'Whatever you do, do it for the glory of God.'

Calculation Policy

Approved by the Teaching and Learning Committee on 8/11/2023.
To be reviewed in the Autumn term 2026.

The Mathematics curriculum at St Simon's Catholic Primary school has been planned rigorously and carefully to support the school's key learning aims and includes the National Curriculum 2014 objectives.

The key focus of our mathematics curriculum is to ensure that all pupils:

- become **fluent** in the fundamentals of mathematics, including: numeracy, geometry, measurement, algebra, statistics, ratio and proportion.
- can **reason mathematically** by following a line of enquiry, establishing relationships and making generalisations as well as justifying their ideas using mathematical language with progressive precision.
- **solve problems** by applying their mathematical understanding to a variety of problems with increasing sophistication, including breaking down problems into a series of simpler steps and **resiliently** seeking solutions when problems have been presented in new ways.

To achieve this, children initially approach their work using concrete materials. Once confident they then begin to use pictorials to express their ideas before moving onto more abstract representations (digits). This progression is fundamental to foster a deeper understanding of the maths being learned.

Two key policies are crucial to supporting this progression:

- **Maths Progression of Skills Documents from EYFS-Y6**: providing the year-group specific objectives across all areas of maths.
- **Calculation Policy**: providing the progressive methods to teaching the four operations (addition, subtraction, multiplication and division) in all year groups.

Each week, an explicit lesson focuses on mental arithmetic where the children solve questions using all four operations (+, -, x and ÷) and focus on using the most efficient methods (known as Big Maths). As the children progress through school they are expected to explain their answers in growing detail and are exposed to using more complex methods. The aim is to ensure that the fundamentals of our maths curriculum are known with such confidence that

children can then apply them in a range of areas and to problems of growing complexity.

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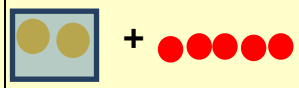
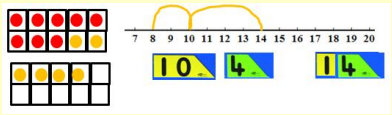
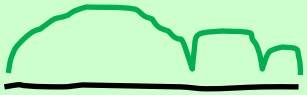
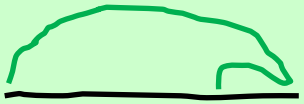
Addition

Year 1 Add and subtract one-digit and two-digit numbers to 20, including zero	2 + 5 = Count out each set then find the total	**2 + 5 =**  Count on from first number (cover first number or display as numeral)	**2 + 5** Leading to 5 + 2 (without counters) Recognise the biggest number in the calculation and count on from it (using objects for smaller number if necessary)	2 + 5 5 + 8 4 + 13 11 + 7 Recognise the biggest number in the calculation and count on from it mentally or using number line	6 + 8 becomes 8 + 2 + 4  Partitioning the smaller number and use the tens number to bridge calculation 5 + 17 becomes 17 + 3 + 2
Year 2 Add and subtract numbers using concrete objects, pictorial representations, and mentally, including: a two-digit number and ones a two-digit number and tens	**6 + 18** By counting on from the largest number 	**6 + 58** By partitioning the smaller number through the multiple of 10 58 + 2 + 4 58 60 64	TU + TU within 100 **37 + 44**  44 74 80 81 Or 40 + 30 = 70 7 + 4 = 11 70 + 11 = 81	Addition of three single digits – look for bonds you know and doubles **6 + 9 + 3** 6 + 3 =9 Double 9 = 18	**Special cases + 9** **9 + 33**  33 42 43 **Using Doubles** **29 + 30** is the same as 30 + 30 – 1

