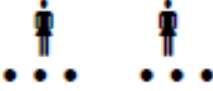
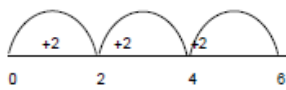
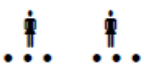
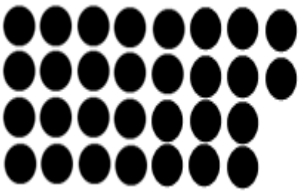

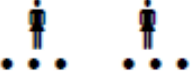
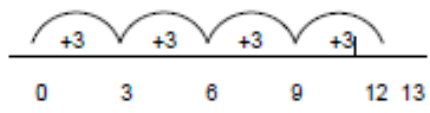


Foundation Stage

|                                   |  |
|-----------------------------------|--|
| <p><b>Mental and jottings</b></p> |  |
| <p><b>Written</b></p>             | <p>Sharing: 6 sweets are shared between 2 people. How many do they have each?</p>  <p>This could also be represented as grouping e.g. 3 duplo people fit into one carriage. How many carriages can I fill?</p> <hr/> <p>Sharing = children know the number that they start with and the number of groups. The unknown is <i>how many</i> they have.</p> <p>Grouping = children know the number to start with and the size of the group. The unknown is <i>the number</i> of groups.</p> <p>At Foundation stage children need both experiences of sharing and grouping.</p> <ul style="list-style-type: none"> <li>• Practical problems linking doubling and halving – e.g. half of 12 is 6 – shown pictorially and with objects. Half of 7 is 3 and a half</li> </ul> |
| <p><b>Underlying Skills</b></p>   | <ul style="list-style-type: none"> <li>•</li> </ul>  |
| <p><b>Vocabulary</b></p>          | <ul style="list-style-type: none"> <li>•</li> </ul>  |

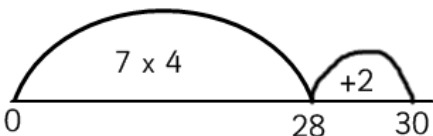
Key Stage 1

|                            | Year 1   | Year 2   |
|----------------------------|--|--|
| <b>Mental and jottings</b> | <ul style="list-style-type: none"> <li>Count in multiples of 2s, 5s and 10s</li> </ul>   | <ul style="list-style-type: none"> <li>Count in steps of 2, 3 and 5 from 0 and in 10s from any number forward or backward</li> <li>Recall and use <math>\times</math> and <math>\div</math> facts for the 2, 5 and 10 tables including recognising odd and even numbers</li> <li>Show that <math>\times</math> of 2 number can be done in any order (commutative) and <math>\div</math> of one number by another cannot</li> <li>Signs and missing numbers – <math>\times</math> and <math>\div</math></li> </ul> $\begin{array}{l} 6 \div 2 = \square \quad \square = 6 \div 2 \\ 6 \div \square = 3 \quad 3 = 6 \div \square \\ \square \div 2 = 3 \quad 3 = \square \div 2 \\ \square \div \nabla = 3 \quad 3 = \square \div \nabla \end{array}$  |
| <b>Written</b>             | <p><u>Understand division as sharing and grouping</u></p> <p><math>6 \div 2</math> can be modelled as:</p> <p>Grouping: There are 6 sweets. How many people can have 2 each? (How many 2s make 6?)</p>  <p>Sharing: 6 sweets are shared between 2 people. How many do they have each?</p>  <ul style="list-style-type: none"> <li>Share objects into equal groups and count how many in each in practical problem solving contexts</li> <li>Present pictorially e.g. xxx and xxx is 6 shared into 2 groups of 3</li> <li>Present sharing as arrays – use practical equipment such as peg boards, cubes and other real life arrays such as egg boxes and cake trays – show how sharing is linked with multiplication</li> </ul>   | <ul style="list-style-type: none"> <li>Calculate mathematical statements for <math>\times</math> and <math>\div</math> within the <math>\times</math> tables and write them using the appropriate signs – <math>\times</math>, <math>\div</math>, =</li> <li>Understand division as sharing and grouping:</li> </ul> <p><math>6 \div 2</math> can be modelled as:</p> <p>Grouping: There are 6 sweets. How many people can have 2 each? (How many 2s make 6?) (See diagram for Year 1)</p> <p>To recognise and understand the concept of a remainder.</p> <p>Sharing: 6 sweets are shared between 2 people. How many do they have each?</p>  <ul style="list-style-type: none"> <li>Understand division as 'how many groups'? e.g. <math>6 \div 2 =</math> how many groups of 2 are there in 6?</li> <li>Use arrays to count groups</li> <li>Use number lines to jump in the appropriate size</li> <li>Include understanding of remainders</li> </ul> <p><math>13 \div 3 = 4 \text{ r}1</math></p>  |
| <b>Underlying Skills</b>   | <ul style="list-style-type: none"> <li>One to one correspondence matching a number to each object</li> <li>Understand sharing as everyone having the same</li> </ul>   | <ul style="list-style-type: none"> <li>Understand how to read number sentences such as 'how many groups'</li> <li>Count forwards in steps of different single digit numbers accurately</li> </ul>  |

