

# Grade 3 Math Curriculum

## Autumn term

EVERY DAY: Practise and develop oral and mental skills (e.g. counting, mental strategies, rapid recall of +, -, x and ÷ facts)	
Read and write whole numbers up to 10000 Add/subtract 1, 10, 100 to any whole number Count on or back in 10s, 100s from any two- or three-digit number Round any three-digit number to the nearest 10 or 100 Recall addition and subtraction facts for each number up to 20	Add/subtract a pair of two-digit numbers (not crossing 10 or 100 boundary) Derive doubles of whole numbers to 50, corresponding halves Recall multiplication facts in x2, x3, x4, x5, x10 tables and derive division facts Multiply a two-digit number by 10

Topic	Objectives: children will be taught to
Place value, ordering, rounding	Read and write whole numbers to 10000 in figures and words Know what each digit represents and partition into Th H T U Read and write the vocabulary of estimation Estimate up to 250 objects Estimate a proportion (fraction)
Reading numbers from scales	Read scales to a suitable degree of accuracy
Understanding + and –	Consolidate understanding of relationship between addition/subtraction
Mental calculation strategies (+ –)	Understand commutative law of addition Count on or back in repeated steps of 1, 100, 1000
Pencil and paper procedures (+ –)	Identify near doubles. Count up through next multiple of 10, 100, 1000
Money and 'real life' problems	Use informal pencil and paper methods to support, record or explain addition and subtraction.
Making decisions, checking results	Convert € to c. Choose appropriate number operations and calculation methods to solve money or 'real life' word problems with one/two steps. Explain and record methods. Check with addition in a different order.
Measures, including problems	Use, read, write km, m, cm, mm and mile Know and use relationships between units. Know $\frac{1}{2}$ , $\frac{1}{4}$ , $\frac{3}{4}$ , $\frac{1}{10}$ of 1 kilometre in m, 1 metre in cm or mm Suggest suitable units and equipment to estimate or measure length Record metres and centimetres using decimals, and other measurements using mixed units. Convert up to 1000 cm to metres and vice versa. Measure/calculate perimeter of rectangles and simple shapes (cm) Choose appropriate number operations and calculation methods to solve measurement word problems with one or more steps. Explain and record methods
Shape and space	Describe and visualise 3-D and 2-D shapes, inc tetrahedron, heptagon Recognise equilateral and isosceles triangles
Reasoning about shapes	Classify shapes (right angles, regularity, symmetry). Recognise position on square grids with numbered lines Investigate general statements about shapes
Assess and review	

Read and write whole numbers up to 10000 Count on/back in 10s, 100s from any two-/three-digit number Round any three-digit number to the nearest 10 or 100 Add/subtract a pair of two-digit numbers (crossing 10 but not 100 boundary)	Derive doubles of whole numbers to 50, corresponding halves Recall addition and subtraction facts, for each number up to 20 Recall multiplication facts in x2, x3, x4, x5, x10 tables and derive division facts Multiply and divide whole numbers by 10
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Properties of numbers and number sequences	Recognise, extend number sequences formed by counting from any number in steps of constant size, e.g. 25 to 500 Recognise odd and even numbers up to 1000 and some of their properties, e.g. sums, differences of pairs of odd/even numbers. Solve number puzzles, recognise patterns, generalise and predict.
Reasoning about numbers	
Understanding x and ÷	Extend understanding of x and ÷ and their relationship to each other and to + and –
Mental calculation strategies (x ÷)	Use doubling and halving of two-digit numbers, e.g. $x4=\text{double double}$ , $x5=x10 \text{ halve}$ , $x20=x10 \text{ double}$ , $x8=x4\text{double}$ , $\frac{1}{4}=\text{half on one } \frac{1}{2}$ .
Pencil and paper procedures (x ÷)	Approximating first, use informal pencil and paper methods to multiply and divide.
Money and 'real life' problems	Choose appropriate number operations and calculation methods to solve money and 'real life' word problems with one or more steps.
Making decisions, checking results	Explain and record methods. Check with equivalent calculation
Fractions and decimals	Use fraction notation. Recognise fractions that are several parts of a whole, and mixed numbers. Find fractions of shapes Relate fractions to division and find simple fractions of quantities
Understanding + and –	Consolidate understanding of subtraction as the inverse of addition
Mental calculation strategies (+ –)	Find a small difference by counting up Use relationship between + and –
Pencil and paper procedures (+ –)	Develop written methods for + and – of whole numbers less than 1000
Time, including problems	Use, read, and write vocabulary of time. Read time to 1 min. on analogue/12 hour digital clock. Use 9:53 am and pm. Solve time word problems.
Handling Data	Solve a given problem by collecting, classifying, representing and interpreting data in tally charts, frequency tables, pictograms (symbols representing 2, 5, 10 units). Include use of computer
Assess and review	