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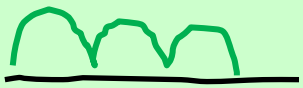
two two-digit numbers **adding three one-digit numbers**	**30 + 46** By counting on in tens  46 56 66 76	**22 + 50** By counting in groups of ten and one from largest number 50 70 72	Or 44 + 40 – 3 = 81 **Recall of facts to 20 and by recall of adding multiples of 10 will support this thinking**		
Year 3 Add and subtract numbers mentally, including: □□a three-digit number and ones □□a three-digit number and tens □□a three-digit number and hundreds Two 2-digit numbers across 100 (non-statutory guidance) Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction	**Partitioning** the numbers for TU + TU across 100 **55 + 78** 70 + 50 = 120 8 + 5 = 13 120 + 13 = 133 **55 + 78** 78 + 50 = 128 128 + 2 + 3 = 133 Recall of facts to 20 and by adding multiples of 10 will support this thinking	**Special cases** **66 + 79** 80 +66 – 1 = 145 **Using doubles** **76 + 78** Double 70 + double 6 + 2 Double 70 + double 8 – 2 Recall of facts to 20 and by adding multiples of 10 will support this thinking	**Partitioning** Adding ones and tens to a 3digit number **356 + 8** 356 + 4 + 4 = 364 **356 + 70** 350 + 70 + 6 = 420 **356 + 600** 300 + 600 + 56 = 956	**Addition of three digit + 2 digit numbers and 3-digit + 3 digit** 2 6 8 7 9 2 0 0 1 3 0 1 7 3 4 7 2 6 8 1 7 9 1 7 1 3 0 3 0 0 4 4 7	Addition of numbers with decimal places **1.5 + 1.5** Double 1 and double 0.5 **1.6 + 1.7** 1.7 + 0.3 + 1.3 = 3.3

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Year 4 Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate	**Using mental strategy where appropriate** **1460 + 499** 1460 + 500 – 1 = 1959 **2560 + 3570** 6000 + 130 = 6130	**Addition of three digit + 3-digit and four digit + four digit** 576 369 945 1 1 7268 5179 12447 1 1 1	**Addition of numbers to 2 decimal places** 4.45 3.55 8.00 1 1 57.89 46.67 104.56 1 1 1 1		
Year 5 Add and subtract numbers mentally with increasingly large numbers e.g. 5-digit – 4-digit multiple of 10 Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)	**Using mental calculation by counting on** **45678 + 3500 = 49178** 45678 + 3000 = 48678 42678 +500 = 49178 **5.78 + 2.45** = **8.23** 5.78 + 2 = 7.78 5.73 + 0.4 = 8.18 5.33 + 0.05 = 8.23	**Column addition** 58765 29648 + 88413 1 1 1 1	**Mixed decimals** **57 .89 + 46.6 + 23.785** 23.785 57.89 46.6 128.275 1 1 2 1		

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Year 6 Perform mental calculations, including with mixed operations and large numbers	**Partitioning** **4.578 + 0.008 = 4.586** **6.568 + 0.079 = 6.647** **6.568 + 0.07 = 6.638** **6.638 + 0.009 = 6.647**	**Column addition with 5 or 6 digits** 5 8 7 6 5 2 9 6 4 8 + 8 8 4 1 3 1 1 1 1	**Using all 4 operations** **6 + 7 × 8 = 62** because multiplication first then addition when there are no brackets **2780 – 910 + 1220** can be reordered to 2780 + 1220 – 910= 3090 as long as the symbol moves with the number		

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Subtraction

Year 1

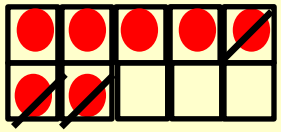
Add and subtract one-digit and two-digit numbers to 20, including zero

5 – 2

Count out 5 and remove 2 to find the answer

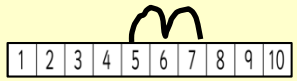
7 – 3

Using a 10 frame to subtract - The children may subitise how many are remaining without having to count them all.

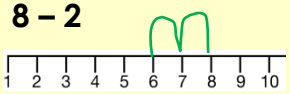


7 – 2

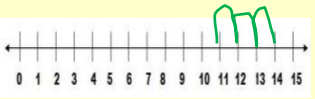
Count back on the number line by saying start on 7, count back 1, 2, what number are you on?



8 – 2



14 – 3

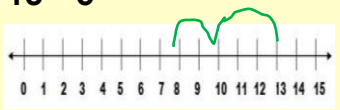


Count backwards mentally or using a number line.