## Maths Calculation – Division

|                   |  |   |
|-------------------|--|---|
|                   | <ul style="list-style-type: none"><li>• Physical process of sharing – “one for you and one for me” !</li><li>• Knowing to count how many in a group to find the answer</li></ul> | <ul style="list-style-type: none"><li>• Knowledge of x tables</li></ul>   |
| <b>Vocabulary</b> | <ul style="list-style-type: none"><li>• Share, group, the same, fair, count</li></ul>  | <ul style="list-style-type: none"><li>• Division, divide, how many groups, how many times, remainder, left over, count on, count up, array, number line, jump, group, column, row</li></ul> |

Lower Key Stage 2

|                            | Year 3   | Year 4  |
|----------------------------|--|---|
| <b>Mental and jottings</b> | <ul style="list-style-type: none"> <li>Count from 0 in multiples of 4, 8, 50 and 100</li> <li>Write and calculate mathematical statements for <math>\times</math> and <math>\div</math> using the <math>\times</math> tables they know, including for 2 digit numbers times 1 digit numbers using mental and progressing of formal written methods</li> <li>Recall and use <math>\times</math> and <math>\div</math> facts for the 3, 4, and 8 times tables</li> </ul>   | <ul style="list-style-type: none"> <li>Count in multiples of 6, 7, 9, 25 and 1000</li> <li>Recognise and use factor pairs and commutativity in mental calculations e.g. <math>48 \div 6 = 48 \div 2 \div 3 =</math></li> <li>Use place value, known and derived facts to <math>\times</math> and <math>\div</math> mentally including <math>\times</math> by 0 and 1 and dividing by 1, multiplying 3 numbers together</li> <li>Recall <math>\times</math> and <math>\div</math> facts up to <math>12 \times 12</math></li> </ul>                     |
| <b>Written</b>             | <ul style="list-style-type: none"> <li>Write and calculate mathematical statements for <math>\times</math> and <math>\div</math> using the <math>\times</math> tables that they know, including for 2 digit numbers times 1 digit numbers using mental and progressing to formal written methods</li> <li>As knowledge of <math>\times</math> facts improves understand that we can work out a larger group or chunk first to become more efficient e.g. <math>30 \div 4 = 7 \text{ r } 2</math>. How many groups of 4 are in 30? - Show this as a number line</li> </ul>  <p><b>Progressing to the bus stop method:</b></p> $\begin{array}{r} 7 \text{ remainder } 2 \\ 4 \overline{) 30} \end{array}$ <ul style="list-style-type: none"> <li>Continue and consolidate up to all tables – <math>12 \times 12</math></li> <li>Include calculations which give a remainder</li> </ul> | <ul style="list-style-type: none"> <li>Continue with bus stop method from Year 3 using larger numbers</li> </ul> $362 \div 7 =$ $\begin{array}{r} 0 \ 5 \ 1 \ \text{r} \ 5 \\ 7 \overline{) 362} \end{array}$ $362 \div 7 = 51 \text{ r } 5$ <ul style="list-style-type: none"> <li>Terminology to include 3 hundreds, 2 tens etc</li> <li>Make sure children put a place holder when calculating – e.g. in the example above a place holder '0' is placed above the '3'</li> <li>Where appropriate put in H T and U above the calculation</li> </ul> |
| <b>Underlying Skills</b>   | <ul style="list-style-type: none"> <li>Understand how to read number sentences as 'how many groups'</li> <li>Recall of appropriate <math>\times</math> facts</li> </ul>  | <ul style="list-style-type: none"> <li>Recall of appropriate <math>\times</math> facts</li> <li>Subtract 1 and 2 digit number mentally</li> </ul>   |
| <b>Vocabulary</b>          | <ul style="list-style-type: none"> <li>Times tables, multiplication facts</li> </ul>   | <ul style="list-style-type: none"> <li>Chunk, take away</li> </ul>  |