# Grade 3 Math Curriculum

## Winter term

EVERY DAY: Practise and develop oral and mental skills (e.g. counting, mental strategies, rapid recall of +, -, x and ÷ facts)	
<p>Read and write whole numbers up to 1000</p> <p>Count on/back in 10s, 100s from any two-/three-digit number</p> <p>Recall addition and subtraction facts for each number to 20</p> <p>Round any three-digit number to the nearest 10 or 100</p> <p>Add/subtract a pair of two-digit numbers (crossing 10 but not 100 boundary)</p>	<p>Derive doubles of multiples of 10 to 500, corresponding halves</p> <p>Recall multiplication facts in x2, x3, x4, x5, x10 tables and derive division facts.</p> <p>Derive multiplication facts in 8 times table and begin to recall them</p> <p>Multiply and divide whole numbers by 10</p> <p>Write subtraction fact corresponding to given addition fact</p>

Topic	Objectives: children will be taught to
<p>Place value, ordering, rounding</p> <p>Reading numbers from scales</p>	<p>Multiply and divide an integer up to 1000 by 10; understand the effect</p> <p>Read and write the vocabulary of comparing and ordering numbers</p> <p>Use symbols = &lt;&gt; correctly. Give a number lying between two others</p> <p>Use vocabulary of approximation</p> <p>Round any positive number less than 1000 to nearest 10</p> <p>Recognise negative numbers in context: number line, thermometer</p>
<p>Understanding + and -</p> <p>Mental calculation strategies (+ -)</p> <p>Pencil and paper procedures (+ -)</p> <p>Money and 'real life' problems</p> <p>Making decisions, checking results</p>	<p>Understand principle (not name) of commutative law for + not -</p> <p>Add several small numbers by finding pairs that total 10, or 9 or 11</p> <p>Partition into tens and units, adding tens first</p> <p>Ass three two-digit multiples of 10</p> <p>Develop/refine written methods for addition/subtraction, including money</p> <p>Choose appropriate number operations and calculation methods to solve money and 'real life' word problems with one or more steps</p> <p>Explain working. Check with an equivalent calculation</p>
<p>Measures, and time, including problems</p> <p>Shape and space</p> <p>Reasoning about shapes</p>	<p>Estimate and check times using seconds, minutes, hours</p> <p>Measure and compare using kilograms and grams and know and use the relationship between them. Know <math>\frac{1}{4}</math>, <math>\frac{1}{2}</math>, <math>\frac{3}{4}</math> and <math>\frac{1}{10}</math> of 1 kg in grams</p> <p>Suggest suitable units and equipment to estimate or measure mass</p> <p>Read scales</p> <p>Record measurements to suitable degree of accuracy, using mixed units, or the nearest whole/half/quarter unit (e.g. 3.25kg)</p> <p>Measure and calculate area of rectangles and simple shapes, using counting methods and standard units (square centimetres).</p> <p>Choose appropriate number operations and calculation methods to solve measurement word problems with one or more steps.</p> <p>Explain working.</p> <p>Make shapes and discuss properties</p> <p>Visualise solid shapes from 2-d drawings. Identify simple nets</p> <p>Recognise clockwise, anti-clockwise. Start to draw, measure and order angles. Use eight compass points. Recognise horizontal and vertical lines</p> <p>Solve shape problems or puzzles. Explain reasoning and methods</p>
Assess and review	

<p>Read and write whole numbers up to 10000</p> <p>Count on or back in equal steps including below zero</p> <p>Derive doubles of multiples of 10 to 500, corresponding halves</p> <p>Round any three-digit number to the nearest 10 or 100</p> <p>Add/subtract two two-digit numbers (crossing 10 but not 100 boundary).</p>	<p>Recall addition and subtraction facts for each number up to 20</p> <p>Recall multiplication facts in x2, x3, x4, x5, x10 tables and derive division facts.</p> <p>Derive multiplication facts in x6 table and begin to recall them</p> <p>Multiply and divide whole numbers by 10</p> <p>Derive addition pairs that total 100, multiples of 50 that total 1000</p>
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<p>Properties of numbers and number sequences</p> <p>Reasoning about numbers</p>	<p>Recognise, extend number sequences formed by counting from any number in steps of constant size, extend beyond zero if counting back.</p> <p>Investigate general statements about familiar numbers.</p> <p>Explain methods and reasoning</p>
<p>Understanding x and ÷</p> <p>Mental calculation strategies (x ÷)</p> <p>Pencil and paper procedures (x ÷)</p> <p>Money and 'real life' problems</p> <p>Making decisions, checking results</p>	<p>Understand commutative and associative laws of multiplication.</p> <p>Divide a whole number of € by 2, 4, 5 or 10 to give €/c</p> <p>Use closely related facts, e.g. derive x9 or x11 from x10, or derive x6 from x4 plus x2.</p> <p>Partition and multiply</p> <p>Develop and refine written methods of Tu x U</p> <p>Choose appropriate number operations and calculation methods to solve money and 'real life' word problems with one or more steps.</p> <p>Explain working</p> <p>Check with inverse operation</p>
Fractions and decimals	<p>Recognise equivalence of simple fractions</p> <p>Identify two fractions with total of 1</p> <p>Compare a fraction with one half, and say whether it is greater or less</p> <p>Use decimal notation for tenths, hundredths (money, metres and centimetres) and use in context. Round to the nearest € or metre.</p> <p>Convert € to c, or metre to centimetres and vice versa</p> <p>Order decimals with two places</p>
Handling data	<p>Solve a given problem by collecting, classifying, representing and interpreting data in bar charts; intervals labelled in 2s, 5s, 10s, 20s</p> <p>Include use of computer</p>
Assess and review	