15 – 5

Use tens and ones when the calculation doesn't bridge 10

13 – 5

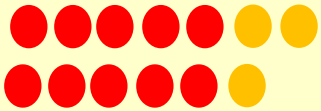


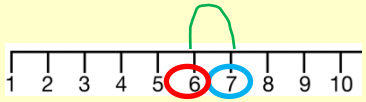
becomes **13 – 3 – 2**

Partitioning the number being subtracted through the multiple of 10 mentally or using a number line

Difference

7 – 6 or find the difference between 7 and 6





Year 2

Add and subtract numbers using concrete objects, pictorial representations, and mentally, including:

a two-digit number and ones

a two-digit number and tens

two two-digit numbers

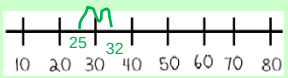
adding three one-digit numbers

Subtracting by counting backwards in tens or ones

28 – 4

Subtracting in groups of ten(rather than counting in tens) or groups of ones (by partitioning number being subtracted through multiple of 10)

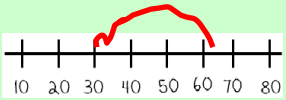
32 – 7
32 – 2 – 5



64 – 40

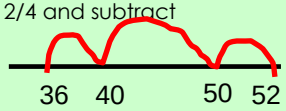
Use a number line or manipulatives

65 – 32



52 – 16

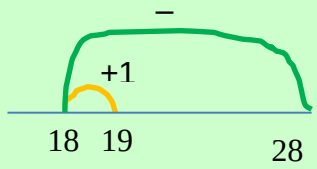
This calculation bridges through 10 so we need to partition the 16 into 2/4/10 or 12/4 and subtract



Special cases

When subtracting 9 or 19

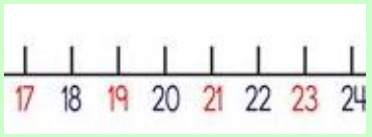
28 – 9



Or 28 – 10 + 1

Difference

23 – 19



When numbers are close together, count on from the smallest number through the multiple of ten or count back from the largest to the smallest through the multiple of ten.

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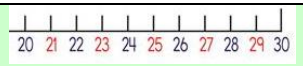
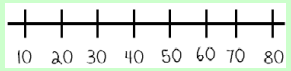
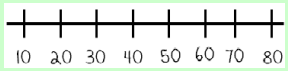
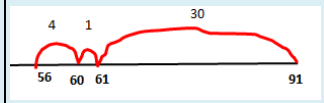
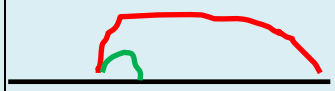
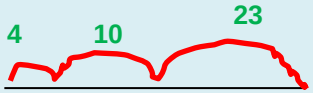
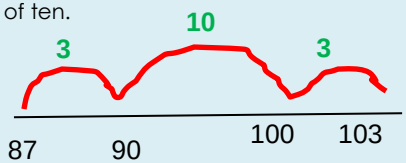
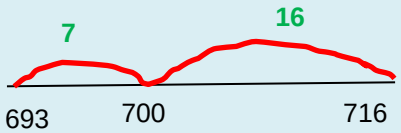
	 **45 – 20** Use tens and ones when the calculation doesn't bridge 10  **Partitioning** 28 – 8 = 20 76 – 70 = 6	 			
Year 3 Add and subtract numbers mentally, including: □□a three-digit number and ones □□a three-digit number and tens □□a three-digit number and hundreds Two 2-digit numbers across 100 (non-statutory guidance) Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction	**Partitioning** Subtracting ones and tens from a 3digit number 567 – 60 = 507 745 – 700 = 45 832 – 2 = 830 **364 – 8** 364 – 4 – 4 = 356 **356 – 70** 356 – 50 – 20 = 286 **956 – 600**	**TU – TU** **By counting back in tens and ones** **91 – 35** **91 – 30 – 1 – 4**  **Special cases** 93 – 39 as 93 – 40 + 1 	**Subtraction up to three digits** **123 – 86 = 37**  **£5.67 – £2.20** £5.67 – £2.00 = £3.67 £3.67 – 20p = £3.47	**Expanded column subtraction** **347 – 165 = 182** 200 140 7 ~~300~~ 40 7 100 60 5 100 80 2 **436 – 177 = 259** 300 120 16 ~~400~~ ~~30~~ 7 100 70 7	**Difference** (see also subtraction up to three digits) **103 – 87 = 16** When numbers are close together, count on from the smallest number through the multiple of ten or count back from the largest to the smallest through the multiple of ten.  **716 – 693= 23** 

