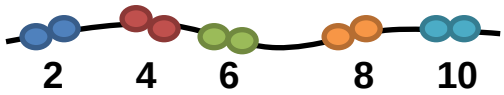
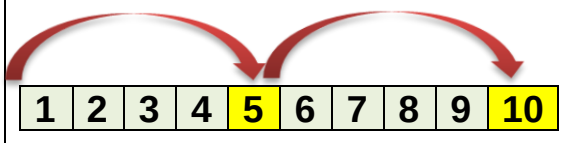
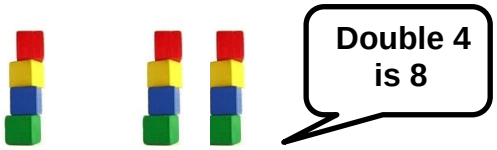
When this method is usually introduced	Resources to use	How it is done
Reception	**Use any object your child can move and count.** **7 - 3** ☆☆☆☆☆☆☆ ☆☆☆☆ ☆☆☆	**Count out first number as a set of objects. Take away second number from the set of objects. Count what are left.**
Subtraction	**5 – 3 = 2** **0 0 0 0 0**	**Record by drawing circles to represent the first number in the number sentence. Cross out the number of circles for the second number. Count how many circles are left to find the answer.**
Year 1	**Use a number track with one number in each box.** **6 - 4** 1 2 3 4 5 6 7 8	**Count along track for first number. Place a counter or something to mark the square. Count back along the track for the second number (remember to count the number of jumps).**

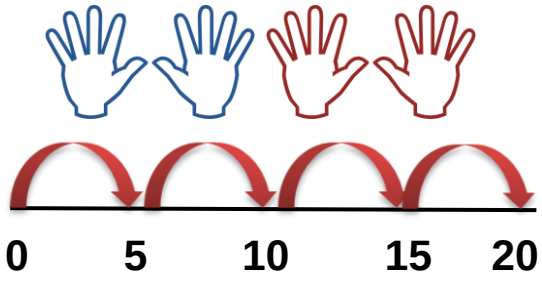
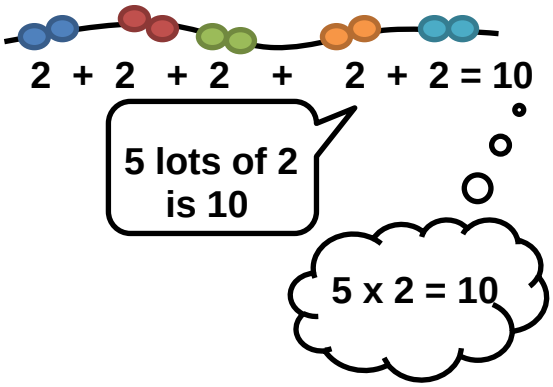
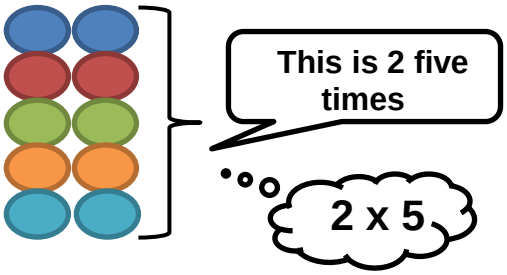
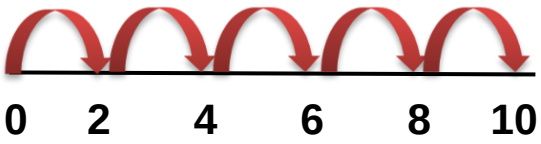
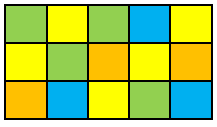
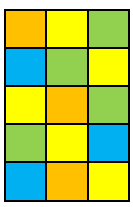
Year 1	**Understand subtract as the difference between 2 numbers.**  **8 – 5**	**Lay out sets of objects for each number. Find the difference by counting the extra ones in the bigger set.**
Year 1		**Put 11 in your head. Put the smallest number on your fingers and count back.** **The number of fingers will show how many the difference was / how many you had to count on.**
Year 1	**Use a number line with numbers marked.** **12 - 7** 	**Count back from the biggest number by doing jumps back to find the answer.**
Year 2	**A blank number line can also be used to <u>subtract</u>** **18 – 13** 	**Use an open number line. Write on the largest number and count back the given number (e.g. 13). The children should be able to split this into 10 and 3. The number they reach when they have counted back is their final answer.**

