



Learning through hard work, friendship and fun.



Calculation Policy
Reviewed July 1st 2021

Calculation Policy Forward - Reviewed July 2021

Please note:

All methods for the 4 calculations in this policy will be shown and taught to the children at school.

Children working at mastery standard in numeracy can select their own methods for calculations, whether from our policy or not.


Mental methods will be developed and consolidated and children should draw on a written method if they cannot tackle a calculation mentally (possibly with informal jottings).

If you have any queries at all ask the maths co-ordinator or the class teacher and we will talk you through the process.

	EYFS	EYFS	KS1	KS2	Additional for KS2
Addition	<p>Counting forwards in 1s</p> <p>Counting on and back in 1s</p> <p>Number bonds to 10</p>	<p>Use large number tracks to jump along (forwards and back)</p> <p>Pattern facts</p> <p>Large number tracks jumping along</p> <p>Use signs + =</p> <p>Know doubles to 5 + 5 in head</p> <p>Addition with apparatus or a given (published) number line or number track to 10</p> <p>Recording pictorial with matching digits</p> <p>Use fingers to count on</p> <p>Jumping along.</p> <p>Numicon to learn to count</p> <p>Touch count objects</p> <p>Nursey rhymes and songs.</p>	<p>Make inverse connections</p> <p>Add multiples of 10 up to 100 using 100 square</p> <p>Use 100 square and 10s and units apparatus</p> <p>Use fingers or apparatus to count on</p> <p>Use given number line or 100 square (counting on) (2 digit + 2 digit)</p> <p>Partition to add (2nd number only)</p> <p>59 + 15 = 59 + 10 =69 69 + 5 = 74</p> <p>Therefore 59 + 15 is 74</p>	<p>Use this to lead up to column method <u>if necessary</u></p> $\begin{array}{r} 374 \\ 495 + \\ \hline 9 \\ 160 \\ 700 \\ \hline 869 \end{array}$ <p>Traditional column method</p> $374 + 495$ $\begin{array}{r} 374 \\ 4_195 + \\ \hline 869 \end{array}$	

	EYFS	EYFS	KS1	KS2	Additional for KS2
Subtraction	<p>Less than and fewer than</p> <p>Nursery rhymes and songs - 5 current buns</p> <p>Using their fingers to count.</p> <p>Numbers to 5</p>	<p>Take away objects or apparatus from a group. OR take away visuals from IWB.</p> <p>Use known number bonds to 10</p> <p>Subtraction with apparatus or a given (published) numberline to 20.</p> <p>Recording pictorial with matching digits.</p> <p>Use signs - =</p>	<p>Make inverse connections</p> <p>Subtract multiples of 10 up to 100 using 100 square and then in head counting back in 10s</p> <p>To know halves up to half of 20 (and link to doubling)</p> <p>Find the difference (less than 10) by counting on, on fingers</p> <p>A blank box / a question mark to stand for unknown eg $10 - \Delta = 3$</p> <p>Partition numbers 45-12 (jottings to show 12 is 10 and 2)</p> <p>45-10=35 35-2 = 33</p>	<p>932 – 457 becomes</p> $\begin{array}{r} 8 \quad 12 \quad 1 \\ 9 \quad 3 \quad 2 \\ - 4 \quad 5 \quad 7 \\ \hline 4 \quad 7 \quad 5 \end{array}$ <p>Answer: 475</p>	
Multiplication		<p>Sorting apparatus in same sized groups.</p> <p>Counting in groups of same size, eg counting in 2s, 5s, 10s</p>	<p>Learn times tables by chanting x1,2,5,10</p> <p>Relate multiplication to repeated addition eg $5 + 5 + 5 = 3 \times 5$</p> <p>Describe an array eg:</p> <p>• • • • • • • • • •</p> <p>$5 \times 2 = 10$</p> <p>Learn x2, x3 and x5 times tables</p>	<p>Learn times tables to 12×12</p> <p>Multiply by multiple of 10 by knowledge of HTU: <i>I know $3 \times 5 = 15$, so therefore I know $3 \times 50 = 150$</i></p>	<p>Short multiplication (when multiplying up to x12)</p> <p>2741 × 6 becomes</p> $\begin{array}{r} 2 \quad 7 \quad 4 \quad 1 \\ \times \quad \quad \quad 6 \\ \hline 1 \quad 6 \quad 4 \quad 4 \quad 6 \\ \quad \quad \quad 4 \quad 2 \\ \hline \end{array}$ <p>Answer: 16 446</p> <p>Long multiplication (when</p>