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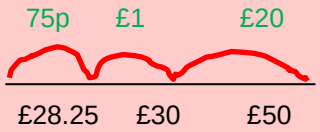
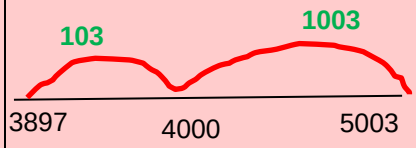
	956 – 600 = 356			200 50 9	
Year 4 Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate	**Partitioning** 1678 – 600 = 1078 2689 – 80 = 2609 6839 – 9 = 6830 7484 – 1100 = 6384	**Using mental calculation when appropriate by counting back** **5678 – 2342 =** 5678 – 2000 = 3678 3678 – 300 = 3378 3378 – 40 = 3338 3338 – 2 = 3336 **See difference too**	**Subtraction up to four digits** **£50 – £28.25 = £21.75** 	**Expanded column subtraction** With three digit numbers asY3 and 4-digit numbers **3326 – 2678 = 658** 2000 1200 120 16 ~~3000~~ ~~300~~ ~~20~~ 6 2000 600 70 8 600 50 8	**Difference** 5003 – 3897= **1106** 
Year 5 Add and subtract numbers mentally with increasingly large numbers e.g. 5-digit – 4-digit multiple of 10	**Partitioning** 6.76 – 0.06 = 6.7 7.47 – 0.4 = 7.07	**Using mental calculation by counting back**	**Difference** **Use bonds to 100 to support** **£10 – £7.71 = £2.29**	**Column subtraction** 2~~3~~ 1 8 7 5~~6~~ 1 5 1 9 2 4 8	

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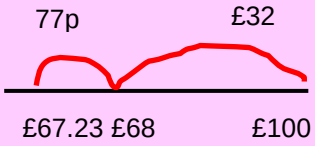
Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)		**45678 – 3500 = 42178** 45678 – 3000 = 42678 42678 – 500 = 42178 **5.78 – 2.45** =3.33 5.78 – 0.05 = 5.73 5.73 – 0.4 = 5.33 5.33 – 2 = 3.33	Use a number line or jottings **£7.71 £8.00 = 29p** **£8.00 → £10.00 = £2** **7 – 2.45 = 4.55** **2.45 → 3 = 0.55** **3 → 7 = 4**	1 9 5 1 7	
Year 6 Perform mental calculations, including with mixed operations and large numbers	**Partitioning** **4.578 – 0.008 = 4.57** **6.378 – 0.07 = 6.308**	**Difference using larger numbers and number facts** **£100 – 67.23= £32.77**  	**Difference (use mixed decimals)** **6.45 – 1.7 = 4.75** **1.7 → 2 = 0.3** **2 → 6.45 = 4.45**	**As above with 5 digits**	

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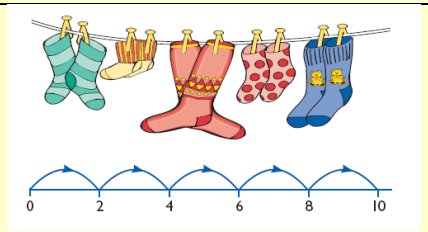
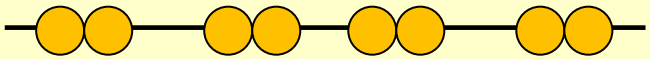
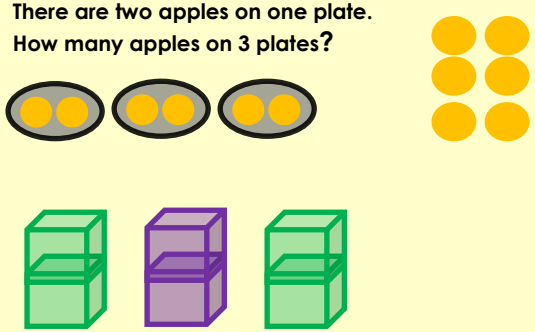
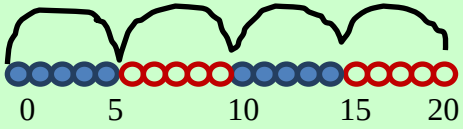
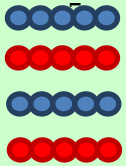
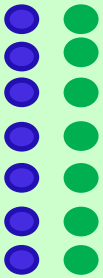
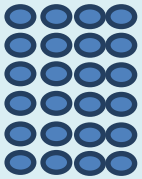
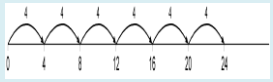
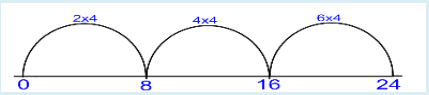
Multiplication