Year 2	**A blank number line to <u>subtract</u>** **84 – 56 = 28**  	**Continuation of the method used in Year 1. The children become more confident and work with larger numbers. They are also encouraged to start to subtract (jump back) in larger jumps.**
Year 2	**23 = 20 + 3** **23 = 10 + 13**	**Partition numbers in different ways to support subtraction.**
Year 2	**23 – 11 = 12** 	**Use the 'tens and ones' method to subtract numbers.** **Cross out the correct tens and ones to subtract.**
Year 3	**327 - 246 = 81** 200 **~~300~~ + 120 + 7** **- 200 + 40 + 6** **000 + 80 + 1 = 81**	**Partition into hundreds, tens and ones. Start with the ones, then subtract tens, then hundreds. Write the answer underneath and recombine to find the answer. If there is not enough to subtract, decompose from the left column eg exchange one ten for ten ones or one hundred for ten tens. Cross out and write the new values above. Then subtract and continue.**
Year 3 & Year 4	**<u>Frog Method</u>** **632 – 264 = 368**  	**Find the difference between the numbers.**

Year 4	**Subtraction** 500 120 12 600 30 2 632 200 60 4 264 300 60 8 368	**The children are introduced to the shorter method of subtraction in Year 4**
Year 4 and Year 5	1 5 2 1 **632** **264** **368**	**Subtract numbers with more than 4 digits. When the children are ready they use the *'knock next door'* method.**
Year 5	1 5 2 1 **97632** **25264** **72368**	
Year 5 and Year 6	**Subtraction** 1 1 4 5 1 **15.63** **-7.86** **7.77**	**The children continue to use the *'knock next door'* method.** **They are required to apply the same principals when working with decimals.** **Children are encouraged to estimate the answer first and consider if their answer is reasonable.**

MULTIPLICATION

When this method is usually introduced	Resources to use	How it is done
Reception		Count in 2s. Count pairs of objects
	 10 20	Count in 10s. Count 2 hands at a time.
	 1 3 5 7 9 1 2 3 4 5 6 7 8 9 10 2 4 6 8 10	Count along a number track whispering one number and shouting the next out loud. Learn doubles of numbers up to 5.
Year 1	 2 4 6 8 10  1 2 3 4 5 6 7 8 9 10  Double 4 is 8	Count in 2s, 10s and 5s on a bead string and a number track. Learn doubles of numbers up to 10.

Year 1 & Year 2		Count in 2s, 5s and 10s and record this as jumps along a number line.
		Describe repeated addition as 'lots of' representing this with the multiplication sign x.
		Describe 5 'lots of' 2 as being 2 five times. This can be written as 2 x 5.
		You can hop 2 along the number line 5 times to get the answer.
	 5 x 3	Because an array of squares can be turned around it can show: 5 x 3 (five times three) or 3 x 5 (three times five)
	 3 x 5	

Year 2		**Should be fluent in the 2, 3, 5, and 10 multiplication tables. Should start to use other multiplication tables and recall multiplication facts.**
Year 3		**T0 x 0 using a grid method.** **Times Table + counting in multiples but <u>not</u> expanded multiplication.**
Year 3	 **2, 4, 6, 8, 10, 12…** **5, 10, 15, 20, 25…** **10, 20, 30, 40, 50, 60…**  **0 5 10 15 20** **5 x 1 = 5** **5 x 2 = 10** **5 x 3 = 15** **5 x 4 = 20** These can be written as table facts this way, with the focus number first: "Five times one equals five Five times two equals ten Five times three equals fifteen…" **1 x 5 = 5** **2 x 5 = 10** **3 x 5 = 15** **4 x 5 = 20** Or they can be written as table facts this way, as 'lots of' the focus number: "One lot of five equals five Two lots of five equals ten Three lots of five equals fifteen…"	**Continue counting in 2s, 5s and 10s and understand these as table facts.** **Begin counting in 3s, 4s and 8s and understanding table facts for 3, 4 and 8.**

<table>
<tr>
<td>Year 2 and Year 3</td>
<td>
Double 10 and double 8
18
10 + 8
20 + 16 = 36
</td>
<td>
The children are also taught to chant:
“1 five is 5
2 fives are 10
3 fives are 15” etc.

Use partitioning to double numbers using known facts.

To find double 18, first partition 18 into 10 and 8.
</td>
</tr>
<tr>
<td>Year 3</td>
<td>
<table>
<tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td></tr>
<tr><td>10</td><td>20</td><td>30</td><td>40</td><td>50</td><td>60</td></tr>
<tr><td>100</td><td>200</td><td>300</td><td>400</td><td>500</td><td>600</td></tr>
</table>
1 x 10 = 10
10 x 10 = 100
Extend times tables
</td>
<td>
Know that when a number is multiplied by 10 it is made 10 times bigger and so:

A one becomes a ten
A ten becomes a hundred
and so on.