	EYFS	EYFS	KS1	KS2	Additional for KS2																																																		
				<p>GRID METHOD TO BE USED AS A JOTTING TO SUPPORT MENTAL METHODS</p> <p>$32 \times 6 = 192$</p> <table border="1" style="border-collapse: collapse; margin: 10px auto;"> <tr> <td style="border: none;"></td> <td style="border: none; border-right: 1px solid black; padding: 5px;">30</td> <td style="border: none; padding: 5px;">2</td> </tr> <tr> <td style="border: none; border-right: 1px solid black; padding: 5px;">6</td> <td style="border: none; border-right: 1px solid black; padding: 5px;">180</td> <td style="border: none; padding: 5px;">12</td> </tr> </table> <p>$180 + 12 = 192$</p>		30	2	6	180	12	<p>Additional for KS2</p> <p>multiplying by x13 or higher)</p> <p>124×26 becomes</p> <table style="margin: 10px auto;"> <tr> <td style="padding: 2px 5px;"></td> <td style="padding: 2px 5px; font-size: small;">1</td> <td style="padding: 2px 5px; font-size: small;">2</td> <td style="padding: 2px 5px;"></td> </tr> <tr> <td style="padding: 2px 5px;"></td> <td style="padding: 2px 5px;">1</td> <td style="padding: 2px 5px;">2</td> <td style="padding: 2px 5px;">4</td> </tr> <tr> <td style="padding: 2px 5px;">×</td> <td style="padding: 2px 5px;"></td> <td style="padding: 2px 5px;">2</td> <td style="padding: 2px 5px;">6</td> </tr> <tr> <td colspan="4" style="border-top: 1px solid black;"></td> </tr> <tr> <td style="padding: 2px 5px;"></td> <td style="padding: 2px 5px;">7</td> <td style="padding: 2px 5px;">4</td> <td style="padding: 2px 5px;">4</td> </tr> <tr> <td colspan="4" style="border-top: 1px solid black;"></td> </tr> <tr> <td style="padding: 2px 5px;"></td> <td style="padding: 2px 5px;">2</td> <td style="padding: 2px 5px;">4</td> <td style="padding: 2px 5px;">8 0</td> </tr> <tr> <td colspan="4" style="border-top: 1px solid black;"></td> </tr> <tr> <td style="padding: 2px 5px;"></td> <td style="padding: 2px 5px;">3</td> <td style="padding: 2px 5px;">2</td> <td style="padding: 2px 5px;">2 4</td> </tr> <tr> <td colspan="4" style="border-top: 1px solid black;"></td> </tr> <tr> <td style="padding: 2px 5px;"></td> <td style="padding: 2px 5px; font-size: small;">1</td> <td style="padding: 2px 5px; font-size: small;">1</td> <td style="padding: 2px 5px;"></td> </tr> </table> <p>Answer: 3224</p> <p>Be aware of eg 124×96 where numbers written in small print can be confused.</p>		1	2			1	2	4	×		2	6						7	4	4						2	4	8 0						3	2	2 4						1	1	
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	EYFS	EYFS	KS1	KS2	Additional for KS2
Division	Sharing objects	<p>Group apparatus (eg 14 shoes, put into 2s)</p> <p>Sharing apparatus between a number of people (eg 15 sweets shared between 5 people)</p> <p>Half numbers to 10 in head and using resources.</p>	<p>Learn inverses of known multiplications and use vocabulary sharing or grouping</p> <p>Remainders for calculations relating to $\times 2, 5, 10$ by counting in that number (grouping) and seeing what is left over.</p> <p>Pictorial sharing</p> <p>$12 \div 4 =$</p>  <p>3 (in each plate)</p>	<p>Divisions of all numbers up to 100 either with or without remainders (whole numbers), by counting in given divisor and seeing if there are any 'left over' (grouping)</p> <p>~I.e using associated multiplication facts.</p> <p>Linear lines and squares</p>	<p><u>Short division (Bus stop method)</u> This is when dividing by numbers between 1 and 12 inclusive</p> <p>$432 \div 5$ becomes</p> $\begin{array}{r} 86 \text{ r } 2 \\ 5 \overline{) 432} \\ \underline{40} \\ 32 \\ \underline{30} \\ 2 \end{array}$ <p>Answer: 86 remainder 2</p> <p><u>Long division</u> (this method used to be called chunking)</p> <p>This is when dividing by numbers above 9</p> <p>$432 \div 15$ becomes</p> $\begin{array}{r} 28 \text{ r } 12 \\ 15 \overline{) 432} \\ \underline{30} \\ 132 \\ \underline{120} \\ 120 \\ \underline{120} \\ 0 \end{array}$ <p>Answer: 28 remainder 12</p> <p>Remainders can be expressed as whole numbers left over, or fractions or decimals</p>

Resources that Early Years, KS1 and KS2 will use throughout the year.

Early Years

Resources and ideas

Twinkl

Tes

Activity village

Sparkle box

Communication4all

Primary resources

Numicon

Touch count objects

Nursery rhymes and songs

Number fans

Number counters

Fingers

Number tracks

Money

Cubes

Dice

Lego

Dominoes

10 frames

Timers

2D and 3D shapes

20 beads

Ordering numbers sticks

Threading numbers in order

Peg games

Magnetic numbers

Umbrella tiles

Washing line / number line

Mathematical games / board games

KS1

Resources and ideas:

Twinkl

NCETM

White Rose

2D and 3D shapes

Dice

Spotted dice

Flip chart

10 square / 100 square

Pegboards

Number fans

Coins

Magnetic numbers

Cubes

Tens frames

Base 10

Numicon

Number lines

Multilink

Place value counters - physical objects

Teddies

10s grids

KS2

Resources and ideas:

Heinemann books

Abacus books

Abacus evolve books

Power maths books

Twinkl

White rose maths

NCETM

Old numeracy strategy

TES

ITP

Squashy boxes

Hidden number fans.

outdoors

'work of art'

'just a minute'

'Grids' (or fluency work/precision teaching)

'odd one out'

'same and different'

Counting sticks

Board games / maths starter games

Jigsaws

Numicon

Base 10

Measuring snakes

100 bead strings

Maths Packs and Primary Games

100 squares

Times table grids up to 12 x 12

Whiteboards

Number lines

Cubes

2D and 3D shapes

Clocks

Base 10