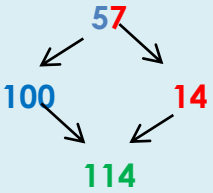
Year 1 Solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher.	Count in multiples of twos, fives and tens	 		**There are two apples on one plate.** **How many apples on 3 plates?** 
Year 2 Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs	Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers	  **5 × 4 = 20**	 **Recall and Derive doubles** 7 + 7 = 14 7 × 2 = 14	**Recall and derive doubles** **25 × 2** **20 × 2** **5 × 2** **40** **+** **10** **= 50** **25** **40** **10** **50**

Approved by the Teaching and Learning Committee on 8/11/2023.
To be reviewed in the Autumn term 2026.

<table>
<tr>
<td>Year 3
Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods</td>
<td>Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables

Multiply single digits by 20,30,40,50 and 80</td>
<td> 
 
 
4 × 6 = 24
Use arrays and number lines to count in multiples</td>
<td>Using partitioning to multiply

57 × 2 = 114
50 × 2 7 × 2
100 + 14
=114

  </td>
<td>Scaling
Making a 5cm line 4 times longer

5cm × 4 = 20cm

 </td>
<td>48 × 3 = 144

<table><tr><td>×</td><td>40</td><td>8</td></tr><tr><td>3</td><td>120</td><td>24</td></tr></table>
(Partitioning)

4 × 10 × 3 or
4 × 3 × 10

120 + 24 = 144</td>
</tr>
<tr>
<td>Year 4
Use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers

Multiply and divide two-digit and three-digit numbers by a one-digit number using formal written layout</td>
<td>Recall multiplication and division facts for multiplication tables up to 12 × 12 (facts for 6,7,9,11,12 are new)

Multiply single digits by 60,70, and 90</td>
<td>Mental

Multiplying by 10 and 100
E.g. 24 × 100

<table><tr><td>Th</td><td>H</td><td>T</td><td>U</td></tr><tr><td></td><td></td><td>2</td><td>4</td></tr><tr><td>2</td><td>4</td><td>0</td><td>0</td></tr></table></td>
<td colspan="2">67 × 9

<table><tr><td>×</td><td>60</td><td>7</td></tr><tr><td>9</td><td>540</td><td>63</td></tr></table>
540 + 63 = 603</td>
<td>Partitioning grid multiplication leading to formal compact methods

67 × 9 =

6 7
9
6 0 3
6</td>
</tr>
</table>

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<table>
<tr>
<td></td>
<td></td>
<td>Partitioning

267 × 2
200 × 2 = 400
60 × 2 = 120
7 × 2 = 14

400 + 120 + 14 =534</td>
<td colspan="2">437 × 6
<table><tr><td>×</td><td>400</td><td>30</td><td>7</td></tr><tr><td>6</td><td>2400</td><td>180</td><td>42</td></tr></table>
2400 + 180 + 42 = 2622</td>
<td></td>
</tr>
<tr>
<td>Year 5
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</td>
<td>Multiply and divide numbers mentally drawing upon known facts

multiply and divide whole numbers and those involving decimals by 10, 100 and 1000</td>
<td>Mental calculation

Partitioning
407 × 4
407 × 2
400 × 4 = 1600
0 × 4 = 0
7 × 4 = 28

1600 + 28 = 1628

Rounding and adjusting

£3.99 × 6
£4 × 6 = £24
£24.00 – £0.06 = £23.94

28 × 19
28 × 10 × 2 = 560
560 – 28 = 532</td>
<td>TU × TU by partitioning

47 × 58
<table><tr><td></td><td>40</td><td>7</td></tr><tr><td>50</td><td>2000

(4 x 10 x 5 x 10)
Or 4 x 5 x 100</td><td>350

(5 x 10 x 7)</td></tr><tr><td>8</td><td>320

(8 x 4 x 10)</td><td>56</td></tr></table></td>
<td>Leading to multiplication using a compact method