## Maths Calculation – Division

### Upper Key Stage 2

|                            | Year 5  | Year 6  |
|----------------------------|---|---|
| <b>Mental and Jottings</b> | <ul style="list-style-type: none"> <li>Count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000</li> <li>X and ÷ numbers mentally drawing upon known facts</li> <li>X and ÷ whole numbers and those involving decimals by 10, 100 and 1000</li> </ul>  | <ul style="list-style-type: none"> <li>Perform mental calculations including with mixed operations and large numbers</li> <li>Associate a fraction with division and calculate decimal fraction equivalents – e.g. <math>\frac{3}{8}</math> is <math>3 \div 8</math></li> </ul>   |
| <b>Written</b>             | <ul style="list-style-type: none"> <li>Divide numbers up to 4 digits by a 1 digit number using the formal written method of short division (bus stop) and interpret remainders appropriately for the context</li> <li>Progress from remainders to decimal places</li> </ul> <p>e.g.</p> $\begin{array}{r} 141.4 \\ 7 \overline{) 99.00} \end{array}$  | <ul style="list-style-type: none"> <li>Divide numbers up to 4 digits by a 2 digit whole number using formal written method of short division (bus stop)</li> <li>Divide numbers up to 4 digits by a 2 digit whole number using formal written method of long division and interpret remainders as a whole number remainders, fractions, or by rounding as appropriate for the context</li> <li>Use written division methods in cases where the answer has up to two decimal places</li> <li>Short division method as for Year 5</li> <li>Long division method as follows moving to long division with decimal places. Children do continue to support their calculations with jotting – e.g.<br/> <math>1 \times 31 = 31</math><br/> <math>2 \times 31 = 62</math><br/> <math>3 \times 31 = 93</math> etc</li> </ul> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <math display="block">\begin{array}{r} 17 \text{ r } 19 \\ 31 \overline{) 546} \\ \underline{31} \phantom{0} \\ 236 \\ \underline{217} \\ 19 \end{array}</math> </div> <div style="text-align: center;"> <math display="block">\begin{array}{r} 017 \\ 25 \overline{) 425} \\ \underline{0} \phantom{0} \\ 42 \\ \underline{25} \\ 175 \\ \underline{175} \\ 000 \end{array}</math> </div> </div> |
| <b>Underlying Skills</b>   | <ul style="list-style-type: none"> <li>Recall of appropriate x facts</li> <li>Using known number facts to help derive others using place value e.g. <math>2 \times 4 = 8</math> so <math>20 \times 4 = 80</math>, doubling <math>10 \times 6 = 60</math> so <math>20 \times 6 = 120</math> and adding known facts <math>10 \times 3 = 30</math>, <math>5 \times 3 = 15</math> so <math>15 \times 3 = 45</math></li> <li>Mental subtraction</li> <li>Secure knowledge of written subtraction method for more difficult calculations</li> </ul> |   |
| <b>Vocabulary</b>          | <ul style="list-style-type: none"> <li>Fraction, decimal, equivalent, simplest form</li> </ul>  |   |