



Cheadle Primary School

Calculation Guidelines

This policy has been written to standardise methods taught at our school. I hope it will prove to be useful to keep at home to support your children with their homework.

If your child has a different method that is secure they are welcome to use it.

Any questions please speak to your child's teacher or myself.

*Thank you, Mrs Price.
Maths Subject Leader.*

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Written Calculations				
Stages of Development	Addition	Subtraction	Multiplication	Division
Stage 1	<ul style="list-style-type: none"> -Practical activities for counting objects and combining sets. -Counting on using practical apparatus. -Counting on using a number line. -Mostly mental calculations with informal jottings. Teacher modeling and demonstrating recording. 	<ul style="list-style-type: none"> -Practical activities. -Counting back using practical apparatus. -Counting back using a number line. -Mostly mental calculations with informal jottings. Teacher modeling and demonstrating recording. 	<ul style="list-style-type: none"> - Counting in steps of 2 and 10. - Jumping along a number line. - Practical activities to demonstrate grouping / multiples of objects. 	<ul style="list-style-type: none"> - Counting back in steps of 2 and 10. - Jumping back along a number line. - Practical activities to demonstrate sharing objects equally.
Stage 2	<ul style="list-style-type: none"> -Continue to develop practical activities for counting objects and combining sets. -Continue to develop and refine practical activities for counting on. -Begin to record jumps of one on a number line. -Begin to record simple additions in a number sentence. 	<ul style="list-style-type: none"> -Continue to develop practical activities for subtraction. - Continue to develop and refine practical activities for counting back. - Begin to record jumps of one on a number line. - Begin to record simple subtractions in a number sentence. 	<ul style="list-style-type: none"> - Counting in 2's, 5's and 10's. - Begin to count in steps of 3. Practical activities to demonstrate grouping / multiples of objects. - Using number lines, grids and 100 squares to look for patterns of multiples. 	<ul style="list-style-type: none"> - Counting back in 2's, 5's and 10's. - Begin to count back in steps of 3. Practical activities to demonstrate sharing objects.
Stage 3	<ul style="list-style-type: none"> -Continue to develop and refine addition as combining sets and counting on. -Counting on a number line up to 20, 50, 100. -Counting on a blank number line and recording jumps in ones, tens and multiples of ten. -Record calculations above the line and numbers reached below. -Record additions in a number sentence. 	<ul style="list-style-type: none"> -Continue to develop and refine subtraction. -Counting back on a number line up to 20,50, 100. -Counting back on a blank number line recording jumps in ones, tens and multiples of ten. -Record calculations below the line and numbers reached below. - Record subtractions in a number sentence. 	<ul style="list-style-type: none"> - Counting in 2's, 3's, 5's and 10's. - Practical activities to make sets of objects. - Create arrays - Introduce multiplication as repeated addition. - Counting on marked, then unmarked number lines in appropriate multiples eg: 4 X 3 = '4 lots of 3' - Introduce the X sign and record in a number sentence. 	<ul style="list-style-type: none"> - Count back in 2's, 3's, 5's and 10's. - Practical activities to demonstrate sharing and grouping. - Introduce division as repeated subtraction. - Counting back on marked, then unmarked number lines in appropriate multiples. - Introduce the ÷ sign and record in a number sentence.

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<p>Stage 4</p>	<p>-Continue to develop understanding of addition as counting on steps along a number line. (multiples of 100, 10 or 1) -Introduce expanded vertical format. (<i>Teach the addition of units first</i>) e.g. $38 + 24 =$ $30 + 8$ $20 + 4$ <hr/> $50 + 12 = 62$ -When place value is secure introduce standard written method of TU + TU without and later with carrying.</p>	<p>-Continue to develop understanding of subtraction counting back on a number line. (multiples of 100, 10 or 1) -Introduce expanded vertical format with no exchange. (<i>Teach subtraction of units first</i>) e.g. $47 - 22 =$ $- 40 + 7$ $20 + 2$ <hr/> $20 + 5 = 25$ - When place value is secure introduce standard written method (decomposition) of TU - TU without and later with carrying.</p>	<p>- Continue to develop multiplication as repeated addition. - Count on unmarked number lines in multiples. - Describe arrays. - Record multiplication sums in a number sentence using x and = signs. Eg: $6 \times 3 = 18$ - Continue with 2x, 3x, 4x, 5x and 10x. - Introduce 6x and 8x tables.</p>	<p>- Continue to develop division as repeated subtraction. - Count back on an unmarked number line in multiples. - Record division sums in a number sentence using \div and = signs. Eg: $18 \div 6 = 3$ - Continue 2x, 3x, 4x, 5x and 10x division facts. - Introduce 6x and 8x division facts.</p>
<p>Stage 5</p>	<p>-Continue to develop and refine standard written method. -Introduce next step: HTU + TU Extend to HTU + HTU -Extend to decimals.</p>	<p>- Continue to develop and refine standard written method. -Introduce next step: HTU – TU Extend to HTU –HTU -Extend to decimals.</p>	<p>- Continue 2x, 3x, 4x, 5x, 6x, 8x and 10x. - Introduce 7x and 9x. - Introduce TU X U, partition T and U and use brackets to separate. Eg $17 \times 4 =$ $(10 \times 4) + (7 \times 4)$ $40 + 28 = 68$ - When secure introduce vertical format Eg 26 $\times 3$ <hr/> $18 (6 \times 3)$ $60 (20 \times 3)$ <hr/> 78</p>	<p>- Continue with division facts for 2x, 3x, 4x, 5x, 6x, 8x and 10x. - Introduce 7x and 9x division facts. - Introduce remainders. Eg: $23 \div 5 = 4 \text{ r } 3$</p>

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<p>Stage 6</p>	<p>-Continue to develop methods from Stage 5. -Introduce THTU + HTU Extend to THTU + THTU -Continue to develop and refine addition of decimals.</p>	<p>- Continue to develop methods from Stage 5. -Introduce THTU – HTU Extend to THTU – THTU - Continue to develop and refine Subtraction of decimals.</p>	<p>- Continue with 2x, 3x, 4x, 5x, 6x, 7x, 8x, 9x and 10x. - Introduce 11x and 12x. - Develop vertical format as above. Extend to HTU X U. 153 X 5 ----- 15 (3 X 5) 250 (50 X5) 500 (100 X 5) ----- 765 - When secure, introduce standard written method: Eg: 34 X3 ----- 102 ----- 1 146 X 3 ----- 438 ----- 11</p>	<p>- Continue with division facts for 2x, 3x, 4x, 5x, 6x, 7x, 8x, 9x and 10x. - Introduce division facts for 11x and 12x. - Introduce standard written method for division. (Long division NNS page 69.) TU ÷ U written - Introduce without remainders then with remainders. - Extend to: HTU ÷ U</p>
<p>Stage 7</p>	<p>-Consolidation of strategies above.</p>	<p>-Consolidation of strategies above.</p>	<p>- Develop standard written methods and extend to: TU xTU ----- then: HTU X TU ----- - Develop written methods to include multiplication of decimals, up to two decimal places. Eg – 2.87 X 3 ----- Then: 19.64 X 7</p>	<p>- Develop standard written methods and extend to: ThHTU ÷ U Then: HTU ÷ TU (short division and long division) - Develop written methods to include division of decimals, up to two decimal places.</p>

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