3 7 8 ×
7
2 6 4 6
5 5

4 5 6 9 ×
8
3 6 5 5 2
4 5 7</td>
<td>Compact for TU × TU

28 × 39

2 8 ×
3 9
2 5 2
7
8 4 0
2
1 0 9 2

567 × 86

5 6 7
8 6
3 4 0 2
4 4
4 5 3 6 0
5 5
4 8 7 6 2</td>
</tr>
</table>

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Year 6 Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication	Perform mental calculations, including with mixed operations and large numbers	**Mental calculation** **Partitioning** **5.7 × 6** **5 × 6 = 30** **0.7 × 7 = 4.2** **30 + 4.2 = 34.2** **5.3 × 19** **5.3 × 10 × 2 = 106** **106 – 5.3 = 100.7**	**3749 × 38** **3 7 4 9 ×** **3 8** **2 9 9 9 2** 5 3 7 **1 1 2 4 7 0** 2 1 2 **1 4 2 4 6 2** 1 1 1		

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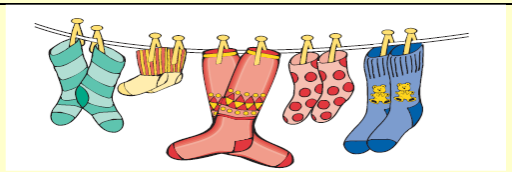
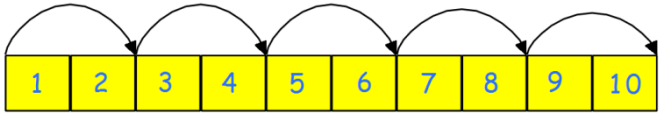
Division

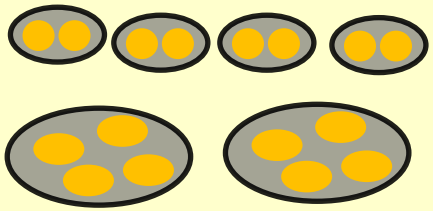
Year 1

Solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher.





There are eight oranges.
Can you share them equally?

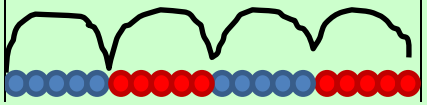


Year 2

Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs

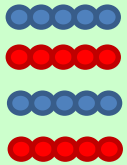
Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers

Counting

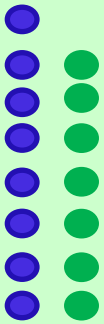


0 5 10 15 20

Relate division to counting and multiplication facts. Count in 5s to see that there are 4 5s in 20.



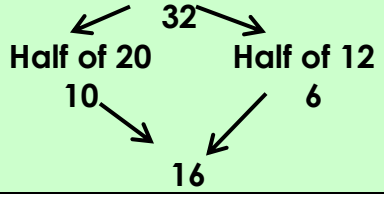
How many groups of five are there in 20?



Recall and Derive Halves

Look at doubles of even numbers and seeing half of odd numbers as one left over or ½