(This is much better than talking about adding a zero!)
</td>
</tr>
<tr>
<td>Year 3</td>
<td>
17 x 3
10 x 3 and 7 x 3

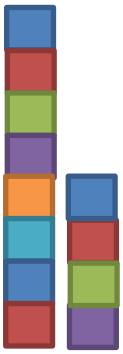
30 + 21
= 51
30 + 21 = 51
</td>
<td>
Partition numbers into 10s and 1s to make it easier to multiply.

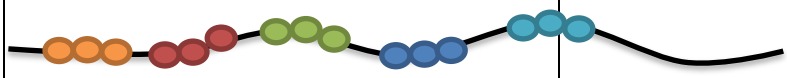
Show how this works on an array of squares.
</td>
</tr>
</table>

	<table><tr><td>X</td><td>10</td><td>7</td></tr><tr><td>3</td><td>30</td><td>21</td></tr></table> = 51	**Partition into 10s (Tens) and 1s (ones) and write this in a grid.** **This is known as the GRID METHOD.** 1. **Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables.** 2. **Start counting in 6s, 7s, 8s and 9s and learn tables in any order.**
Year 4 **Year 4**	**324 x 6 =** <table><tr><td>X</td><td>300</td><td>20</td><td>4</td></tr><tr><td>6</td><td>1800</td><td>120</td><td>24</td></tr></table>**1800 + 120 + 24 = 1944** **3 2 4** **x 6** **2 4** (6 x 4) **1 2 0** (6 x 20) **1 8 0 0** (6 x 300) **1 9 4 4** **27 x 32 =** <table><tr><td>X</td><td>20</td><td>7</td></tr><tr><td>30</td><td>600</td><td>210</td></tr><tr><td>2</td><td>40</td><td>14</td></tr></table>= 810 = 54 864	**Use the Grid Method, by partitioning the numbers, as in Year 3.** **Extend this for calculations involving HTO (Hundreds, Tens and Ones) multiplied by a single digit.** **In the expanded method of working out, each part of the number is multiplied individually, just as in the grid, and then added back together.** **The Grid Method is then extended to help calculate multiplications involving TO x TO.**

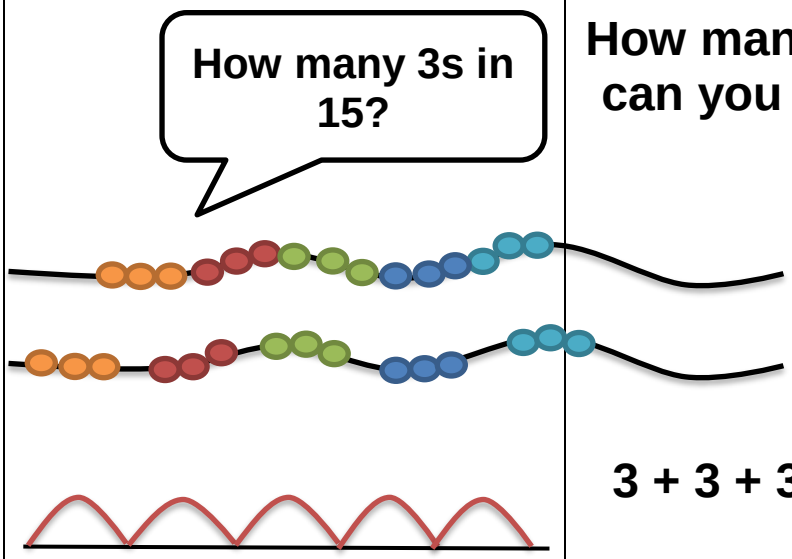
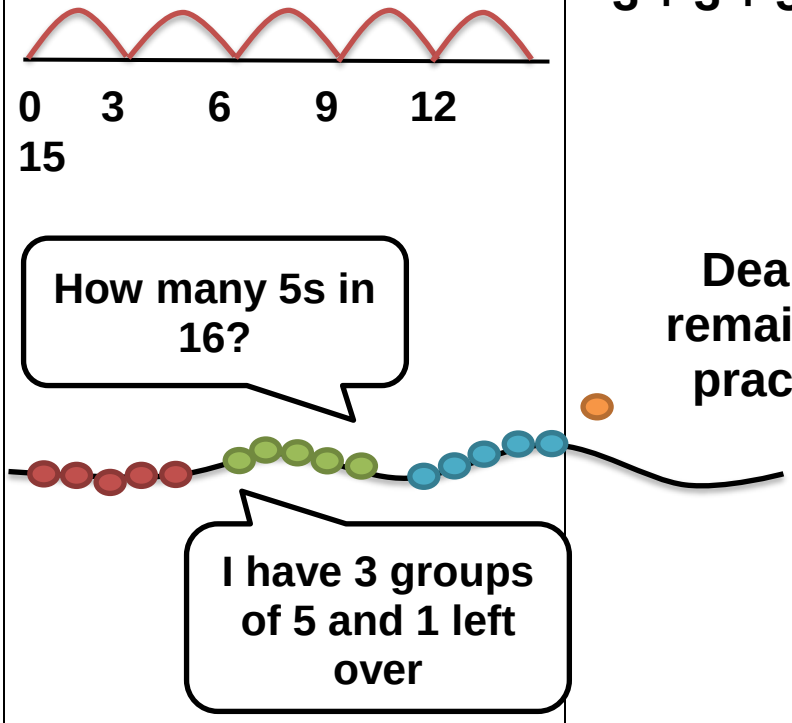
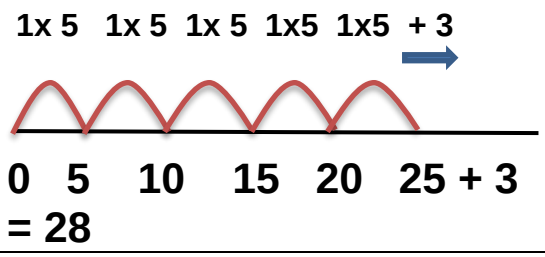
Year 4	52 x 6 = **312** (1) 342 x 4 = **1368** (1)	**Year 4 are introduced to the compact method, multiplying 3-digit numbers by 1-digit numbers.**
Year 5	2741 x 6 = **16446** (4, 2)	**Begin to use short multiplication, initially by single digit.**
Year 6	24 x 16 = 144 + 240 = **384** 124 x 26 = 744 + 2480 = **3224** (1, 2 / 1, 1)	**Moving on to long multiplication. Simpler 2 digit x 2 digit.** **Continue with short and long multiplication with up to 4 digits x 2 digits** **Start with the ones:** **6 x 4, 20, 100** **20 x 4, 20, 100**