# Grade 3 Math Curriculum

## Summer term

EVERY DAY: Practise and develop oral and mental skills (e.g. counting, mental strategies, rapid recall of +, -, x and ÷ facts)	
<p>Read and write whole numbers up to 10000            Add/subtract 10, 100, 1000 from any two-/three-digit number            Derive doubles of multiples of 100 to 5000, corresponding halves            Round any three-digit number to the nearest 10 or 100            Add/subtract a pair of two-digit numbers (crossing 10 but not 100 boundary)</p>	<p>Recall addition and subtraction facts for each number to 20            Derive addition pairs that total 100 and multiples of 50 that total 1000            Recall multiplication facts in x2, x3, x4, x5, x10 tables and derive division facts            Begin to recall facts in x6 and x8 tables            Multiply or divide whole numbers by 10 or 100            Multiply TU by U, e.g. 13x3</p>

Topic	Objectives: children will be taught to
Place value, ordering, rounding	<p>Begin to multiply whole numbers by 100            Order a set of whole numbers up to 10000            Round any positive integer to the nearest 10 or 100</p>
Reading numbers from scales	Read a variety of scales and dials to a suitable degree of accuracy
<p>Understanding + and –            Mental calculation strategies (+ –)</p> <p>Pencil and paper procedures (+ –)            Money and 'real life' problems            Making decisions, checking results</p>	<p>Understand the principles of associative law for addition (not name)            Add or subtract the nearest multiple of 10 and adjust            Use number facts and place value to add/subtract mentally any pair of two-digit whole numbers            Develop, refine written methods for column addition/subtraction            Add more than two whole numbers less than 1000, and money            Choose appropriate operations and calculation methods to solve money and 'real life' word problems with one or more steps.            Explain working            Check using knowledge of sums of odd/even numbers</p>
Measures, including problems	<p>Use, read, write, litre (l), millilitre (ml), pint            Know <math>\frac{1}{4}</math>, <math>\frac{1}{2}</math>, <math>\frac{3}{4}</math>, <math>\frac{1}{10}</math> of 1 litre in ml            Suggest suitable units and equipment to estimate or measure capacity            Read scales            Record measurements to suitable degree of accuracy, using mixed units, or the nearest whole/half/quarter unit (e.g. 3.25 litres)            Choose appropriate number operations and calculation methods to solve measurement word problems with one or more steps            Explain working            Sketch reflection of simple shape in a mirror            Read and begin to write the vocabulary of movement</p>
<p>Shape and space            Reasoning about shapes</p>	<p>Make and describe patterns involving translation            Begin to measure angles in degrees            Know whole turn 360, 4 right angles; quarter turn, 90, 1 right angle; half turn, 180, 2 right angles.            Recognise 45 as half a right angle.</p>
Assess and review	

<p>Read and write whole numbers up to 10000            Count on/back in equal steps including beyond zero            Recall addition and subtraction facts for each number to 20            Round any three-digit number to the nearest 10 or 100            Add/subtract any pair of two-digit numbers (including crossing 10 and 100 boundary).</p>	<p>Derive doubles of multiples of 100 to 5000, corresponding halves            Derive addition pairs that total 100, multiples of 50 that total 1000            Recall multiplication facts in x2, x3, x4, x5, x10 tables and derive division facts. Begin to recall facts in x6 and x8 tables            Derive facts in x9 table, eg from 10 lots subtract 1 lot            Multiply by partitioning, eg 23x4</p>
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<p>Properties of numbers and number sequences            Reasoning about numbers</p>	<p>Recognise multiples of 2, 3, 4, 5, 10 up to <math>10^{\text{th}}</math> multiple            Solve number problems and puzzles            Explain methods and reasoning orally and in writing</p>
<p>Understanding x and ÷            Mental calculation strategies (x ÷)</p> <p>Pencil and paper procedures (x ÷)            Money and 'real life' problems            Making decisions, checking results</p>	<p>Understand distributive law            Round up or down after division            Use relation between x and ÷            Use known facts to multiply and divide            Develop and refine written methods for TU ÷ U            Choose appropriate operations and calculation methods to solve many and 'real life' word problems with one or more steps.            Explain working. Check results by approximating.</p>
Fractions and decimals	<p>Begin to use ideas of simple proportion            Recognise the equivalence of decimal, fraction forms of one half, one quarter and tenths.</p>
<p>Understanding + and –            Mental calculation strategies (+ –)            Pencil and paper procedures (+ –)            Time, including problems</p>	<p>Consolidate understanding of addition and subtraction            Add/subtract mentally any pair of two-digit whole numbers            Refine column addition and subtraction            Read timetables and use this year's calendar            Solve problems involving time</p>
Handling data	<p>Solve a given problem by collecting, classifying, representing and interpreting data in Venn and Carroll diagrams: two criteria.            Use a computer and a branching tree program to sort shapes or numbers.</p>
Assess and review	