Halving by partitioning

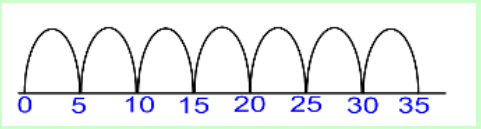


Division by sharing

10 ÷ 5 =

Division by grouping

35 ÷ 5 =



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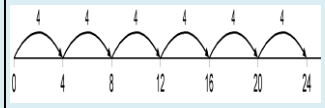
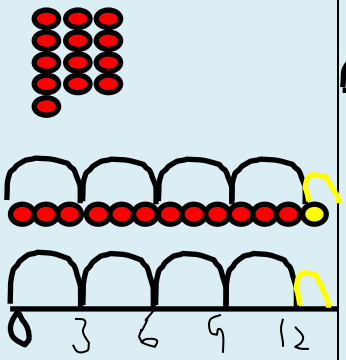
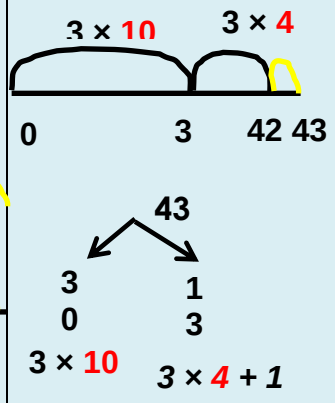
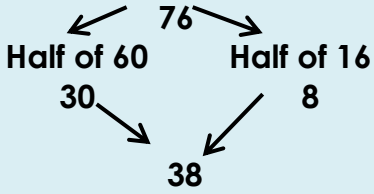
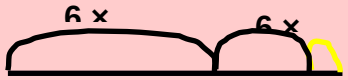
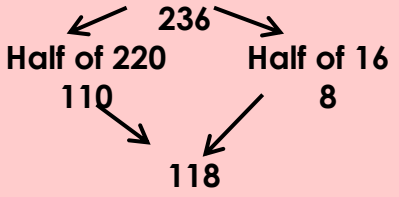
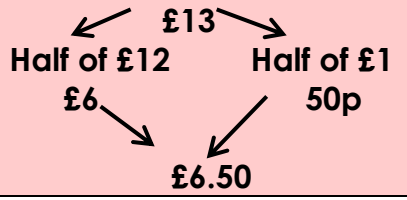
Year 3 Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers divided one-digit numbers, using mental and progressing to formal written methods	Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables Use facts for numbers up to 10 times the divisor E.g. 28 ÷ 3 This is between 27 ÷ 3 = 9 and 30 ÷ 3 = 10 So 9 remainder 1	**Counting** Relate division to counting and multiplication facts. Count in 4s to see that there are 6 4s in 24  Arrays show 6 groups of 4 so 24 ÷ 4 = 6	**Division as grouping** **13 ÷ 3 = 4 r1**  	**Division as grouping** **43 ÷ 3**  	**Halving by partitioning** 
Year 4 Use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers Divide two-digit and three-digit numbers by a one-digit number using	Division facts for multiplication tables up to 12 × 12 Use facts for numbers up to 10 times the divisor E.g. 75 ÷ 9 This is between 72 ÷ 9 = 8 and 81 ÷ 9 = 9 So 8 remainder 3	**Division as grouping** Combine multiples of the divisor to support you **87 ÷ 6 =**  	**Division by grouping leading to formal division** **87 ÷ 6** 14 r3 6 | 87 60 27 24 3	**Halving by partitioning**  

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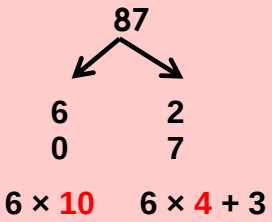
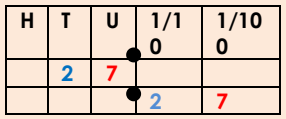
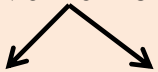
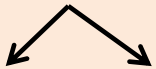
formal written layout				
Year 5 Divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context	multiply and divide numbers mentally drawing upon known facts Divide numbers by 10 and 100 	**Division as grouping drawing on known facts** Use partitioning and known facts 196 ÷ 6 = 32r4  (6 x 30) (6 × 2 + 4) 325 ÷ 3= 108r1  (3×100) (3×8) + 1)	**Division leading to formal division** **578 ÷ 7** **82 r 4** **7 ⟌ 5 7 8** **5 6 0** **1 8** **1 4** **4**	**Formal (short) Division** **638 ÷ 8** **7 9 r 4** **8 ⟌ 6 $_{6}$3 $_{7}$8** **6725 ÷ 7** **0 9 6 0 r5** **7 ⟌ 6 $_{6}$7 $_{4}$2 5**

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Year 6	Use known facts	Short Division	Long Division drawing on known facts	Use tests of divisibility	Use place value and division facts
Divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context Divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context	Know 378 is a multiple of 3 because 300/60 and 18 are all multiples of 3 Know 385 is a multiple of 7 because 350 and 35 are multiples of 7	**638 ÷ 8** 7 9 r 4 8 ⟌ 6 6 3 7 8 **6725 ÷ 7** 0 9 6 0 r5 7 ⟌ 6 6 7 4 2 5	**493 ÷ 15** 32 r 13/15 15 ⟌ 4 9 3 4 5 0 4 3 3 0 1 3	Multiple of 3, digits in the number add to 3, 6 or 9 Multiple of 4, tens and ones in the number are a multiple of 4 Multiple of 6, the number is even and digits in the number add to 3, 6 or 9 Multiple of 9, digits in the number add to 9	**1.32 ÷ 3 = 1/100 of 132 ÷ 3** **132 ÷ 3 = 44** **44 ÷ 100 = 0.44** **So 1.32 ÷ 3 = 0.4**

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