DIVISION

When this method is usually introduced	Resources to use	How it is done
Reception and Year 1	**Can we share the cakes fairly between the four of us?**   **Half of 8 is 4**  **Put half of the animals into the ark.**	**Practical sharing.** **Beginning to understand half in practical contexts.**
Year 2	**15 ÷ 3** **15 shared equally between 3** 	**Sharing equally.** **Recognising that the division sign can mean sharing.**

Year 2	**15 ÷ 3** **15 put into groups of 3** **How many groups of 3 can we make from these 15 beads?**  **5 groups of 3**	**Grouping.** **Recognising that the division sign can mean grouping.**

Year 2 are taught to see the commutativity between multiplication and division e.g. 3 x 5 = 15
15 ÷ 5 = 3

Year 3		**Grouping on a numberline. Division with remainers.**
Year 3	**15 ÷ 3**  	**Grouping.** **How many groups of 3 can you get from 15?** **3 + 3 + 3 + 3 + 3 = 15** **Dealing with remainders in a practical way**
Year 3	**28 ÷ 5 = 5** r 3 	**Use a number line to record the number of groups you can get from the number.**

Year 3	**28 ÷ 4 = 7** **28** **xxxxxxx 7** | **xxxxxxx 7** | **xxxxxxx 7** | **xxxxxxx 7** **7 x 4 = 28**	**Use Bar Model and share out or use multiples**

Year 4	**98 ÷ 7 = 10 chunks of 7** **and** **4 chunks of 7** **= 14** **98 ÷ 7 = 14** **(10) x 7 = 70** **(4) x 7 = 28**	**Use a vertical number line to record the same process of taking larger groups or 'chunks' from the number.** **"How many lots of 7 can I get out of 98?"**
Year 4	**98 ÷ 7 becomes…** **1 4** 7 | 9 (2) 8 **Answer: 14**	**Include remainders. Short division.**
Year 5	**1 9 0 9** 4 | 7 (3) 6 (3) 3 6	

	2 4 5 r 1 1 2 2 4 ⟌ 9 8 2 1	
Year 5	**560 ÷ 24 =** **560** **- 240** | **10 x 24** 2 1 **320** **- 240** | **10 x 24** **80** **- 48** | **2 x 24** **32** **- 24** | **1 x 24** **8** | **23**	**Depending on level of confidence, calculations involving HTO ÷ TO can be worked out using either the expanded or the compact method of the vertical layout.** Year 5 also learn how to express remainders as fractions and decimals. **This can also be applied when dividing decimals.**
Year 6	**Long Division** **3 5 0 r 12/13** **13** ⟌ **4 5 6 2**	**1. Write first 5 multiples of division** **13** **26** **39**

	3 9 6 6 6 5 1 2 1 8 2 r 12/25 25 | 4 5 6 2 2 5 2 0 6 2 0 0 6 2 5 0 1 2	52 65 2. You may need to add to multiples if question requires. 3. Show remainder as a fraction or decimal. 25 50 75 100 125 150 175 200